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Virial Coefficients of Pure Gases and Mixtures

SUBVOLUME B

Virial Coefficients of Mixtures

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Virial Coefficients of Pure Gases and Mixtures

Subvolume B
Virial Coefficients of Mixtures

J.H. Dymond, K.N. Marsh, R.C. Wilhoit

Edited by M. Frenkel and K.N. Marsh

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Preface

This critical compilation of virial coefficients of pure gases is a sequel to The Virial Coefficients of Pure Gases and Mixtures, by J.H. Dymond and E.B. Smith (Oxford University Press, 1979) and a companion of Virial Coefficients of Gases and Gas Mixtures, Subvolume A, Pure Compounds. This new and enlarged edition was prepared from the virial coefficient database at the Thermodynamics Research Center, formerly at Texas A&M University, College Station, Texas, and now located at the National Institute of Standards and Technology, Boulder, Colorado. This compilation will be of interest to the theoretical chemist as it includes the many sets of accurate gas imperfection data for mixtures that have been determined over the past twenty years by improved methods of gas density determination, by isochoric Burnett coupling methods and from speed of sound measurements, as well as by the more traditional techniques. The needs of the industrial chemist are met by these more reliable data and also the increased number of compounds for which data are now available.

For each mixture, the second virial coefficient data from different published sources are tabulated in increasing order of temperature, and an estimate of the uncertainty is given. Conversion to a uniform set of units is undertaken where necessary. In the majority of cases, where the data cover a sufficiently wide range of temperature, a weighted data fit has been made for the interaction second virial coefficients, and coefficients of the given equation are recorded. Values of the interaction second virial coefficient given by the equation at selected temperatures are quoted.

This volume includes material published up to the end of 1998. While every effort has been made to see that the tables are free from error, it is unlikely that there will be no omissions or mistakes. We would appreciate it if corrections could be brought to our attention.

Christchurch, New Zealand and Boulder, Colorado, USA, November 2002 The Editors

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Christchurch, New Zealand and Boulder, Colorado, USA, November 2002

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K.N. Marsh
R.C. Wilhoit

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1 Introduction

Accurate knowledge of the *p-V-T* behaviour of gas mixtures is essential, for example, (i) to calculate the pressure generated by mixtures of known composition at a fixed volume at given temperatures, (ii) to enable equitable custody transfer, where there are large volume flows of natural gas, and (iii) to obtain thermodynamically-consistent representation of liquid-vapour equilibria involving many components, particularly at super-atmospheric pressures. In addition, such data can provide important information on the potential energy functions, which represent the interactions between different kinds of molecules.

1.1 Mixture Virial Coefficients

The *p-V-T* behaviour of gas mixtures is conveniently represented by the theoretically-based virial equation of state, in which *Z*, the compressibility factor or compression factor, is represented by an infinite series expansion in either the density (reciprocal molar volume) or pressure, *p*:

$$Z = \frac{pV_\mathrm{m}}{RT} = 1 + B_\mathrm{mix}/V_\mathrm{m} + C_\mathrm{mix}/V_\mathrm{m}^2 + D_\mathrm{mix}/V_\mathrm{m}^3 + ... \tag{1.1}$$

$$Z = \frac{pV_\mathrm{m}}{RT} = 1 + B^*_\mathrm{mix}\,p + C^*_\mathrm{mix}\,p^2 + D^*_\mathrm{mix}\,p^3 + ... \tag{1.2}$$

where V_m is the molar volume, *T* the absolute temperature, and *R* the gas constant. B_mix, C_mix, D_mix….. in the density (or volume) series are termed the second, third, fourth…..mixture virial coefficients. They are functions of temperature. The importance of these virial coefficients lies in the fact that they represent the departure from gas ideality due to molecular interactions; the second virial coefficient arises from molecular pair interactions, the third virial coefficient from groups of three molecules, and so on.

The coefficients of these two equations are simply related as follows:

$$B_\mathrm{mix} = B^*_\mathrm{mix}RT \tag{1.3}$$

$$C_\mathrm{mix} = (B^{*\,2}_\mathrm{mix} + C^*_\mathrm{mix})(RT)^2 \tag{1.4}$$

$$D_\mathrm{mix} = (B^{*\,3}_\mathrm{mix} + 3B^*_\mathrm{mix}C^*_\mathrm{mix} + D^*_\mathrm{mix})(RT)^3\ . \tag{1.5}$$

For a ν-component mixture, these virial coefficients can be written as:

$$B_\mathrm{mix} = \sum_{i=1}^{\nu}\sum_{j=1}^{\nu} x_i x_j B_{ij} \tag{1.6}$$

$$C_\mathrm{mix} = \sum_{i=1}^{\nu}\sum_{j=1}^{\nu}\sum_{k=1}^{\nu} x_i x_j x_k C_{ijk} \tag{1.7}$$

etc., where x_i is the mole fraction of component *i*. Specifically, for a two-component mixture,

$$B_\mathrm{mix} = x_1^2 B_{11} + 2x_1x_2B_{12} + x_2^2B_{22} \tag{1.8}$$

$$C_\mathrm{mix} = x_1^3C_{111} + 3x_1^2x_2C_{112} + 3x_1x_2^2C_{122} + x_2^3C_{222} \tag{1.9}$$

etc.

Here, B_{11} and B_{22} are the second virial coefficients of the pure components. B_{12} is termed the second interaction virial coefficient, the cross virial coefficient, the cross-term virial coefficient, or the mixed virial coefficient. It can be related to the potential energy function, $U(R_{12})$, which describes the interaction of molecules of species 1 with those of species 2 in terms of the molecular separation R_{12}. For example, for the interaction of molecules with spherically-symmetric potential energy functions,

$$B_{12} = -2\pi N_A \int_0^\infty \left(e^{-U(R_{12})/kT} - 1\right) R_{12} dR_{12} \tag{1.10}$$

where N_A is the Avogadro number.

Similarly, C_{111} and C_{222} are the third virial coefficients for the pure components. C_{112} represents the departure from gas ideality due to interactions of two molecules of 1 with one molecule of 2; C_{122} arises from interactions of two molecules of 2 with one molecule of 1.

As an illustration of the variation with temperature of the pure-component second and third virial coefficients, and the cross virial coefficients, results for the system methane + propane are shown in Figures 1 and 2.

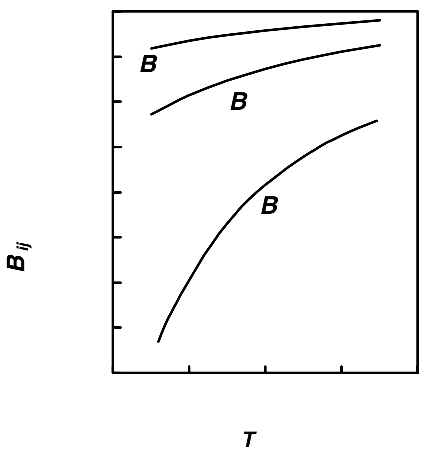

Fig. 1. Second virial coefficients for methane (1) + propane (2)

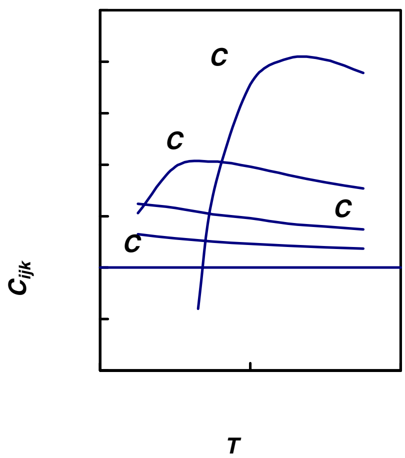

Fig. 2. Third virial coefficients for methane (1) + propane (2)

1.2 Experimental Methods

Many of the methods for the measurement of virial coefficients of pure compounds, which were described in the first volume 2002-dym/mar, are applicable also to mixtures. These can be classified as (a) *p-V-T* measurements, as made by groups at Keio University, Yokahama, Japan, 96-sat/kiy, at the Physikalisch-Technische Bundesanstalt, Braunschweig, Germany 95-bla/wei, at Texas A&M University, U.S.A. 88-fon/mar, at Wilhelm-Pieck University, Rostock, Germany 88-pie/ope and at the Institute for Chemical Technology, Lyngby, Denmark 85-mol/ang, (b) speed of sound measurements, which have been carried out by the groups of Ewing (University College, London) and Trusler (Imperial College, London) 92-ewi/tru, 96-tru/wak, (c) Joule-Thomson measurements, made by the group of Wormald (University of Bristol, UK) 99-wor/joh and references therein, and (d) refractive index and relative permittivity measurements, which have been made by the groups at Brown University, Rhode Island, U.S.A. 76-cop/col, and at Ruhrgas AG, Essen, Germany 87-jae. These methods give values for mixture virial coefficients, from which the interaction virial coefficients are calculated from equations (1.8) and (1.9), with known values of the coefficients for the pure components. Random error propagation has been used by Eubank and Hall 90-eub/hal to obtain the optimum composition for determination of the cross virial coefficients. Where measurements are made at a single composition, the equimolar composition is optimum for the determination of B_{12}, when all errors are equal. From measurements at higher pressures, minimisation of the combined errors in B_{12}, C_{112} and C_{122} at two compositions leads to the best results when the mole fractions are close to 0.33 and 0.66, when all errors are equal. It should be noted, however, that the uncertainty in the value of B_{12} derived from equation (1.8) will be greater than that in the pure-component values of B. For an equimolar mixture, with B_{11}, B_{22} and B_{mix} having roughly equal values and equal uncertainties, the uncertainty in B_{12} will be as much as double that for the other B values. There is great advantage, therefore, in using methods that provide a more direct route to these interaction coefficients, such as: (i) gas mixing, (ii) solubility in compressed gases, and (iii) gas-liquid chromatography.

1.2.1 Gas Mixing Measurements

When two real gases are mixed at constant temperature, measurements can be made either of the pressure change that results at constant total volume, or of the volume change that occurs at constant pressure. In practice, it is the former method which has been used in recent times, by groups at the University of California, Los Angeles, U.S.A. 80-pas/han, at the University of Adelaide, Australia 93-big/dun, at the University of Canterbury, Christchurch, New Zealand 83-mce/has, and at Osaka University, Japan 82-ohg/nak. The pressure change that develops on mixing two gases, which are initially in bulbs of identical volume at constant temperature, is related to the excess second virial coefficient, B^{E}, which is defined as

$$B^{\text{E}} = B_{12} - 0.5(B_{11} + B_{22})\,. \tag{1.11}$$

The expression, given by Knobler 67-kno, is

$$B^{\text{E}} = 2RT\Delta p/p^2 - \left\{(B_{11} - B_{22})^2/2 - B^{\text{E}}(B_{11} + B_{22}) + 3(F_1 + F_2)/4\right\}p/RT + \ldots\ldots\ldots \tag{1.12}$$

where p is the filling pressure, Δp is the pressure change on mixing, and F_i is the excess third virial coefficien,t defined as

$$F_i = C_{iij} - \left(2C_{iii} + C_{jjj}\right)\big/3\,. \tag{1.13}$$

To a good approximation, for systems such as binary mixtures of rare gases, B^{E} can be calculated from just the first term in this expression 69-bre/vau. Corrections for the other terms can be included.

In principle, the experimental technique is straightforward, but careful attention has to be paid to the mixing of the gases, which can be achieved by use of a Toepler pump 59-kno/bee. This, however, introduces problems, which can be overcome by having cold fingers sealed into the vessels, to which liquid nitrogen can be added 67-kno. Alternatively, a Loschmidt mixing cell 82-bel/dun can be used, in which the heavier gas is in the upper part of the cell. Methods for the measurement of the pressure difference between the gas mixture and a gas in a third vessel at the original pressure, include use of manometric fluids, a Texas Instruments quartz spiral gauge and a pressure transducer.

1.2.2 Solubility Measurements in Compressed Gases

The solubility of a liquid in a gas at intermediate pressures, for example 1 to 10 MPa, differs from that given by the Raoult's law expression, mainly as a result of vapour non-ideality. In terms of its fugacity coefficient, φ_1, the mole fraction of the liquid in a gas, y_1, is given by the expression 59-pra/ben

$$y_1 = \frac{(1-x_2)\,p_1^0\varphi_1^0}{\varphi_1 p}\exp\left(\frac{v_{\text{L}}^1(p - p_1^0)}{RT}\right) \tag{1.14}$$

where, in the case of low solubility, v_{L}^1 can be taken as the molar volume of the pure liquid, x_2 is the mole fraction solubility of the gas in the liquid, p and T are the experimental pressure and temperature, p_1^υ is the saturated vapour pressure at temperature T, and φ_1^υ represents the fugacity coefficient of the pure liquid.

For densities that are sufficiently low that contributions from third virial coefficients can be neglected, the fugacity coefficient φ_1 can be expressed in terms of the virial equation of state as

$$\ln \quad \varphi_1 = (2/V_\mathrm{m})(y_2 B_{12} + y_1 B_{11}) - \ln Z \tag{1.15}$$

where V_m and Z are the molar volume and compression factor of the gaseous mixture.

Equations (1.14) and (1.15) can be combined and solved iteratively to determine values for B_{12} from measurements of the solubility y_1. Since, in general for the systems studied, $y_1 \ll y_2$, uncertainties in B_{11} have little effect on the derived B_{12}. An uncertainty of 1% in y_1 gives rise to an uncertainty of about 5 $\mathrm{cm^3 \cdot mol^{-1}}$ in B_{12} at a pressure of around 3 MPa.

In principle, this method just involves the saturation of the gas to be studied with vapour from the liquid under pressure, by passage of the gas through the liquid, care being taken to prevent entrainment of the liquid and the escape of spray. The gas-vapour mixture is then expanded into a low pressure system, where the vapour is removed from the gas stream by passage through drying tubes, in the case of water, or through a series of cold traps. This technique has been used by groups at the University of California, Berkeley, U.S.A. 68-rig/pra and at the University of Georgia, Athens, U.S.A. 72-hem/kin.

1.2.3 Gas-Liquid Chromatography Measurements

Values for B_{12} for mixtures of solute vapour and carrier gas are required in order to determine zero-pressure retention volumes from values measured in a gas-liquid chromatographic column at finite pressures. However, by modelling the elution process it is possible to devise extrapolation procedures, which lead to the determination of B_{12} values. This was investigated by groups at the University of Bristol, UK 65-eve, 69-cru/gai and their later analysis led to the following expression for the net retention volume, V_N, which is the outlet retention volume adjusted to the mean column pressure:

$$\ln V_\mathrm{N} = \ln V_\mathrm{N}^\mathrm{o} + \beta p_\mathrm{o} J_3^4 \tag{1.16}$$

where

$$\beta = \left(2B_{12} - v_1^\infty\right) / (RT) \tag{1.17}$$

$$p_\mathrm{o} J_3^4 = \left(3p_\mathrm{o}/4\right)\left(\frac{(p_\mathrm{i}/p_\mathrm{o})^4 - 1}{(p_\mathrm{i}/p_\mathrm{o})^3 - 1}\right) \tag{1.18}$$

and p_i, p_o are the inlet and outlet pressures, respectively, v_1^∞ is the partial molar volume of the solute at infinite dilution and V_N^o is the value of V_N corresponding to $p_\mathrm{i} = p_\mathrm{o}$. A third term in the expression, not given above, involves the third virial coefficient, C_{122}, but neglect of this term is likely to introduce an error of only about ± 2 $\mathrm{cm^3 \cdot mol^{-1}}$ in the calculated B_{12}.

1.3 Theoretical Calculation of Interaction Virial Coefficients

The most satisfactory methods of data correlation are based on sound theory. In the case of the second virial cross-coefficient, this depends on accurate knowledge of the intermolecular pair potential energy function, U_{12} (R, ω_1, ω_2) which, in general, depends on the orientations, ω_1 and ω_2, as well as the separation, R, of the molecules:

$$B_{12}(T) = -\frac{N_A}{2V\Omega^2}\iint f_{12}\,\mathrm{d}\tau_1\mathrm{d}\tau_2 \tag{1.19}$$

where f_{12} = exp{$-U_{12}$ (R, ω_1, ω_2)/(kT)} -1, and U_{12} (R, ω_1, ω_2) is the pair-interaction potential-energy function for the unlike pair of molecules. For a linear molecule, $\Omega = 4\pi$ and $\mathrm{d}\tau_i = \mathrm{d}r_i \sin\theta_i\, \mathrm{d}\theta_i\, \mathrm{d}\varphi_i$, where θ_i and φ_i are the angles necessary to specify the orientation. For a three-dimensional rigid rotator, $\Omega = 8\pi^2$ and $\mathrm{d}\tau_i = \mathrm{d}r_i \sin\theta_i\, \mathrm{d}\theta_i\, \mathrm{d}\varphi_i\, \mathrm{d}\psi_i$, where θ_i, φ_i, and ψ_i are the Euler angles.

It is only for the simplest of substances that *ab initio* calculations of the pair-interaction potential-energy have been possible with sufficient accuracy. Systematic studies on the interactions of pairs of unlike rare-gas atoms by the group of Aziz (University of Waterloo, Ontario, Canada), for example, Ne + Ar 88-bar/azi, used a combination of an *ab initio* calculation of the self-consistent Hartree-Fock repulsion between the closed shells, a semi-empirical estimate of the correlation energy, and values for the dispersion coefficients, to give a realistic potential form. Values for the five adjustable parameters are then derived from a fit of high-energy total cross sections (which determines the repulsive wall of the potential), second virial coefficient data, transport data (viscosity, thermal conductivity, diffusion and thermal diffusion coefficients), and differential cross sections. When the potential functions are determined without using experimental interaction second virial coefficients, as in the case of Ne + Kr and Ne + Xe 89-bar/sla, then the calculated values of B_{12} provide a test of the quoted uncertainty of the experimental data for those mixtures.

In the case of an atom interacting with a diatomic molecule, it is necessary to know the potential surface in order to calculate macroscopic properties. Three types of potential that have proved successful are the BTT (Bowers-Tang-Toennies) surface 88-bow/tan, the MMSV (Morse-Morse-spline-van der Waals) potential surface 93-ben/cas and an exchange-Coulomb model intermolecular potential-energy surface 95-dha/mcc.

The BTT surface is obtained 88-bow/tan by expressing the anisotropy of the intermolecular potential by a Legendre expansion, of which the first three terms were taken and the radial coefficients were related to potentials at geometries with θ equal 0°, 45° and 90°. These potentials were generated by adding a simple Born-Mayer repulsive term, with parameters derived from SCF (Self-Consistent Field) calculations, to a damped asymptotic *ab initio* dispersion series, with available dispersion coefficients. The resulting potentials, which contain no adjustable parameters, were used to calculate B_{12} values for He + N_2, Ne + N_2 and Ar + N_2, and close agreement was found with experiment.

The MMSV 93-ben/cas is an empirical potential for which the parameters are derived from a multiproperty fit using molecular-beam total differential and integral scattering data, B_{12} data, transport properties and transport-property field effects, and relaxation phenomena.

Table 1. Comparison of the calculated and measured second virial cross-coefficients for Ar + N_2.

T/K	B_{12}/cm^3·mol^{-1}				
	Expt.[a]	XC0	XC3	BTT	MMSV
90.0	-208.4 ± 3	-181.73	-211.21	-210.62	-200.24
100.0	-171.3 ± 3	-149.55	-173.59	-172.99	-164.60
125.0	-113.0 ± 3	-98.23	-114.50	-113.98	-108.51
150.0	-79.3 ± 2	-68.18	-80.43	-80.00	-76.10
200.0	-42.3 ± 2	-34.76	-42.97	-42.68	-40.45
250.0	-22.6 ± 1	-16.78	-23.05	-22.80	-21.44
300.0	-10.4 ± 0.5	-5.67	-10.77	-10.57	-9.75
400.0	3.6 ± 0.2	7.15	3.36	3.52	3.69

[a] 92-ewi/tru

The exchange-Coulomb (XC0) potential energy model 95-dha/mcc was initially used to construct pair-potential energy functions for atomic species (see, for example, 78-ng /mea; 92-azi/sla), and was extended to the interactions of such atom + diatom systems as He + CO 94-ler/bis, 96-dha/mea , Kr + N_2 95-dha/mea and Ar + N_2 95-dha/mcc. The initial XC0 surface was improved by considering some of the coefficients as adjustable parameters, which were determined from experimental data, including interaction second virial coefficients and three representative lines of the microwave spectrum of the $^{14}N_2$-Ar van der Waals complex. A comparison of the fit which was obtained to the experimental second virial cross-coefficient data for this system with the optimised surface (XC3), and that given by the XC0, BTT and MMSV potentials is shown in Table 1, which is taken from 95-dha/mcc.

As illustrated here with the XC3 surface, second virial cross-coefficient data play an important role together with high-resolution spectra (microwave, far-infrared and mid-infrared) of van der Waals complexes in the determination of atom + diatom potentials, and also atom + linear polyatomic potentials (see, for example, 96-hut/ern).

1.4 Correlation, Estimation and Prediction of Virial Coefficients

For correlation of the interaction second virial coefficients of mixtures of non-polar molecules, the same form of equation as that proposed by Tsonopoulos 74-tso for non-polar compounds can be used, whereby the reduced second virial coefficient is expressed in terms of T_r, the temperature reduced by the critical temperature, and a third parameter, the acentric factor ω, which had been introduced to extend the application to non-spherical non-polar molecules, to give

$$\begin{aligned} B_{ij}\,p_{c,ij}/RT_{c,ij} &= 0.1445 - 0.330/T_r - 0.1385/T_r^2 - 0.0121/T_r^3 - 0.000607/T_r^8 \\ &+\omega_{ij}\left\{0.0637 + 0.331/T_r^2 - 0.423/T_r^3 - 0.008/T_r^8\right\}. \end{aligned} \tag{1.20}$$

Here, the characteristic parameters $p_{c,ij}$, $T_{c,ij}$ and ω_{ij} are related to the pure component parameters by the following mixing rules:

$$T_{c,ij} = \left(1-k_{ij}\right)\left(T_{c,i}T_{c,j}\right)^{1/2} \tag{1.21}$$

$$p_{c,ij} = \frac{4T_{c,ij}\left(p_{c,i}V_{c,i}/T_{c,i} + p_{c,j}V_{c,j}/T_{c,j}\right)}{\left(V_{c,i}^{1/3}+V_{c,j}^{1/3}\right)^3} \tag{1.22}$$

$$\omega_{ij} = 0.5\left(\omega_i + \omega_j\right). \tag{1.23}$$

The most sensitive mixing rule is the one for $T_{c,ij}$ in which k_{ij} is a characteristic constant for each binary. The geometric-mean rule applies only when the components are very similar in size and shape. Generally, in the absence of specific chemical interactions, $T_{c,ij}$ is less than the geometric mean and k_{ij} is positive. Tabulations of k_{ij} have been given by Chueh and Prausnitz 67-chu/pra and Hiza and Duncan 70-hiz/dun, and an extension to the data base was presented by Tsonopoulos 79-tso. He showed that the most satisfactory correlation for k_{ij} with critical temperatures as correlating parameters was the geometric-arithmetic-mean correlation of Fender and Halsey 62-fen/hal:

$$k_{ij} = 1 - 2\left(T_{c,i}T_{c,j}\right)^{1/2}\Big/\left(T_{c,i}+T_{c,j}\right). \tag{1.24}$$

For alkane + alkane binaries, however, the relationship proposed by Chueh and Prausnitz 67-chu/pra with critical volumes as correlating parameters is more satisfactory 79-tso, 89-tso/dym:

$$k_{ij} = 1 - \left[2\left(V_{c,i}V_{c,j}\right)^{1/6}\Big/\left(V_{c,i}^{1/3}+V_{c,j}^{1/3}\right)\right]^3 . \tag{1.25}$$

For different binary mixtures where one component is a hydrocarbon, k_{ij} increases in a similar manner with the carbon number of that component, with a value around 0.3 where the carbon number is about 20 79-tso.

For mixtures involving polar compounds, the expression 74-tso for the reduced second virial coefficient, $B_{ij}\,p_{c,ij}/(RT_{c,ij})$, contains a polar term, $f^{(2)}(T_r)$, where

$$f^{(2)}(T_r) = a_{ij}/T_r^6 - b_{ij}/T_r^8\ . \tag{1.26}$$

For polar + non-polar binaries, $a_{ij} = 0$ and $b_{ij} = 0$, so the calculation of B_{ij} is carried out in exactly the same way as for non-polar binaries. Initial considerations 74-tso suggested that k_{ij} could be considered as constant for a given type of mixture with, for example, values of 0.13 for hydrocarbon + ketone, 0.15 for hydrocarbon + alkanol and 0.40 for hydrocarbon + water. More extensive results indicate that the optimum values for k_{ij} increase with the critical volume of the other component 97-tso/dym.

For polar + polar binaries, the arithmetic mean rule is applied to each parameter:

$$a_{ij} = 0.5\left(a_i + a_j\right) \tag{1.27}$$

$$b_{ij} = 0.5\left(b_i + b_j\right). \tag{1.28}$$

Values for a and b have been given for a number of substances 74-tso, 75-tso. For some polar haloalkanes, a was expressed in terms of the reduced dipole moment, with the leading term proportional to the dipole moment to the power 8. In application to halogenated methanes and halogenated ethanes, Weber 94-web, 97-web showed, from consideration of the Stockmayer intermolecular potential energy function for representation of these interactions, that a should be proportional to the dipole moment to the power 4. In order to obtain this correct dependence on dipole moment, the final term in each of the two parts of the Tsonopoulos equation (1.20) was omitted. It was found that the B data for the polar compounds in these series were best represented with a given by

$$a = -9 \cdot 10^{-7}\,\mu_r^2 \tag{1.29}$$

where the reduced dipole moment, μ_r , is defined as

$$\mu_r = 10^5\,\mu^2 p_c/T_c^2\ . \tag{1.30}$$

This representation gave a better fit than the Tsonopoulos equation for most of the compounds in these series 2000-dym. For extension to B_{12}, Weber uses the same expression for the corresponding-states temperature dependence as for B, with equations (1.21 to 1.23) for $T_{c,ij}$, $p_{c,ij}$ and ω_{ij}, and with $\mu_{r,ij}$ given by

$$\mu_{r,ij} = 10^5\,\mu_i\mu_j\,p_{c,ij}/T_{c,ij}^2\ . \tag{1.31}$$

Since polar-polar interactions are usually specific 74-tso, values of k_{ij} have to be derived either from experimental data for each system, or by analysis of vapour-liquid equilibrium data, using a simple equation of state, or from bubble-point curves and liquid phase compositions. Morrison and McLinden 93-mor/mcl give an empirical correlation of this parameter. Whether the Tsonopoulos or Weber correlation is used, just one experimental data point is required to determine k_{ij} and then B_{ij} can be calculated for a range of temperatures.

An alternative approach to the calculation of interaction second virial coefficients is that of Hayden and O'Connell 75-hay/oco. This uses the molecular concepts of free, metastable and bound pairs to which can be added the chemical contribution for strongly interacting pairs. For pure components, the generalised correlation requires the critical temperature and pressure, the mean radius of gyration, dipole moment and, where necessary, a parameter to describe molecular association. Mixing rules are given to enable calculations to be made of interaction second virial coefficients. The overall fit to mixture data for different kinds of molecules is similar to that given by the Tsonopoulos equation

For a satisfactory correlation of interaction third virial coefficients, it is best to turn to empirical methods. Chueh and Prausnitz 67-chu/pra-1 proposed that C_{ijk} could be written as:

$$C_{ijk} = \left(C_{ij} C_{jk} C_{ik}\right)^{1/3} . \tag{1.32}$$

Terms such as C_{ij} can be evaluated by the expression of Orbey and Vera 83-orb/ver, which gives the coefficient in reduced form as:

$$\begin{aligned} C_{ij} p_{c,ij}^2 \Big/ \left(RT_{c,ij}\right)^2 &= 0.01407 + 0.02432/T_r^{2.8} - 0.00313/T_r^{10.5} \\ &+\omega_{ij} \left(-0.02676 + 0.01770/T_r^{2.8} + 0.040/T_r^{3.0} - 0.003/T_r^{6.0} - 0.00228/T_r^{10.5}\right). \end{aligned} \tag{1.33}$$

The parameters $p_{c,ij}$, $T_{c,ij}$, and ω_{ij} are related to the pure component parameters by equations (1.21 to 1.23) and k_{ij} can be taken from the references given above. The advantage of this approach over other correlations for the third virial coefficient 67-chu/pra-1, 79-des/gra is that it uses critical pressure rather than critical volume, and only two other easily determined parameters.

An alternative approach 94-web, 97-web is to relate the third virial coefficients to the experimental second virial coefficients, and to the corresponding hard-sphere values, where the quantities involved are functions of temperature and reduced dipole moment.

1.5 Data Evaluation

1.5.1 Data Storage and Processing

The values of virial coefficients presented in this review were obtained through the following steps.

(a) Search of the world's scientific literature,

(b) Collection in a computer-readable database,

(c) Extraction of second interaction virial coefficients from the database and selection of the "best" values, and

(d) Fitting of these B_{12} values to a function of temperature.

Virial coefficients are constants in the virial equation of state of gases. They are not measured directly but are derived from a variety of observed properties. They are functions of temperature. Only those values based on some observation are reported here. The numerical values were extracted from the original publications, or from those collected by the Polish Academy of Science 96-dym/mar. The latter source furnished about one-third of the total set. To ensure integrity all values were then checked against the original documents after they were entered into the database. Literature through the end of 1998 is covered in the collection.

The numerical values of virial coefficients presented in this review were inserted into the SOURCE data system maintained by the Thermodynamics Research Center. The SOURCE contains experimental values of thermodynamic, thermochemical, and transport properties of pure compounds and binary and ternary mixtures 99-wil, 99-wil/mar, 2001-fre/don, 2001-yan/don. Each property value is linked to the compound or components of a mixture by use of a registry number assigned by Chemical Abstracts Service or by the Thermodynamics Research Center. Each value is also linked to the document that reports it. A key consisting of (a) the year of publication, (b) the first three letters of the last name of the first author and (c) the first three letters of the last name of the second author, if any, identifies literature references. An additional integer starting with 0 is included to form a unique key. As new data are published, they are added to SOURCE, thus maintaining a complete set which can serve as the basis for future compilations. Each property value in SOURCE is accompanied by an estimate of uncertainty. This takes the form of a bias, which defines a range of values below and above the property value. It is expected that the true value of the property lies in this range with a high probability (see references 99-wil, 99-wil/mar for additional explanation of uncertainties.) Uncertainties are assigned by the person responsible for adding the value to the database, or by a later evaluation. They are based on an assessment of the information in the original report, including uncertainties reported by the author. The assignment reflects all recognized sources of experimental error. All errors, independent of what variable is directly affected, are propagated to the listed virial coefficient.

1.5.2 Selection of B_{12} Values

Data values for second interaction virial coefficients were extracted from SOURCE by suitable software and then screened to identify the "best" (most accurate) values. The selection was based on a comparison of the estimated uncertainties of values for the same mixture. The selection also took into account the distribution of virial coefficients with temperature using an algorithm developed by the Thermodynamics Research Center and used for several compilations. Briefly, the uncertainty for each data value in a set was compared to a weighted mean of the uncertainties of all the other values. The weighting factor was an inverse exponential function of the absolute value of the difference between the temperature of the value being evaluated and the temperatures of the other values. The screening level, the size of the data set, and range of temperatures covered determined the parameters used in the comparison. Additional details are given in 96-wil/mar. Selected values are marked with various symbols in the tables of data.

1.5.3 Fitting B_{12} Values to Smoothing Functions

The selected values of the second interaction virial coefficients for each mixture were fitted to a smoothing function of temperature by the least-squares criterion, whenever there were three or more data values over an appreciable temperature range. The squares of the deviation between calculated and observed values were weighted in proportion to the reciprocal of the square of the estimated uncertainties. The data were then scaled by subtracting the means of each term in the polynomial from the given values. This eliminated the constant term. The singular-value decomposition technique 88-pre/fla was used for the remaining coefficients. The constant was then regenerated from the means. The smoothing function used for the second virial coefficient was a polynomial in reciprocal temperature:

$$B_{12} = \sum a_i / T_i \;. \tag{1.34}$$

The number of terms used in these polynomials was sufficient to generate a random deviation between calculated and selected observed values. This number usually depended on the range of temperature covered by the data set. The maximum order of the polynomials was usually three. Additional terms seldom improved the fit significantly. The following metrics are given for each fitted set as a measure of fit to the data. The degree of freedom represents the number of distinct values in the selected set minus the order of the polynomial. The number of distinct values is the number separated by at least 1.5 K. The root-mean-square deviation (unweighted) is given by:

$$\mathrm{RMS} = \frac{\sqrt{\sum \left(B_{12,\mathrm{exp}} - B_{12,\mathrm{calc}}\right)^2}}{n} \tag{1.35}$$

where n is the total number of values in the data set.

The root-mean-square deviation (weighted) is given by:

$$RMS = \frac{\sqrt{\sum w_i \left(B_{12,\exp} - B_{12,\text{calc}}\right)^2}}{\sqrt{\sum w_i}} \tag{1.36}$$

where $w_i = 1/u_i^2$ with u_i the estimated uncertainty in the i^{th} value.

These functions have no theoretical basis. They furnish means of calculating tables of smoothed values of the second interaction virial coefficients and their derivatives and of visualising the scatter of experimental values.

1.6 The Tables

For those compounds where the values of B_{12} have been fitted by an equation, values for the equation coefficients and calculated B_{12} values at selected temperatures are given in Table 1. Experimental B_{12} data are presented in Table 2, together with an estimate of the uncertainty (δB). Where the B_{12} data have been fitted, the experimental results are denoted as B_{exp}, and deviations of the calculated values from these data, B_{exp} - B_{calc}, are given. Plots of these deviations are shown. Values for second virial coefficients for mixtures, B_{M}, together with their estimated uncertainty, δB_{M}, are tabulated in Table 3, with the mole fraction composition. Excess second virial coefficients and their uncertainties, $B^{\text{E}} \pm \delta B^{\text{E}}$, are given in Table 4.

Third virial coefficient data for mixtures, with uncertainty values, $C_{\text{M}} \pm \delta C_{\text{M}}$, are given in Table 5, and values for the different third interaction virial coefficients are listed, with their uncertainties, in Tables 6 and 7. These third interaction virial coefficients are not fitted in this review.

Chapter 2 contains tables of second and third virial coefficients of mixtures containing an inorganic compound with either an inorganic compound or an organic compound. The order of the tables is according to the Hill system as used by Chemical Abstracts for the inorganic compound, with the second component again in alphabet order according to the Hill system. In this way all mixtures associated with a particular inorganic compound are grouped together. The Hill system involves placing the compounds in their alphabetic order except when C is present, in which case C is placed first, H second, and the remaining elements in alphabetic order. Chapter 3 contains mixtures of organic compounds, with the first compound ordered by the Hill system. The second components are also in Hill order. When two compounds have the same Hill formula, they are ordered alphabetically by compound name.

1.7 Glossary of Symbols

a_i	coefficient in equation (1.34)
a_{ij}, b_{ij}	coefficients in equation (1.26)
B	second virial coefficient
C	third virial coefficient
D	fourth virial coefficient
$f^{(2)}$	polar term in equation (1.26)
f_{12}	Meyer function: below equation (1.19)
F	excess third virial coefficient
J_3	a function of inlet and outlet pressures defined in equation (1.18)
k	Boltzmann constant
k_{ij}	binary interaction coefficient
n	number of data sets
N_{A}	Avogadro constant
p	pressure
R	intermolecular separation
R_{12}	gas constant
T	temperature
u	estimated uncertainty
U	intermolecular potential energy function
V	volume
w	weight applied to individual data points
x	mole fraction
y	mole fraction of liquid in a gas
Z	compressibility factor or compression factor

ϕ	liquid fugacity coefficient
μ	dipole moment
v	partial molar volume
θ, ϕ, ψ	Euler angles
ω	acentric factor
ω	orientation

Subscripts

1,2	component number
11, 22	second virial coefficients of pure components (with B)
12	second interaction virial coefficient (with B)
111, 222	third virial coefficients of pure components (with C)
112, 122	third interaction virial coefficients (with C)
c	critical
L	liquid
m	molar
mix	mixture
o	pure liquid
N	net retention volume (with V)
r	reduced
∞	infinite dilution

Superscripts

*	virial coefficients in the pressure series
E	excess property

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2 Virial Coefficients of Mixtures Containing an Inorganic Compound

Argon	**[7440-37-1]**	**Ar**	**MW = 39.95**	**1**
Carbon monoxide	**[630-08-0]**	**CO**	**MW = 28.01**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 3.1874 \cdot 10 - 8.6870 \cdot 10^3/(T/\text{K}) - 1.4896 \cdot 10^6/(T/\text{K})^2 + 2.5386 \cdot 10^7/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
125	-120.0 ± 3	250	-25.1 ± 3	350	-4.5 ± 3
200	-45.6 ± 3	300	-12.7 ± 3	475	7.2 ± 3

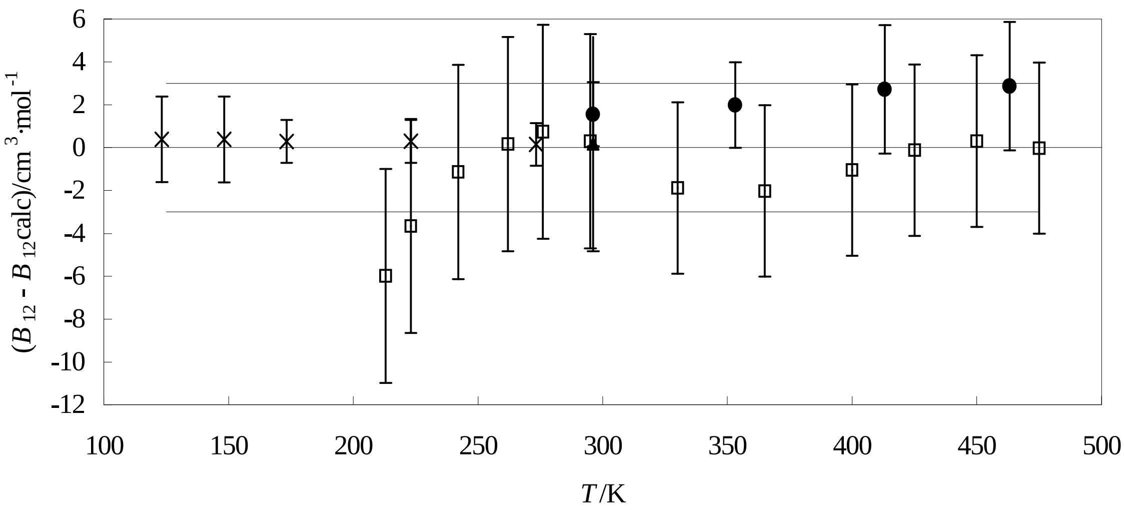

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp}-B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp}-B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
123.20	-122.81 ± 2.0	0.4	67-bre (×)	242.00	-28.80 ± 5.0	-1.1	80-sch/geh (□)
148.20	-86.38 ± 2.0	0.4	67-bre (×)	262.00	-21.40 ± 5.0	0.2	80-sch/geh (□)
173.20	-62.76 ± 1.0	0.3	67-bre (×)	273.20	-18.48 ± 1.0	0.2	67-bre (×)
213.00	-45.10 ± 5.0	-6.0	80-sch/geh (□)	276.00	-17.20 ± 5.0	0.7	80-sch/geh (□)
223.00	-38.40 ± 5.0	-3.7	80-sch/geh (□)	295.00	-13.40 ± 5.0	0.3	80-sch/geh (□)
223.20	-34.45 ± 1.0	0.2	67-bre (×)	296.15	-13.30 ± 5.0	0.2	82-sch/mue (▲)

cont.

Argon + Carbon monoxide (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
296.15	-11.90 ± 1.5	1.6	96-vat/sch (●)	413.15	5.20 ± 3.0	2.7	96-vat/sch (●)
330.00	-9.30 ± 4.0	-1.9	80-sch/geh (☐)	425.00	3.40 ± 4.0	-0.1	80-sch/geh (☐)
353.15	-2.10 ± 2.0	2.0	96-vat/sch (●)	450.00	5.80 ± 4.0	0.3	80-sch/geh (☐)
365.00	-4.60 ± 4.0	-2.0	80-sch/geh (☐)	463.15	9.30 ± 3.0	2.9	96-vat/sch (●)
400.00	0.20 ± 4.0	-1.0	80-sch/geh (☐)	475.00	7.20 ± 4.0	0.0	80-sch/geh (☐)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
123.20	0.500	0.66 ± 0.20	67-bre	223.20	0.500	-0.49 ± 0.20	67-bre
148.20	0.500	0.07 ± 0.20	67-bre	273.20	0.500	-0.66 ± 0.20	67-bre
173.20	0.500	-0.22 ± 0.20	67-bre				

Argon **[7440-37-1]** **Ar** **MW = 39.95** **2**
Carbonyl sulfide **[463-58-1]** **COS** **MW = 60.08**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-77.2 ± 5.0	92-bel/big	310.00	-55.1 ± 4.5	92-bel/big
300.00	-64.7 ± 5.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	66.8 ± 1.0	92-bel/big	310.00	0.500	65.2 ± 1.0	92-bel/big
300.00	0.500	68.1 ± 1.0	92-bel/big				

Argon **[7440-37-1]** **Ar** **MW = 39.95** **3**
Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -7.2525 \cdot 10^2 + 9.6341 \cdot 10^5/(T/K) - 4.5827 \cdot 10^8/(T/K)^2 + 9.1873 \cdot 10^{10}/(T/K)^3 - 6.7735 \cdot 10^{12}/(T/K)^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
210	-91.6 ± 5	300	-39.3 ± 4	400	-10.0 ± 4
250	-58.1 ± 4	350	-22.2 ± 4	450	-4.4 ± 4

cont.

Argon + Carbon dioxide (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
213.00	-86.3 ± 5.0	0.5	80-sch/geh (O)	300.00	-41.7 ± 4.0	-2.4	92-bel/big (Δ)
213.00	-94.0 ± 7.0	-7.2	82-sch/mue (+)	303.15	-31.8 ± 4.6	6.4	56-cot/ham (×)
223.00	-75.5 ± 5.0	-0.8	80-sch/geh (O)	303.20	-34.2 ± 2.0	3.9	69-lic/sch (▲)
223.20	-74.8 ± 1.0	-0.2	67-bre (☐)	310.00	-38.6 ± 4.0	-2.9	92-bel/big (Δ)
242.00	-62.9 ± 5.0	-1.1	80-sch/geh (O)	313.20	-31.2 ± 2.0	3.3	69-lic/sch (▲)
242.00	-70.0 ± 7.0	-8.2	82-sch/mue (+)	320.00	-35.3 ± 1.3	-3.2	82-mar/tre (–)
248.20	-58.4 ± 1.0	0.5	67-bre (☐)	322.85	-30.1 ± 2.0	1.0	70-bos/col (●)
262.00	-50.8 ± 5.0	2.5	80-sch/geh (O)	323.10	-28.3 ± 2.0	2.7	69-lic/sch (▲)
273.20	-50.6 ± 1.0	-1.5	67-bre (☐)	330.00	-27.3 ± 5.0	1.4	80-sch/geh (O)
276.00	-43.3 ± 5.0	4.8	80-sch/geh (O)	330.00	-35.0 ± 5.0	-6.3	82-sch/mue (+)
276.00	-51.0 ± 6.0	-2.9	82-sch/mue (+)	333.15	-25.8 ± 4.2	1.8	56-cot/ham (×)
288.20	-40.3 ± 2.0	3.3	69-lic/sch (▲)	363.15	-19.6 ± 4.2	-1.2	56-cot/ham (×)
290.00	-45.2 ± 1.4	-2.2	82-mar/tre (–)	365.00	-16.2 ± 5.0	1.7	80-sch/geh (O)
290.00	-46.4 ± 4.0	-3.4	92-bel/big (Δ)	400.00	-6.0 ± 4.0	4.0	80-sch/geh (O)
295.00	-37.2 ± 5.0	3.9	80-sch/geh (O)	400.00	-13.0 ± 3.0	-3.0	82-sch/mue (+)
295.00	-44.0 ± 6.0	-2.9	82-sch/mue (+)	425.00	-3.1 ± 4.0	3.3	80-sch/geh (O)
296.00	-37.0 ± 2.0	3.8	69-lic/sch (▲)	450.00	0.5 ± 4.0	4.9	80-sch/geh (O)
296.15	-44.1 ± 5.0	-3.4	82-sch/mue (+)	450.00	-7.0 ± 2.0	-2.6	82-sch/mue (+)
300.00	-40.8 ± 1.3	-1.5	82-mar/tre (–)	475.00	1.7 ± 4.0	5.6	80-sch/geh (O)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	0.500	60.4 ± 0.20	67-bre	300.00	0.500	27.5 ± 0.20	82-mar/tre
248.20	0.500	44.9 ± 0.20	67-bre	300.00	0.500	26.9 ± 1.00	92-mar/tre
273.20	0.500	35.1 ± 0.20	67-bre	310.00	0.500	25.3 ± 1.00	92-mar/tre
290.00	0.500	28.8 ± 0.20	82-mar/tre	320.00	0.500	23.4 ± 0.20	82-mar/tre
290.00	0.500	28.8 ± 1.00	92-bel/big				

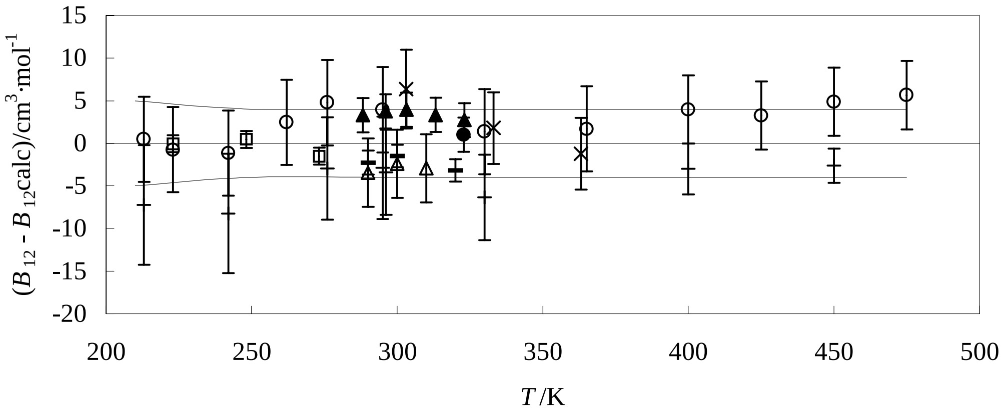

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon	**[7440-37-1]**	**Ar**	**MW = 39.95**	**4**
Hydrogen chloride	**[7647-01-0]**	**ClH**	**MW = 36.46**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 1.6897 · 10 – 8.7669 · 10^2/(T/K) – 4.8549 · 10^6/(T/K)^2 + 1.5096 · 10^8/(T/K)^3

T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}
200	-90.0 ± 7	300	-34.4 ± 5	400	-13.3 ± 3
250	-54.6 ± 5	350	-21.7 ± 4	475	-5.1 ± 3

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{exp} ± δB cm^3· mol^{-1}	B_{exp} - B_{calc} cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	B_{exp} ± δB cm^3· mol^{-1}	B_{exp} - B_{calc} cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
190.00	-99.3 ± 8.0	0.9	79-sch/leu-1(Δ)	330.00	-26.4 ± 4.3	-0.3	79-sch/leu-1(Δ)
200.00	-90.7 ± 7.5	-0.7	79-sch/leu-1(Δ)	370.00	-17.8 ± 3.9	0.2	79-sch/leu-1(Δ)
225.00	-70.5 ± 6.5	-0.9	79-sch/leu-1(Δ)	400.00	-13.7 ± 3.7	-0.4	79-sch/leu-1(Δ)
250.00	-54.6 ± 5.7	0.0	79-sch/leu-1(Δ)	420.00	-10.5 ± 3.5	0.2	79-sch/leu-1(Δ)
275.00	-42.0 ± 5.1	1.2	79-sch/leu-1(Δ)	450.00	-7.6 ± 3.4	-0.2	79-sch/leu-1(Δ)
295.00	-36.1 ± 4.8	-0.1	79-sch/leu-1(Δ)	480.00	-4.4 ± 3.2	0.2	79-sch/leu-1(Δ)
300.00	-34.4 ± 4.7	0.0	79-sch/leu-1(Δ)				

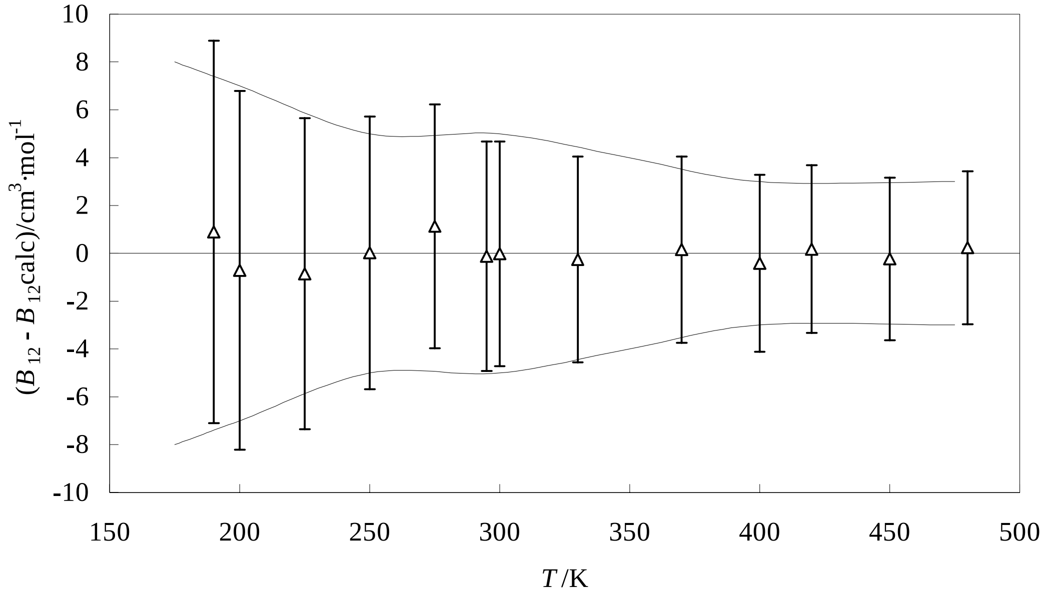

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon **[7440-37-1]** **Ar** **MW = 39.95** **5**
Sulfur hexafluoride **[2551-62-4]** **F_6S** **MW = 146.06**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3{\cdot}\text{mol}^{-1} = 1.0203 \cdot 10^2 - 7.6387 \cdot 10^4/(T/\text{K}) + 1.3478 \cdot 10^7/(T/\text{K})^2 - 1.6307 \cdot 10^9/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
250	-92.2 ± 4	350	-44.2 ± 3	450	-19.1 ± 3
300	-63.2 ± 4	400	-30.2 ± 3	550	-2.1 ± 3

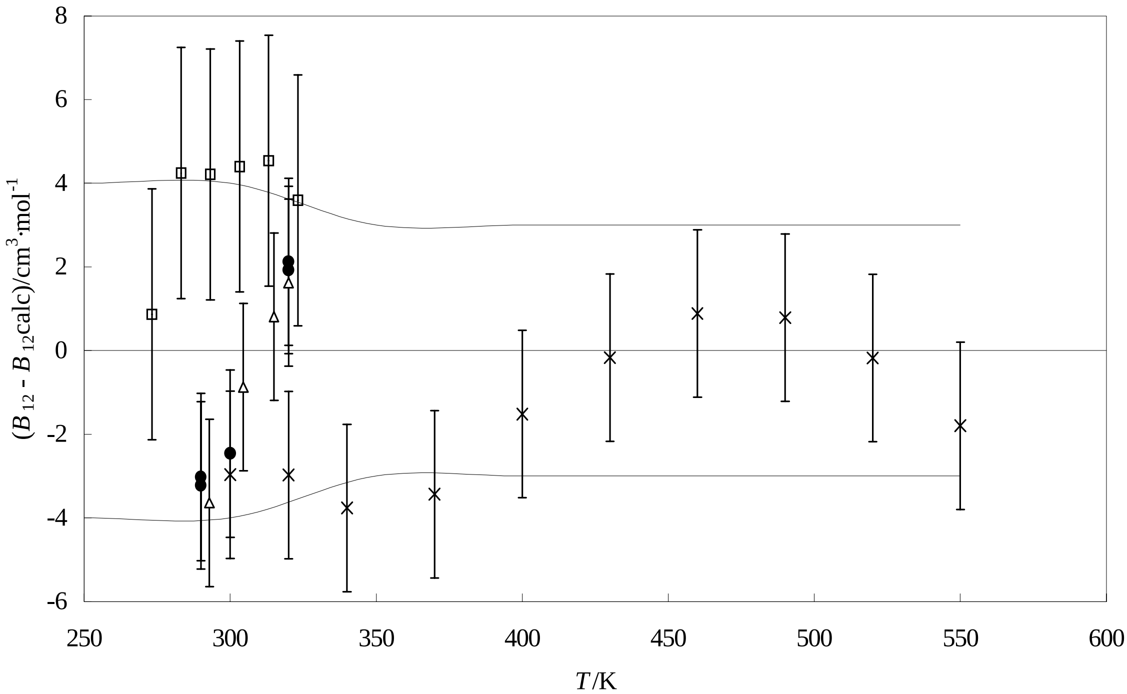

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp} - B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp} - B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
273.20	-76.1 ± 3.0	0.9	76-san/uri-1(□)	304.50	-62.1 ± 2.0	-0.9	81-bel/dun (Δ)
283.20	-67.2 ± 3.0	4.2	76-san/uri-1(□)	313.20	-53.0 ± 3.0	4.5	76-san/uri-1(□)
290.00	-71.0 ± 2.0	-3.0	82-mar/tre-1(●)	315.00	-56.0 ± 2.0	0.8	81-bel/dun (Δ)
290.00	-71.2 ± 2.0	-3.2	82-mar/tre-1(●)	320.00	-57.8 ± 2.0	-3.0	74-bel/rei (×)
292.90	-70.2 ± 2.0	-3.6	81-bel/dun (Δ)	320.00	-53.2 ± 2.0	1.6	81-bel/dun (Δ)
293.20	-62.2 ± 3.0	4.2	76-san/uri-1(□)	320.00	-52.9 ± 2.0	1.9	82-mar/tre-1(●)
300.00	-66.2 ± 2.0	-3.0	74-bel/rei (×)	320.00	-52.7 ± 2.0	2.1	82-mar/tre-1(●)
300.00	-65.7 ± 2.0	-2.5	82-mar/tre-1(●)	323.20	-50.0 ± 3.0	3.6	76-san/uri-1(□)
303.20	-57.4 ± 3.0	4.4	76-san/uri-1(□)	340.00	-51.3 ± 2.0	-3.8	74-bel/rei (×)

cont.

Argon + Sulfur hexafluoride (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
370.00	-41.6 ± 2.0	-3.4	74-bel/rei (×)	490.00	-10.8 ± 2.0	0.8	74-bel/rei (×)
400.00	-31.7 ± 2.0	-1.5	74-bel/rei (×)	520.00	-6.8 ± 2.0	-0.2	74-bel/rei (×)
430.00	-23.4 ± 2.0	-0.2	74-bel/rei (×)	550.00	-3.9 ± 2.0	-1.8	74-bel/rei (×)
460.00	-16.2 ± 2.0	0.9	74-bel/rei (×)				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	87.6 ± 0.2	82-mar/tre-1	315.00	0.500	72.6 ± 0.3	81-bel/dun
290.00	0.500	87.4 ± 0.2	82-mar/tre-1	320.00	0.500	70.2 ± 0.3	81-bel/dun
292.90	0.500	84.3 ± 0.3	81-bel/dun	320.00	0.500	71.4 ± 0.2	82-mar/tre-1
300.00	0.500	80.6 ± 0.2	82-mar/tre-1	320.00	0.500	71.6 ± 0.2	82-mar/tre-1
304.50	0.500	77.8 ± 0.3	81-bel/dun				

Argon [7440-37-1] Ar MW = 39.95 6
Hydrogen [1333-74-0] H_2 MW = 2.02

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 3.3749 \cdot 10 - 8.2782 \cdot 10^3/(T/K) - 7.4655 \cdot 10^4/(T/K)^2 + 7.1912 \cdot 10^7/(T/K)^3 - 5.7163 \cdot 10^9/(T/K)^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
80	-80.5 ± 10	200	-4.1 ± 3	400	13.5 ± 3
150	-14.7 ± 5	300	7.3 ± 3	500	17.4 ± 3

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
77.30	-84.5 ± 9.0	5.7	82-sch/eli (×)	210.00	-2.4 ± 0.4	0.1	67-zan/bee (O)
87.10	-65.8 ± 9.0	-4.2	82-sch/eli (×)	220.00	-0.9 ± 0.2	0.2	67-zan/bee (O)
90.00	-52.1 ± 3.0	3.8	59-kno/bee (■)	223.15	-0.5 ± 3.0	0.2	69-bre/vau (●)
90.10	-60.5 ± 9.0	-4.8	82-sch/eli (×)	230.00	0.3 ± 0.2	0.1	67-zan/bee (O)
148.15	-16.8 ± 3.0	-1.5	69-bre/vau (●)	240.00	1.5 ± 0.2	0.1	67-zan/bee (O)
150.00	-18.5 ± 5.0	-3.8	80-per/sch (□)	248.15	2.6 ± 3.0	0.2	69-bre/vau (●)
170.00	-10.3 ± 1.0	-0.6	67-zan/bee (O)	250.00	2.5 ± 0.2	-0.1	67-zan/bee (O)
173.15	-9.6 ± 3.0	-0.5	69-bre/vau (●)	250.00	3.3 ± 5.0	0.7	80-per/sch (□)
175.00	-10.4 ± 5.0	-1.7	80-per/sch (□)	260.00	3.5 ± 0.2	-0.1	67-zan/bee (O)
180.00	-7.8 ± 0.8	-0.1	67-zan/bee (O)	270.00	4.2 ± 0.2	-0.4	67-zan/bee (O)
190.00	-5.7 ± 0.6	0.1	67-zan/bee (O)	273.15	5.3 ± 3.0	0.4	69-bre/vau (●)
198.15	-4.2 ± 3.0	0.2	69-bre/vau (●)	290.00	7.2 ± 0.5	0.7	82-mar/tre (–)
200.00	-4.0 ± 0.5	0.1	67-zan/bee (O)	293.15	7.2 ± 0.4	0.5	71-lop/roz (Δ)
200.00	-4.5 ± 5.0	-0.4	80-per/sch (□)	298.15	7.8 ± 3.0	0.7	69-bre/vau (●)

cont.

Argon + Hydrogen (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
300.00	7.8 ± 0.5	0.5	82-mar/tre (–)	350.00	11.4 ± 5.0	0.6	80-per/sch (□)
300.00	8.1 ± 5.0	0.8	80-per/sch (□)	400.00	13.8 ± 5.0	0.3	80-per/sch (□)
320.00	9.3 ± 0.5	0.5	82-mar/tre (–)	450.00	15.6 ± 5.0	0.0	80-per/sch (□)
323.15	9.4 ± 3.0	0.4	69-bre/vau (●)	500.00	16.7 ± 5.0	-0.7	80-per/sch (□)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	8.40 ± 0.20	82-mar/tre	320.00	0.500	7.60 ± 0.20	82-mar/tre
300.00	0.500	8.30 ± 0.20	82-mar/tre				

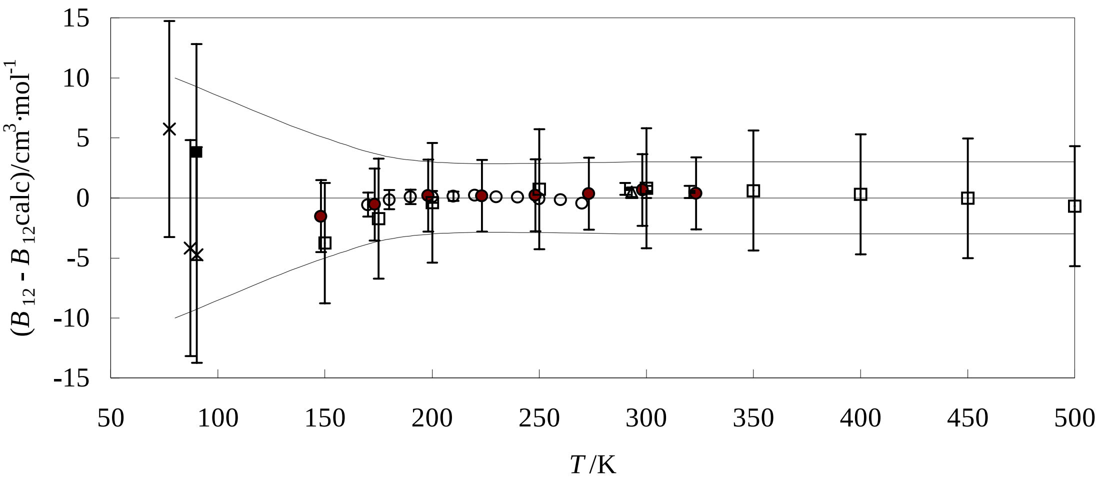

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon	**[7440-37-1]**	**Ar**	**MW = 39.95**	**7**
Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.7025 \cdot 10^3 - 1.8921 \cdot 10^6/(T/K) + 6.9275 \cdot 10^8/(T/K)^2 - 8.4515 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-37.5 ± 5	400	-18.6 ± 5		
350	-19.6 ± 5	450	-8.6 ± 5		

cont.

Argon + Water (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.15	-37.0 ± 6.0	2.4	68-rig/pra (O)	393.20	-23.0 ± 5.0	-3.9	81-ric/wor-1(■)
323.15	-25.0 ± 5.0	-1.7	68-rig/pra (O)	393.20	-24.0 ± 5.0	-4.9	88-wor/lan (Δ)
348.15	-20.0 ± 4.0	-0.3	68-rig/pra (O)	403.20	-19.0 ± 4.0	-0.7	81-ric/wor-1(■)
373.15	-14.0 ± 3.0	5.5	68-rig/pra (O)	403.20	-18.0 ± 4.0	0.3	88-wor/lan (Δ)
373.20	-19.0 ± 7.0	0.5	81-ric/wor-1(■)	413.20	-18.0 ± 8.0	-0.8	81-ric/wor-1(■)
373.20	-24.0 ± 7.0	-4.5	88-wor/lan (Δ)	413.20	-16.0 ± 7.0	1.2	88-wor/lan (Δ)
383.20	-18.0 ± 3.0	1.4	81-ric/wor-1(■)	423.20	-15.0 ± 4.5	0.5	81-ric/wor-1(■)
383.20	-20.0 ± 3.0	-0.6	88-wor/lan (Δ)	423.20	-12.0 ± 4.0	3.5	88-wor/lan (Δ)

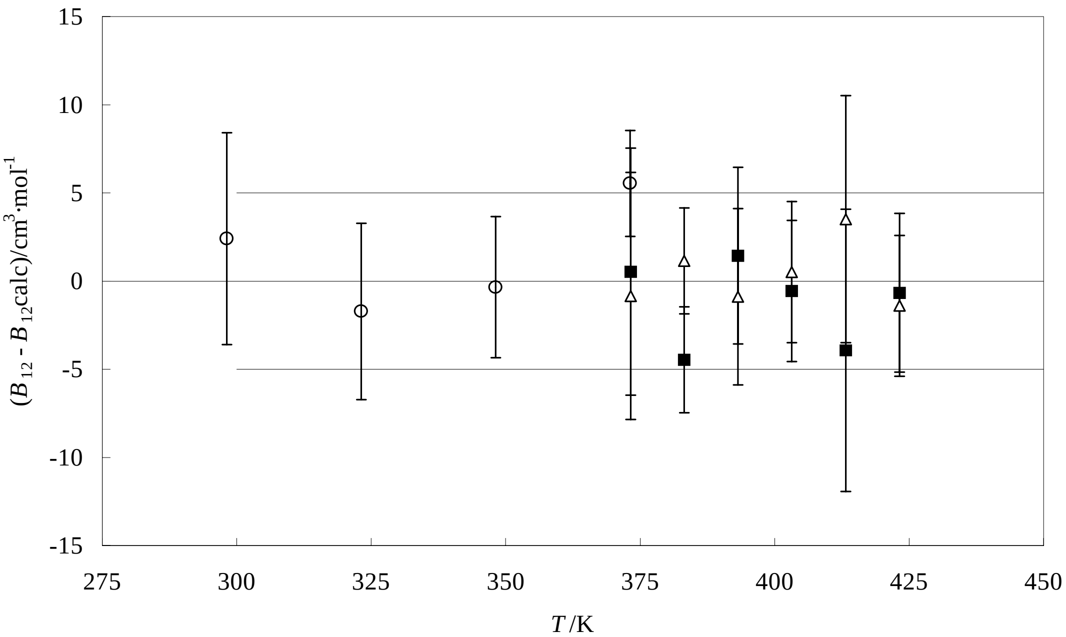

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon	**[7440-37-1]**	**Ar**	**MW = 39.95**	**8**
Ammonia	**[7664-41-7]**	**H_3N**	**MW = 17.03**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.1969 \cdot 10 + 2.1313 \cdot 10^4/(T/K) - 8.7141 \cdot 10^6/(T/K)^2$$

cont.

Argon + Ammonia (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
250	-66.1 ± 5	350	-22.2 ± 3	420	-10.6 ± 3
300	-37.7 ± 3	400	-13.1 ± 3		

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
238.15	-73.0 ± 15.0	3.1	91-sch/eli (Δ)	323.20	-29.0 ± 3.0	0.4	92-glo (□)
253.15	-62.0 ± 10.0	1.8	91-sch/eli (Δ)	348.20	-22.5 ± 2.0	0.1	92-glo (□)
273.15	-52.0 ± 9.0	-1.3	91-sch/eli (Δ)	373.20	-17.2 ± 1.5	0.2	92-glo (□)
296.15	-43.0 ± 6.0	-3.6	91-sch/eli (Δ)	398.20	-13.4 ± 0.5	0.0	92-glo (□)
298.15	-39.3 ± 3.0	-0.8	92-glo (□)	423.20	-10.3 ± 0.5	0.0	92-glo (□)

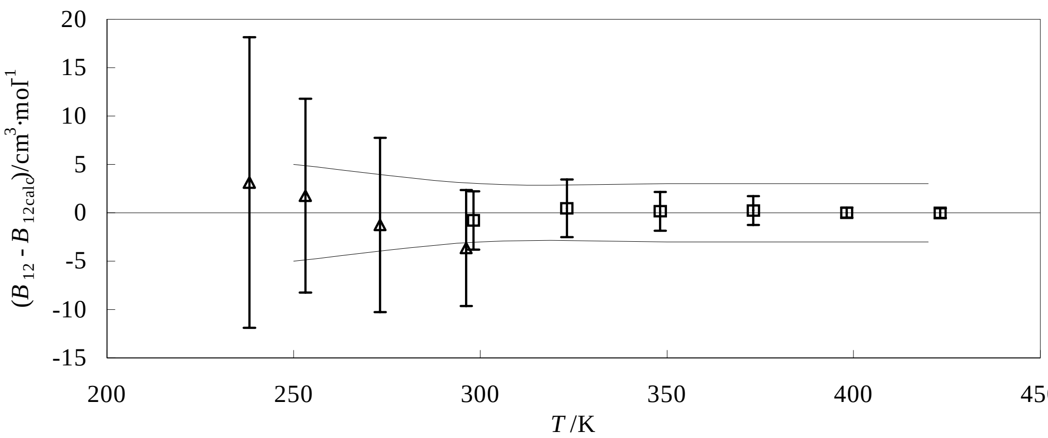

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 6. Experimental C_{112} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
298.15	12.6 ± 0.1	92-glo	373.15	3.1 ± 0.1	92-glo
323.15	7.1 ± 0.1	92-glo	398.15	2.2 ± 0.1	92-glo
348.15	4.5 ± 0.1	92-glo	423.15	1.4 ± 0.1	92-glo

Table 7. Experimental C_{122} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
298.15	-4.6 ± 0.1	92-glo	373.15	-0.8 ± 0.1	92-glo
323.15	-3.1 ± 0.1	92-glo	398.15	0.2 ± 0.1	92-glo
348.15	-1.9 ± 0.1	92-glo	423.15	0.1 ± 0.1	92-glo

Argon **[7440-37-1]** **Ar** **MW = 39.95** **9**
Helium **[7440-59-7]** **He** **MW = 4.00**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 1.4965 \cdot 10 + 6.8188 \cdot 10^3/(T/\text{K}) - 2.6724 \cdot 10^6/(T/\text{K})^2 + 3.2953 \cdot 10^8/(T/\text{K})^3 - 1.3616 \cdot 10^{10}/(T/\text{K})^4$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3·mol^{-1}
100	9.3 ± 3	300	18.5 ± 2	450	20.2 ± 1
200	14.9 ± 3	350	19.4 ± 1	500	20.3 ± 1
250	17.1 ± 3	400	19.9 ± 1	750	20.0 ± 1

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp} - B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp} - B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
90.00	6.6 ± 3.0	1.3	59-kno/bee (■)	300.00	18.4 ± 0.6	-0.1	82-mar/tre (O)
148.15	12.2 ± 3.0	-0.1	69-bre/vau (▲)	303.15	18.8 ± 0.1	0.2	67-kal/mil (□)
173.15	13.9 ± 3.0	0.4	69-bre/vau (▲)	320.00	18.7 ± 0.6	-0.2	82-mar/tre (O)
198.15	15.3 ± 3.0	0.5	69-bre/vau (▲)	323.15	18.4 ± 3.0	-0.6	69-bre/vau (▲)
223.15	15.9 ± 3.0	-0.1	69-bre/vau (▲)	323.15	18.4 ± 0.2	-0.6	70-bla/hal (●)
223.15	16.1 ± 0.2	0.1	70-bla/hal (●)	373.15	19.7 ± 0.1	0.0	67-kal/mil (□)
248.15	16.8 ± 3.0	-0.2	69-bre/vau (▲)	473.15	20.3 ± 0.2	0.0	67-kal/mil (□)
273.15	17.1 ± 3.0	-0.7	69-bre/vau (▲)	573.15	20.4 ± 0.2	0.0	67-kal/mil (□)
273.15	17.6 ± 0.2	-0.2	70-bla/hal (●)	673.15	20.4 ± 0.3	0.2	67-kal/mil (□)
290.00	17.7 ± 0.6	-0.6	82-mar/tre (O)	773.15	19.8 ± 0.3	-0.2	67-kal/mil (□)
298.15	18.1 ± 3.0	-0.4	69-bre/vau (▲)				

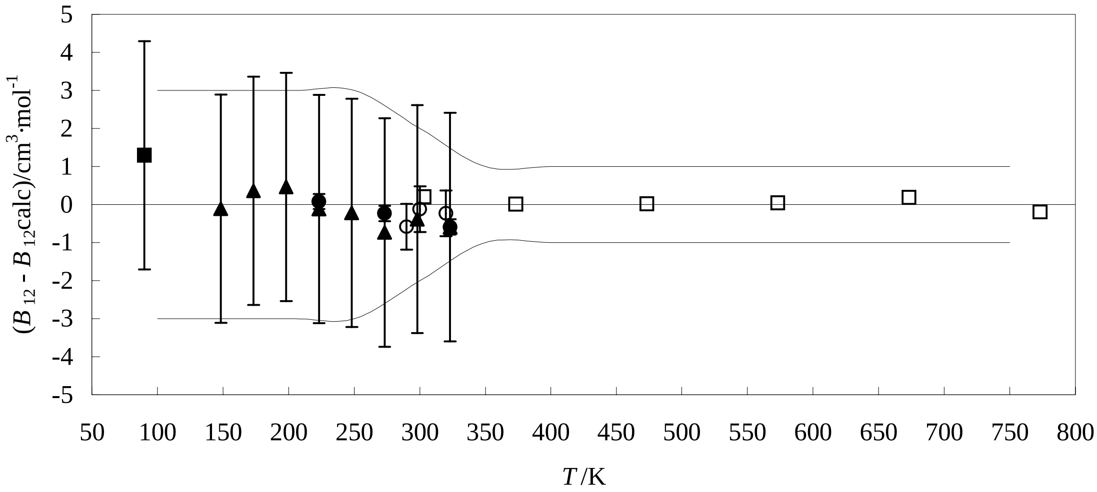

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Argon + Helium (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	20.40 ± 0.20	82-mar/tre	320.00	0.500	18.80 ± 0.20	82-mar/tre
300.00	0.500	20.40 ± 0.20	82-mar/tre				

Argon [7440-37-1] **Ar** **MW = 39.95** **10**
Mercury [7439-97-6] **Hg** **MW = 200.59**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
457.20	-47 ± 10	61-stu/row	529.20	-19 ± 10	61-stu/row
491.20	-45 ± 10	61-stu/row	578.20	-11 ± 10	61-stu/row

Argon [7440-37-1] **Ar** **MW = 39.95** **11**
Krypton [7439-90-9] **Kr** **MW = 83.80**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 3.8147 \cdot 10 - 1.5052 \cdot 10^4/(T/K) - 1.5687 \cdot 10^6/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
110	-228.3 ± 5	250	-47.2 ± 3	400	-9.3 ± 5
150	-131.9 ± 4	300	-29.5 ± 5	500	1.8 ± 5
200	-76.3 ± 3	350	-17.7 ± 5	700	13.4 ± 5

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
108.00	-236.2 ± 4.7	-0.5	62-fen/hal (×)	148.20	-131.3 ± 2.0	3.5	67-bre (□)
110.57	-224.9 ± 4.5	1.4	62-fen/hal (×)	149.47	-133.1 ± 1.5	-0.3	68-byr/jon (▲)
113.27	-216.1 ± 4.3	0.9	62-fen/hal (×)	163.29	-115.1 ± 1.5	-2.2	68-byr/jon (▲)
115.31	-208.0 ± 4.2	2.4	62-fen/hal (×)	173.20	-98.9 ± 2.0	2.2	67-bre (□)
116.53	-207.8 ± 2.0	-1.3	68-byr/jon (▲)	179.02	-98.4 ± 1.5	-3.5	68-byr/jon (▲)
117.08	-206.7 ± 4.1	-1.8	62-fen/hal (×)	196.09	-82.0 ± 1.5	-2.6	68-byr/jon (▲)
117.36	-204.3 ± 4.1	-0.3	62-fen/hal (×)	198.20	-75.9 ± 2.0	1.8	67-bre (□)
119.00	-198.4 ± 4.0	0.7	62-fen/hal (×)	202.00	-75.9 ± 6.0	-1.1	77-sch/sch (○)
119.38	-198.5 ± 2.0	-0.5	68-byr/jon (▲)	213.00	-67.6 ± 6.0	-0.5	77-sch/sch (○)
120.78	-193.7 ± 3.9	0.3	62-fen/hal (×)	219.51	-68.0 ± 1.5	-5.0	68-byr/jon (▲)
123.62	-186.4 ± 3.7	-0.1	62-fen/hal (×)	223.00	-60.0 ± 6.0	0.9	77-sch/sch (○)
124.43	-184.8 ± 1.5	-0.7	68-byr/jon (▲)	223.20	-59.6 ± 2.0	1.2	67-bre (□)
129.42	-172.4 ± 1.5	-0.6	68-byr/jon (▲)	233.00	-53.9 ± 6.0	1.4	77-sch/sch (○)
131.01	-168.7 ± 1.5	-0.6	68-byr/jon (▲)	243.00	-49.0 ± 6.0	1.4	77-sch/sch (○)
139.53	-151.0 ± 1.5	-0.7	68-byr/jon (▲)	253.00	-43.7 ± 6.0	2.2	77-sch/sch (○)

cont.

Argon + Krypton (cont.)

Table 2. (Cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
253.85	-47.9 ± 1.5	-2.4	68-byr/jon (▲)	400.00	-8.8 ± 6.0	0.5	77-sch/sch (○)
263.00	-40.0 ± 6.0	1.8	77-sch/sch (○)	410.00	-6.5 ± 6.0	1.4	77-ren/sch (●)
273.20	-37.2 ± 2.0	0.8	67-bre (□)	425.00	-5.8 ± 6.0	0.2	77-sch/sch (○)
278.00	-34.0 ± 6.0	2.3	77-sch/sch (○)	435.00	-4.8 ± 6.0	-0.1	77-sch/sch (○)
295.00	-29.0 ± 6.0	1.9	77-sch/sch (○)	465.00	-1.9 ± 6.0	-0.4	77-sch/sch (○)
323.20	-29.4 ± 2.0	-6.0	67-bre (□)	484.00	0.1 ± 6.0	-0.3	77-ren/sch (●)
330.00	-20.3 ± 6.0	1.6	77-sch/sch (○)	500.00	0.9 ± 6.0	-0.9	77-sch/sch (○)
345.00	-17.4 ± 6.0	1.3	77-ren/sch (●)	552.00	6.1 ± 6.0	0.4	77-ren/sch (●)
355.00	-15.5 ± 6.0	1.2	77-sch/sch (○)	623.00	9.1 ± 6.0	-0.8	77-ren/sch (●)
370.00	-13.1 ± 6.0	0.9	77-sch/sch (○)	695.00	11.5 ± 6.0	-1.7	77-ren/sch (●)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
148.20	0.500	15.03 ± 0.20	67-bre	223.20	0.500	6.58 ± 0.20	67-bre
173.20	0.500	10.45 ± 0.20	67-bre	273.20	0.500	4.96 ± 0.20	67-bre
198.20	0.500	8.25 ± 0.20	67-bre	323.20	0.500	3.59 ± 0.20	67-bre

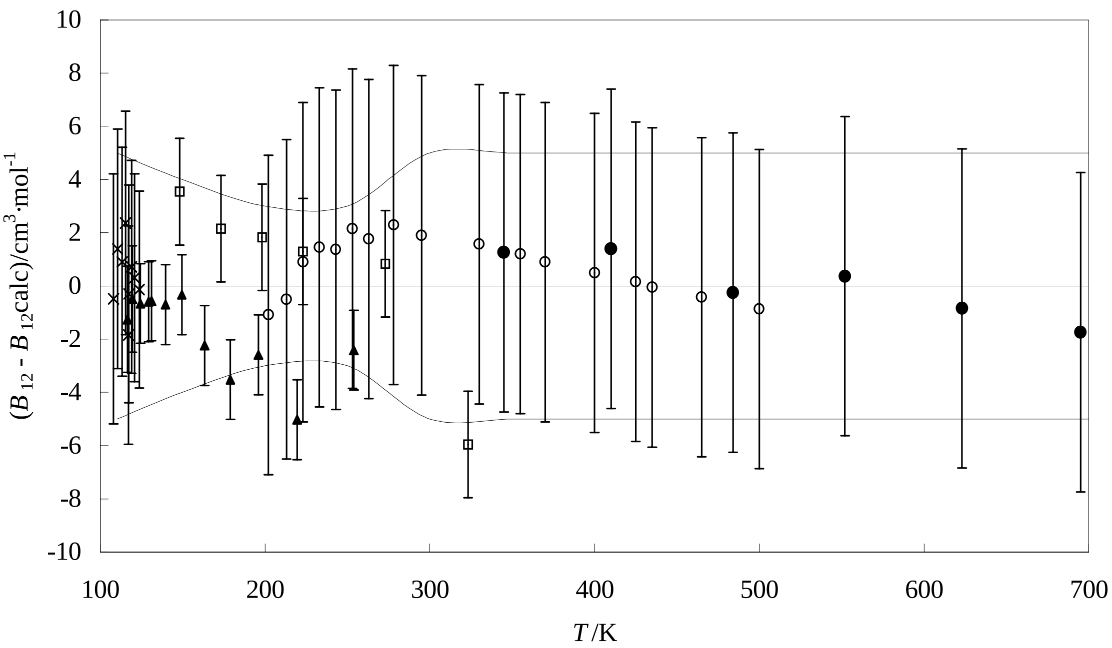

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon **[7440-37-1]** **Ar** **MW = 39.95** **12**
Nitrogen **[7727-37-9]** **N_2** **MW = 28.01**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 3.9467 \cdot 10 - 1.4212 \cdot 10^4/(T/\text{K}) - 1.8873 \cdot 10^5/(T/\text{K})^2 - 4.7010 \cdot 10^7/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
100	-168.5 ± 10	250	-23.4 ± 4	400	2.0 ± 2
150	-77.6 ± 7	300	-11.7 ± 3	500	9.9 ± 1
200	-42.2 ± 5	350	-3.8 ± 2	700	18.6 ± 1

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
75.00	-294.6 ± 1.0	0.4	92-ewi/tru (×)	260.00	-19.4 ± 1.5	1.3	67-zan/bee (▲)
80.00	-260.2 ± 1.0	-0.7	92-ewi/tru (×)	262.00	-20.3 ± 5.0	-0.2	80-sch/geh (O)
90.00	-195.0 ± 3.0	11.2	59-kno/bee (–)	270.00	-16.8 ± 1.4	1.3	67-zan/bee (▲)
90.00	-208.4 ± 1.0	-2.2	92-ewi/tru (×)	273.15	-16.9 ± 0.8	0.5	66-cra/son (☐)
100.00	-171.3 ± 0.9	-2.8	92-ewi/tru (×)	273.15	-16.4 ± 3.0	1.0	69-bre/vau (●)
110.00	-143.6 ± 0.8	-3.0	92-ewi/tru (×)	276.00	-16.3 ± 5.0	0.4	80-sch/geh (O)
125.00	-113.0 ± 0.7	-2.6	92-ewi/tru (×)	290.00	-12.0 ± 1.0	1.7	82-mar/tre (●)
143.15	-89.5 ± 5.0	-4.5	66-cra/son (☐)	290.00	-12.0 ± 1.5	1.7	86-dun/big (Δ)
148.15	-81.6 ± 3.0	-2.1	69-bre/vau (●)	295.00	-11.5 ± 5.0	1.2	80-sch/geh (O)
150.00	-79.3 ± 0.6	-1.7	92-ewi/tru (×)	296.15	-13.3 ± 5.0	-0.8	82-sch/mue (+)
163.15	-68.3 ± 3.0	-2.7	66-cra/son (☐)	298.15	-10.9 ± 3.0	1.2	69-bre/vau (●)
170.00	-60.5 ± 3.0	-0.3	67-zan/bee (▲)	300.00	-10.5 ± 0.9	1.2	82-mar/tre (●)
173.15	-59.1 ± 3.0	-1.1	69-bre/vau (●)	300.00	-10.6 ± 1.5	1.1	86-dun/big (Δ)
180.00	-53.5 ± 2.6	-0.1	67-zan/bee (▲)	300.00	-10.4 ± 0.3	1.3	92-ewi/tru (×)
190.00	-47.4 ± 2.4	0.0	67-zan/bee (▲)	320.00	-7.2 ± 0.9	1.0	82-mar/tre (●)
198.15	-44.0 ± 3.0	-0.9	69-bre/vau (●)	320.00	-7.5 ± 1.5	0.7	86-dun/big (Δ)
200.00	-42.0 ± 2.0	0.2	67-zan/bee (▲)	323.15	-6.2 ± 3.0	1.5	69-bre/vau (●)
200.00	-42.3 ± 0.5	-0.1	92-ewi/tru (×)	330.00	-4.7 ± 4.0	1.9	80-sch/geh (O)
203.15	-41.5 ± 2.0	-0.8	66-cra/son (☐)	353.15	-1.4 ± 1.0	2.0	96-vat/sch (■)
210.00	-37.2 ± 1.8	0.4	67-zan/bee (▲)	365.00	2.8 ± 4.0	4.7	80-sch/geh (O)
213.00	-40.0 ± 5.0	-3.7	80-sch/geh (O)	400.00	6.1 ± 4.0	4.1	80-sch/geh (O)
220.00	-32.8 ± 1.7	0.6	67-zan/bee (▲)	400.00	-3.6 ± 0.2	-5.6	92-ewi/tru (×)
223.00	-36.0 ± 5.0	-3.7	80-sch/geh (O)	413.15	5.7 ± 2.0	2.4	96-vat/sch (■)
223.15	-32.6 ± 3.0	-0.4	69-bre/vau (●)	425.00	7.8 ± 5.0	3.4	80-sch/geh (O)
230.00	-29.0 ± 1.5	0.8	67-zan/bee (▲)	450.00	9.0 ± 5.0	2.6	80-sch/geh (O)
240.00	-25.6 ± 1.5	0.8	67-zan/bee (▲)	463.15	9.1 ± 3.0	1.7	96-vat/sch (■)
242.00	-28.0 ± 5.0	-2.2	80-sch/geh (O)	475.00	9.4 ± 5.0	1.1	80-sch/geh (O)
248.15	-23.7 ± 3.0	0.2	69-bre/vau (●)	500.00	11.2 ± 0.2	1.3	92-ewi/tru (×)
250.00	-22.5 ± 1.5	0.9	67-zan/bee (▲)	600.00	15.9 ± 0.2	0.9	92-ewi/tru (×)
250.00	-22.6 ± 0.4	0.8	92-ewi/tru (×)	700.00	19.0 ± 0.2	0.4	92-ewi/tru (×)

cont.

Argon + Nitrogen (cont.)

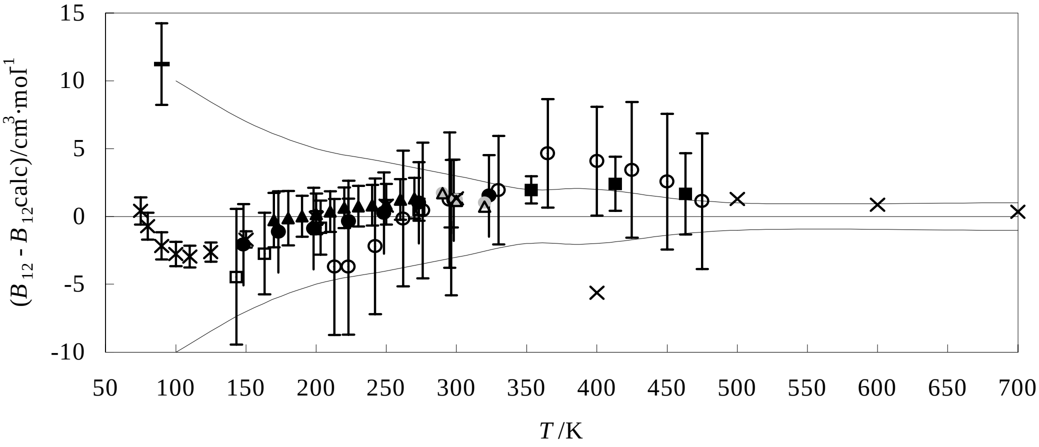

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	-0.7 ± 0.2	82-mar/tre	300.00	0.500	-0.7 ± 0.4	86-dun/big
290.00	0.500	-0.7 ± 0.4	86-dun/big	320.00	0.500	-0.6 ± 0.2	82-mar/tre
300.00	0.500	-0.6 ± 0.2	82-mar/tre	320.00	0.500	-0.9 ± 0.4	86-dun/big

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
143.15	2.9 ± 25.0	66-cra/son	203.15	1.7 ± 12.0	66-cra/son
163.15	2.3 ± 15.0	66-cra/son	273.15	1.4 ± 10.0	66-cra/son

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
143.15	2.9 ± 24.0	66-cra/son	203.15	1.8 ± 12.0	66-cra/son
163.15	2.3 ± 16.0	66-cra/son	273.15	1.4 ± 10.0	66-cra/son

Argon **[7440-37-1]** **Ar** **MW = 39.95** **13**
Neon **[7440-01-9]** **Ne** **MW = 20.18**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 2.9286 + 1.2477 \cdot 10^4/(T/K) - 4.1259 \cdot 10^6/(T/K)^2 + 3.7687 \cdot 10^8/(T/K)^3 - 1.2338 \cdot 10^{10}/(T/K)^4$

cont.

Argon + Neon (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
100	-31.4 ± 3	250	7.8 ± 3	400	13.7 ± 2
150	-10.0 ± 3	300	11.1 ± 3	450	14.1 ± 2
200	1.6 ± 3	350	12.9 ± 3	475	14.2 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
84.42	-45.2 ± 1.7	-0.5	82-sha/rig (●)	223.15	4.5 ± 3.0	-0.4	69-bre/vau (☐)
87.42	-41.7 ± 2.0	-0.3	82-sha/rig (●)	242.00	6.9 ± 5.0	-0.1	80-sch/geh (▲)
90.00	-35.3 ± 3.0	3.6	59-kno/bee (×)	248.15	6.9 ± 3.0	-0.7	69-bre/vau (☐)
92.84	-35.5 ± 1.5	1.0	82-sha/rig (●)	262.00	9.5 ± 5.0	0.7	80-sch/geh (▲)
95.82	-35.2 ± 1.2	-1.0	82-sha/rig (●)	273.15	8.9 ± 3.0	-0.7	69-bre/vau (☐)
101.94	-30.1 ± 1.1	0.1	82-sha/rig (●)	276.00	9.9 ± 5.0	0.1	80-sch/geh (▲)
110.78	-25.4 ± 1.2	0.0	82-sha/rig (●)	295.00	10.5 ± 5.0	-0.4	80-sch/geh (▲)
121.34	-20.3 ± 2.0	0.1	82-sha/rig (●)	298.15	10.9 ± 3.0	-0.1	69-bre/vau (☐)
129.93	-17.3 ± 2.5	-0.4	82-sha/rig (●)	323.15	12.2 ± 3.0	0.1	69-bre/vau (☐)
137.83	-16.1 ± 3.0	-2.1	82-sha/rig (●)	330.00	12.2 ± 5.0	-0.1	80-sch/geh (▲)
148.15	-8.4 ± 3.0	2.1	69-bre/vau (☐)	365.00	13.2 ± 5.0	0.0	80-sch/geh (▲)
173.15	-2.6 ± 3.0	1.2	69-bre/vau (☐)	400.00	13.7 ± 5.0	0.0	80-sch/geh (▲)
198.15	1.5 ± 3.0	0.2	69-bre/vau (☐)	425.00	14.1 ± 5.0	0.1	80-sch/geh (▲)
213.00	2.2 ± 4.0	-1.4	80-sch/geh (▲)	450.00	14.2 ± 5.0	0.1	80-sch/geh (▲)
223.00	4.4 ± 5.0	-0.5	80-sch/geh (▲)	475.00	13.6 ± 5.0	-0.6	80-sch/geh (▲)

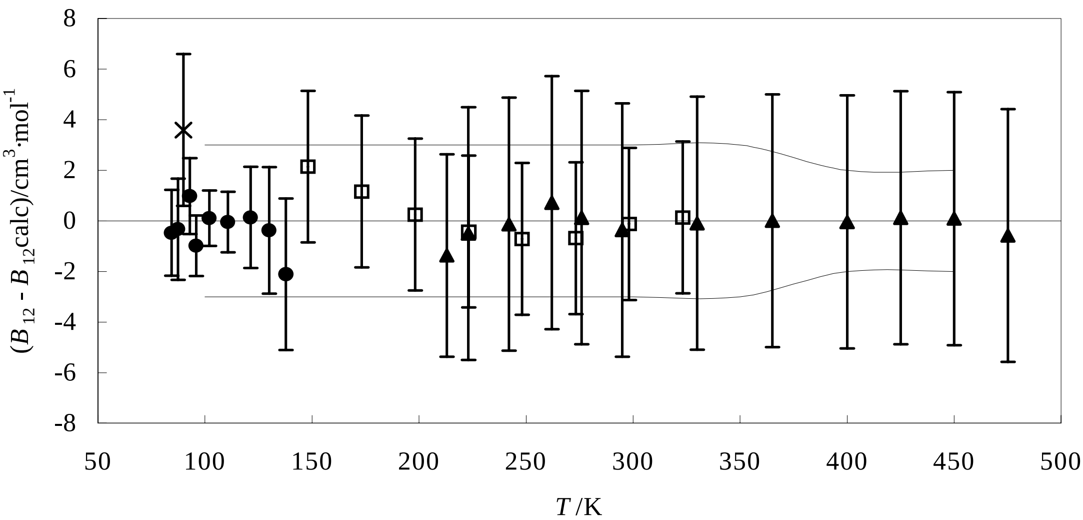

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon **[7440-37-1]** **Ar** **MW = 39.95** **14**
Oxygen **[7782-44-7]** **O_2** **MW = 32.00**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 4.8775 \cdot 10 - 2.3064 \cdot 10^4/(T/\text{K}) + 1.7036 \cdot 10^6/(T/\text{K})^2 - 1.6031 \cdot 10^8/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
100	-171.8 ± 3	250	-26.5 ± 2	400	-0.7 ± 2
200	-44.0 ± 2	350	-7.0 ± 2	450	4.2 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
90.00	-217.0 ± 3.0	0.1	59-kno/bee (×)	320.00	-11.5 ± 0.9	0.1	82-mar/tre (□)
290.00	-16.8 ± 1.0	0.3	82-mar/tre (□)	353.15	-6.4 ± 2.0	0.1	96-vat/sch (▲)
296.15	-16.4 ± 1.5	-0.5	96-vat/sch (▲)	413.15	0.9 ± 3.0	0.2	96-vat/sch (▲)
300.00	-15.2 ± 1.0	-0.1	82-mar/tre (□)	463.15	5.2 ± 3.0	-0.1	96-vat/sch (▲)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ cm$^3\cdot$ mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ cm$^3\cdot$ mol^{-1}	Ref.
290.00	0.500	0.30 ± 0.20	82-mar/tre	320.00	0.500	0.30 ± 0.20	82-mar/tre
300.00	0.500	0.40 ± 0.20	82-mar/tre				

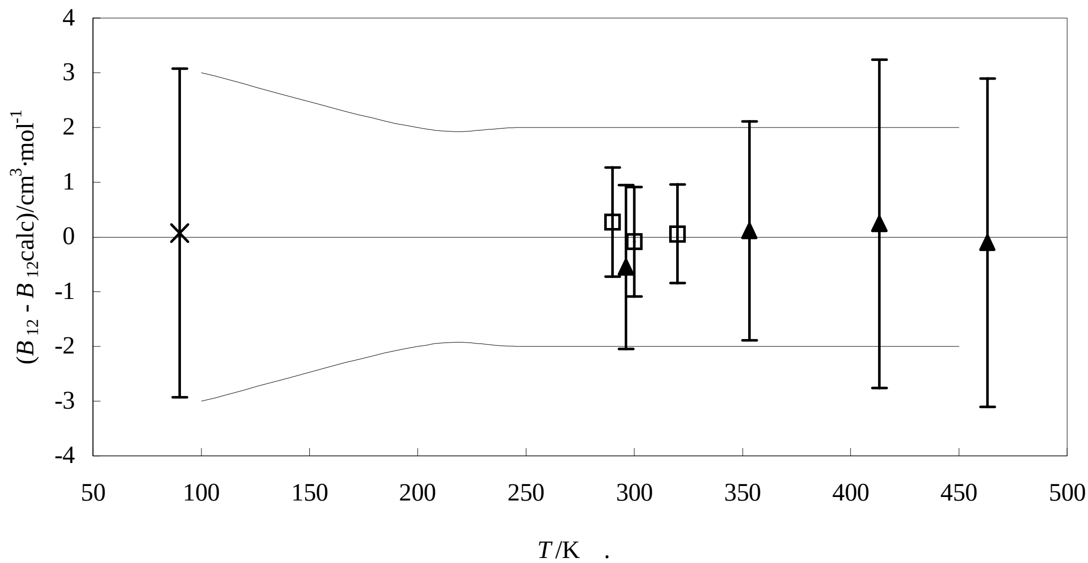

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon [7440-37-1] Ar MW = 39.95 15
Xenon [7440-63-3] Xe MW = 131.29

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	-141.2 ± 2.0	67-bre	273.20	-56.2 ± 2.0	67-bre
198.20	-108.0 ± 2.0	67-bre	323.20	-36.7 ± 2.0	67-bre
223.20	-86.5 ± 2.0	67-bre			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	0.500	75.5 ± 0.20	67-bre	273.20	0.500	31.6 ± 0.20	67-bre
198.20	0.500	58.5 ± 0.20	67-bre	323.20	0.500	24.5 ± 0.20	67-bre
223.20	0.500	45.6 ± 0.20	67-bre				

Argon [7440-37-1] Ar MW = 39.95 16
Tetrachloromethane [56-23-5] CCl_4 MW = 153.82

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	-155 ± 3	72-gup/kin	323.20	-100 ± 2	72-gup/kin
298.20	-124 ± 2	72-gup/kin	348.20	-77 ± 2	72-gup/kin
323.20	-115 ± 15	71-vig/sem-1	353.20	-67 ± 15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 17
Tetrafluoromethane [75-73-0] CF_4 MW = 88.00

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-37.2 ± 1.3	82-mar/tre	310.00	-29.1 ± 2.0	93-big/dun
290.00	-38.0 ± 2.0	93-big/dun	320.00	-26.0 ± 1.1	82-mar/tre
300.00	-32.6 ± 1.2	82-mar/tre	373.15	-14.0 ± 2.0	71-dan/kno
300.00	-32.9 ± 2.0	93-big/dun	373.15	-14.0 ± 2.0	71-sie/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	19.1 ± 1.3	82-mar/tre	310.00	0.500	19.2 ± 3.0	93-big/dun
290.00	0.500	20.0 ± 3.0	93-big/dun	320.00	0.500	16.1 ± 1.1	82-mar/tre
300.00	0.500	18.5 ± 1.2	82-mar/tre	373.15	0.500	10.0 ± 2.0	71-dan/kno
300.00	0.500	19.6 ± 3.0	93-big/dun	373.15	0.500	10.0 ± 1.0	71-sie/kno

Argon [7440-37-1] Ar MW = 39.95 **18**
Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
248.20	-44.5	±	6.0	67-bre	298.20	-64.2	±	4.0	67-bre
273.20	-69.7	±	5.0	67-bre					

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.
248.20	0.500	242.3	±	0.2	67-bre	298.20	0.500	123.1	±	0.2	67-bre
273.20	0.500	159.6	±	0.2	67-bre						

Argon [7440-37-1] Ar MW = 39.95 **19**
Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
323.20	-60.0	±	15	71-vig/sem-1	353.20	-59.0	±	15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 **20**
Trifluoromethane [75-46-7] CHF_3 MW = 70.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
290.00	-43.3	±	4	93-big/dun	310.00	-34.0	±	4	93-big/dun
300.00	-38.6	±	4	93-big/dun	323.20	-25.0	±	4	76-cop/col

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.
290.00	0.500	62.8	±	1.0	93-big/dun	310.00	0.500	59.1	±	1.0	93-big/dun
300.00	0.500	63.3	±	1.0	93-big/dun						

Argon [7440-37-1] Ar MW = 39.95 **21**
Difluoromethane [75-10-5] CH_2F_2 MW = 52.02

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
290.00	-40.4	±	6	93-big/dun	310.00	-32.8	±	5	93-big/dun
300.00	-37.4	±	6	93-big/dun					

cont.

Argon + Difluoromethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	126.5 ± 1.0	93-big/dun	310.00	0.500	106.6 ± 1.0	93-big/dun
300.00	0.500	116.6 ± 1.0	93-big/dun				

Argon [7440-37-1] Ar MW = 39.95 22
Bromomethane [74-83-9] CH_3Br MW = 94.94

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
287.80	-73.0 ± 2.0	69-lic/sch	303.20	-56.1 ± 2.0	69-lic/sch
296.00	-63.2 ± 2.0	69-lic/sch	323.10	-37.8 ± 2.0	69-lic/sch

Argon [7440-37-1] Ar MW = 39.95 23
Chloromethane [74-87-3] CH_3Cl MW = 50.49

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -7.6625 \cdot 10^2 + 9.4837 \cdot 10^5/(T/K) - 3.5161 \cdot 10^8/(T/K)^2 + 3.9333 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
250	-81.2 ± 20	350	-9.5 ± 20	450	36.5 ± 20
300	-55.0 ± 20	400	21.7 ± 20		

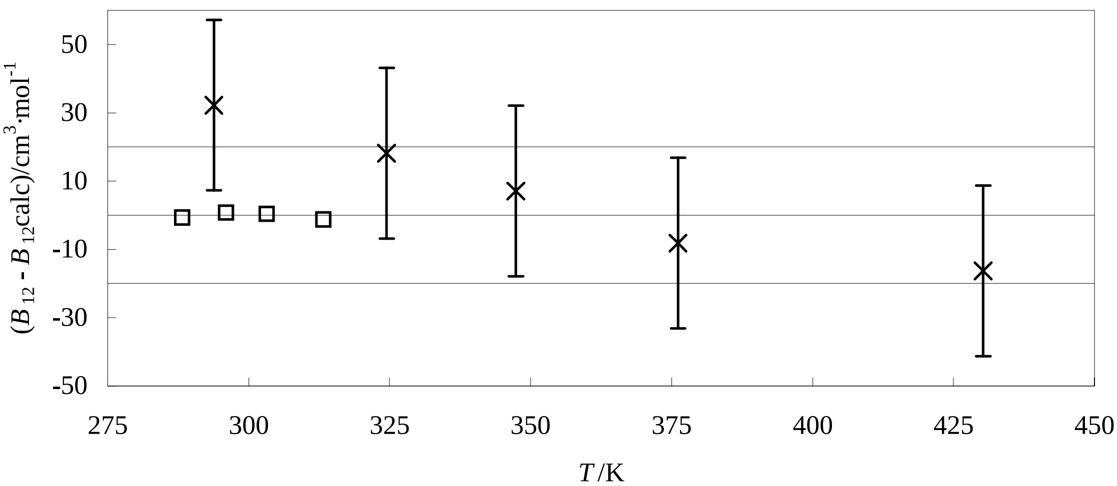

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Argon + Chloromethane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
288.20	-66.30 ± 2	-0.6	69-lic/sch (□)	324.45	-13.60 ± 25	18.2	67-bot/spu (×)
293.82	-28.50 ± 25	32.2	67-bot/spu (×)	347.36	-4.60 ± 25	7.0	67-bot/spu (×)
296.00	-57.90 ± 2	0.8	69-lic/sch (□)	376.11	0.80 ± 25	-8.2	67-bot/spu (×)
303.20	-51.60 ± 2	0.4	69-lic/sch (□)	430.25	16.10 ± 5	-16.3	67-bot/spu (×)
313.20	-43.60 ± 2	-1.2	69-lic/sch (□)				

Argon [7440-37-1] **Ar** **MW = 39.95** **24**
Fluoromethane [593-53-3] **CH_3F** **MW = 34.03**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-40.5 ± 4.0	93-big/dun	310.00	-29.0 ± 4.0	93-big/dun
300.00	-35.6 ± 4.0	93-big/dun	323.20	-28.0 ± 5.0	76-cop/col

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	78.6 ± 1.0	93-big/dun	310.00	0.500	68.4 ± 1.0	93-big/dun
300.00	0.500	73.1 ± 1.0	93-big/dun				

Argon [7440-37-1] **Ar** **MW = 39.95** **25**
Nitromethane [75-52-5] **CH_3NO_2** **MW = 61.04**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-72 ± 20	63-bot/spu	353.20	-62 ± 15	71-vig/sem-1
323.20	-91 ± 15	71-vig/sem-1			

Argon [7440-37-1] **Ar** **MW = 39.95** **26**
Methane [74-82-8] **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.2034 \cdot 10 + 3.5690 \cdot 10^4/(T/K) - 1.7184 \cdot 10^7/(T/K)^2 + 1.9559 \cdot 10^9/(T/K)^3 - 8.5469 \cdot 10^{10}/(T/K)^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
110	-222.0 ± 10	200	-72.1 ± 5	400	-3.0 ± 2
150	-127.1 ± 5	300	-22.1 ± 3	550	6.9 ± 2

cont.

Argon + Methane (cont.)

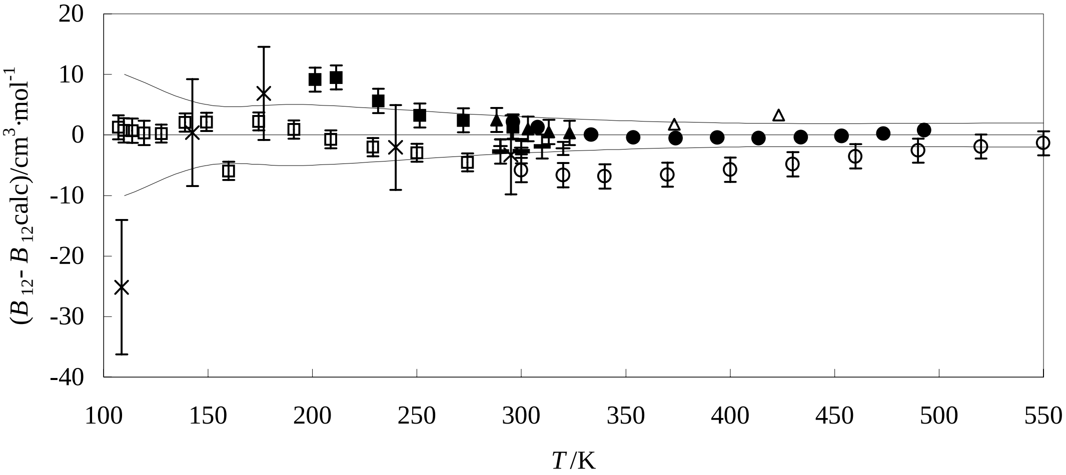

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3\cdot\text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3\cdot\text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3\cdot\text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3\cdot\text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)
107.10	-233.1 ± 2.0	1.3	68-byr/jon (☐)	290.00	-27.9 ± 1.0	-2.7	93-big/dun (–)
108.61	-252.9 ± 11.1	-25.1	62-tho/van-1 (×)	295.00	-26.9 ± 6.5	-3.3	62-tho/van-1 (×)
109.69	-222.5 ± 2.0	0.8	68-byr/jon (☐)	296.00	-21.9 ± 2.0	1.4	69-lic/sch (▲)
113.68	-207.5 ± 2.0	0.7	68-byr/jon (☐)	296.00	-22.0 ± 2.0	1.3	74-hah/sch (■)
119.48	-189.4 ± 2.0	0.3	68-byr/jon (☐)	296.15	-21.1 ± 1.0	2.2	71-str/lic (●)
127.63	-168.4 ± 1.5	0.2	68-byr/jon (☐)	300.00	-27.9 ± 2.0	-5.8	74-bel/rei (O)
138.99	-143.3 ± 1.5	2.1	68-byr/jon (☐)	300.00	-24.2 ± 1.1	-2.1	82-mar/tre (+)
142.60	-138.6 ± 8.8	0.4	62-tho/van-1 (×)	300.00	-24.8 ± 1.0	-2.7	93-big/dun (–)
149.27	-126.1 ± 1.5	2.1	68-byr/jon (☐)	303.20	-20.2 ± 2.0	1.0	69-lic/sch (▲)
159.88	-119.2 ± 1.5	-5.9	68-byr/jon (☐)	308.00	-18.6 ± 1.0	1.3	71-str/lic (●)
174.20	-94.0 ± 1.5	2.2	68-byr/jon (☐)	310.00	-21.2 ± 1.0	-1.9	93-big/dun (–)
176.70	-86.7 ± 7.7	6.9	62-tho/van-1 (×)	313.20	-18.0 ± 2.0	0.5	69-lic/sch (▲)
191.01	-78.8 ± 1.5	0.9	68-byr/jon (☐)	320.00	-23.4 ± 2.0	-6.6	74-bel/rei (O)
201.20	-62.0 ± 2.0	9.2	74-hah/sch (■)	320.00	-19.0 ± 1.1	-2.2	82-mar/tre (+)
208.79	-66.1 ± 1.5	-0.7	68-byr/jon (☐)	323.10	-15.7 ± 2.0	0.3	69-lic/sch (▲)
211.40	-54.0 ± 2.0	9.5	74-hah/sch (■)	333.50	-13.7 ± 1.0	0.0	71-str/lic (●)
228.96	-54.1 ± 1.5	-2.0	68-byr/jon (☐)	340.00	-19.2 ± 2.0	-6.9	74-bel/rei (O)
231.50	-45.0 ± 2.0	5.6	74-hah/sch (■)	353.80	-10.2 ± 1.0	-0.5	71-str/lic (●)
239.80	-48.1 ± 7.0	-2.1	62-tho/van-1 (×)	370.00	-13.6 ± 2.0	-6.6	74-bel/rei (O)
249.95	-43.9 ± 1.5	-3.0	68-byr/jon (☐)	373.15	-4.8 ± 0.4	1.8	84-bar/lin (Δ)
251.50	-37.0 ± 2.0	3.2	74-hah/sch (■)	374.00	-7.0 ± 1.0	-0.6	71-str/lic (●)
272.20	-29.0 ± 2.0	2.4	74-hah/sch (■)	393.90	-4.2 ± 1.0	-0.5	71-str/lic (●)
274.15	-35.2 ± 1.5	-4.5	68-byr/jon (☐)	400.00	-8.7 ± 2.0	-5.7	74-bel/rei (O)
288.20	-23.3 ± 2.0	2.5	69-lic/sch (▲)	413.80	-2.0 ± 1.0	-0.5	71-str/lic (●)
290.00	-27.0 ± 1.1	-1.8	82-mar/tre (+)	423.15	2.8 ± 0.7	3.3	84-bar/lin (Δ)

cont.

Argon + Methane (cont.)

Table 2. (cont.)

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
430.00	-4.7 ± 2.0	-4.8	74-bel/rei (O)	490.00	1.8 ± 2.0	-2.6	74-bel/rei (O)
434.00	0.1 ± 1.0	-0.4	71-str/lic (●)	493.00	5.3 ± 1.0	0.8	71-str/lic (●)
453.40	1.9 ± 1.0	-0.2	71-str/lic (●)	520.00	3.9 ± 2.0	-1.9	74-bel/rei (O)
460.00	-1.0 ± 2.0	-3.5	74-bel/rei (O)	550.00	5.5 ± 2.0	-1.4	74-bel/rei (O)
473.50	3.6 ± 1.0	0.2	71-str/lic (●)				

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
108.61	0.61	-239.6 ± 9.8	62-tho/van-1	373.15	0.56	-9.6 ± 0.2	84-bar/lin
142.60	0.61	-131.8 ± 7.6	62-tho/van-1	373.15	0.76	-13.7 ± 0.2	84-bar/lin
176.70	0.61	-84.8 ± 6.7	62-tho/van-1	373.15	0.82	-15.8 ± 0.2	84-bar/lin
239.80	0.61	-45.5 ± 5.9	62-tho/van-1	423.15	0.08	1.7 ± 0.2	84-bar/lin
295.00	0.61	-25.6 ± 5.5	62-tho/van-1	423.15	0.15	1.4 ± 0.2	84-bar/lin
373.15	0.08	-4.1 ± 0.2	84-bar/lin	423.15	0.28	0.3 ± 0.2	84-bar/lin
373.15	0.20	-4.7 ± 0.2	84-bar/lin	423.15	0.59	-1.6 ± 0.2	84-bar/lin
373.15	0.35	-6.6 ± 0.2	84-bar/lin	423.15	0.65	-3.8 ± 0.2	84-bar/lin
373.15	0.43	-7.7 ± 0.2	84-bar/lin	423.15	0.85	-7.5 ± 0.2	84-bar/lin

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
123.20	0.50	45.1 ± 0.2	67-bre	290.00	0.50	4.6 ± 2.0	93-big/dun
148.20	0.50	14.1 ± 0.2	67-bre	300.00	0.50	4.6 ± 0.2	82-mar/tre
173.20	0.50	11.1 ± 0.2	67-bre	300.00	0.50	5.0 ± 2.0	93-big/dun
223.20	0.50	6.7 ± 0.2	67-bre	310.00	0.50	5.2 ± 2.0	93-big/dun
273.20	0.50	4.8 ± 0.2	67-bre	320.00	0.50	4.3 ± 0.2	82-mar/tre
290.00	0.50	4.7 ± 0.2	82-mar/tre				

Argon [7440-37-1] Ar MW = 39.95 27
Methanol [67-56-1] CH_4O MW = 32.04

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.15	-102 ± 2	72-hem/kin	323.15	-72 ± 2	72-hem/kin
298.15	-87 ± 4	72-hem/kin	333.15	-71 ± 4	72-hem/kin
310.15	-77 ± 3	72-hem/kin			

Argon [7440-37-1] Ar MW = 39.95 28
Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-63.8 ± 6.0	92-bel/big	310.00	-51.7 ± 6.0	92-bel/big
300.00	-53.5 ± 6.0	93-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	84.4 ± 1.0	92-bel/big	310.00	0.500	73.9 ± 1	92-bel/big
300.00	0.500	81.9 ± 1.0	92-bel/big				

Argon [7440-37-1] Ar MW = 39.95 29
Pentafluoroethane [354-33-6] C_2HF_5 MW = 120.02

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-70.8 ± 4.0	93-big/dun-1	310.00	-55.3 ± 4.0	93-big/dun-1
300.00	-61.9 ± 4.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	135.8 ± 1.0	93-big/dun-1	310.00	0.500	119.5 ± 1.0	93-big/dun-1
300.00	0.500	127.5 ± 1.0	93-big/dun-1				

Argon [7440-37-1] Ar MW = 39.95 30
1,1,1,2-Tetrafluoroethane [811-97-2] $C_2H_2F_4$ MW = 102.03

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-73.6 ± 6.0	93-big/dun-1	310.00	-54.9 ± 6.0	93-big/dun-1
300.00	-61.6 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	203.7 ± 1.0	93-big/dun-1	310.00	0.500	173.6 ± 1.0	93-big/dun-1
300.00	0.500	188.8 ± 1.0	93-big/dun-1				

Argon [7440-37-1] Ar MW = 39.95 **31**
1,1,2,2-Tetrafluoroethane [359-35-3] $C_2H_2F_4$ MW = 102.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-68.2 ± 6.0	93-big/dun-1	310.00	-59.0 ± 6.0	93-big/dun-1
300.00	-59.9 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	196.4 ± 1.0	93-big/dun-1	310.00	0.500	162.0 ± 1.0	93-big/dun-1
300.00	0.500	182.2 ± 1.0	93-big/dun-1				

Argon [7440-37-1] Ar MW = 39.95 **32**
1,1,1-Trifluoroethane [420-46-2] $C_2H_3F_3$ MW = 84.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-66.1 ± 6.0	93-big/dun-1	310.00	-51.4 ± 6.0	93-big/dun-1
300.00	-58.6 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	161.7 ± 1.0	93-big/dun-1	310.00	0.500	139.2 ± 1.2	93-big/dun-1
300.00	0.500	149.6 ± 1.0	93-big/dun-1				

Argon [7440-37-1] Ar MW = 39.95 **33**
1,1,2-Trifluoroethane [430-66-0] $C_2H_3F_3$ MW = 84.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-67.7 ± 6.0	93-big/dun-1	310.00	-51.0 ± 6.0	93-big/dun-1
300.00	-57.6 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	273.3 ± 1.0	93-big/dun-1	310.00	0.500	224.8 ± 1.0	93-big/dun-1
300.00	0.500	250.1 ± 1.0	93-big/dun-1				

Argon [7440-37-1] **Ar** **MW = 39.95** **34**
Ethene [74-85-1] **C_2H_4** **MW = 28.05**

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.1239	-22.9 ± 2.40	71-bos/col	323.15	0.4269	-46.0 ± 2.60	71-bos/col
323.15	0.2018	-22.6 ± 1.40	71-bos/col	323.15	0.4473	-46.0 ± 3.20	71-bos/col
323.15	0.2155	-27.4 ± 4.60	71-bos/col				

Argon [7440-37-1] **Ar** **MW = 39.95** **35**
1,1-Difluoroethane [75-37-6] **$C_2H_4F_2$** **MW = 66.05**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-72.4 ± 6.0	92-bel/big	300.00	-57.2 ± 2.0	93-big/dun-1
290.00	-62.6 ± 2.0	93-big/dun-1	310.00	-55.3 ± 5.5	92-bel/big
300.00	-61.1 ± 5.5	92-bel/big	310.00	-52.7 ± 2.0	93-big/dun-1

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	216.3 ± 1.0	92-bel/big	300.00	0.500	199.9 ± 1.0	93-big/dun-1
290.00	0.500	218.1 ± 1.0	93-big/dun-1	310.00	0.500	180.8 ± 1.0	92-bel/big
300.00	0.500	199.6 ± 1.0	92-bel/big	310.00	0.500	179.7 ± 1.0	93-big/dun-1

Argon [7440-37-1] **Ar** **MW = 39.95** **36**
Fluoroethane [353-36-6] **C_2H_5F** **MW = 48.06**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-60.4 ± 4.0	93-big/dun-1	310.00	-53.9 ± 4.0	93-big/dun-1
300.00	-53.8 ± 4.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	149.3 ± 1.0	93-big/dun-1	310.00	0.500	123.5 ± 1.0	93-big/dun-1
300.00	0.500	139.4 ± 1.0	93-big/dun-1				

Argon [7440-37-1] **Ar** **MW = 39.95** **37**
Nitroethane [79-24-3] **$C_2H_5NO_2$** **MW = 75.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-125 ± 15	71-vig/sem-1	353.20	-97 ± 15	71-vig/sem-1

Argon **[7440-37-1]** **Ar** **MW = 39.95** **38**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3{\cdot}\text{mol}^{-1} = 9.2713 \cdot 10 - 5.6437 \cdot 10^4/(T/\text{K}) + 7.0318 \cdot 10^6/(T/\text{K})^2 - 9.3813 \cdot 10^8/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
200	-130.9 ± 4	300	-52.0 ± 4	400	-19.1 ± 3
250	-80.6 ± 4	350	-33.0 ± 3	525	4.2 ± 3

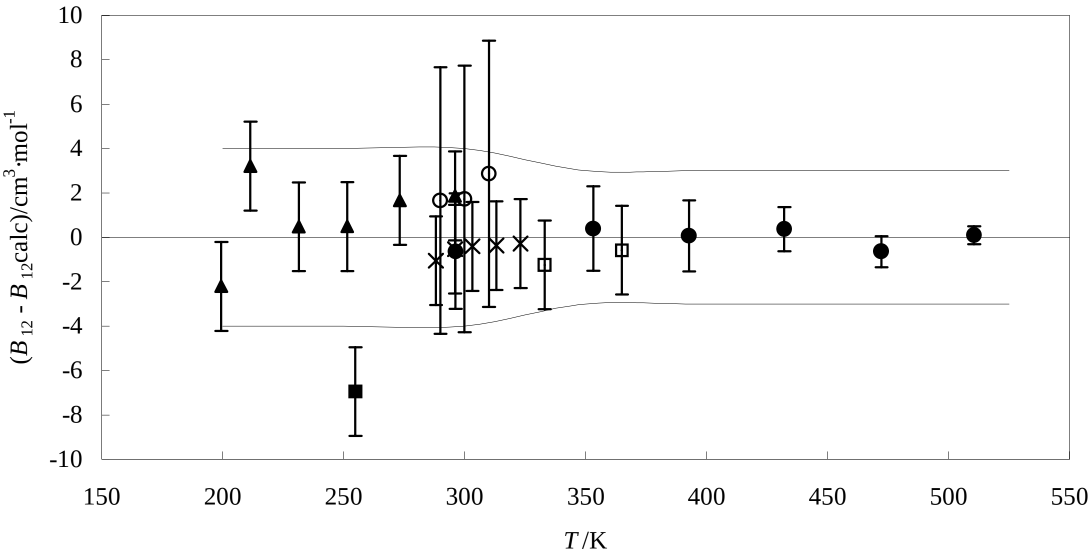

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
199.40	-134.0 ± 2.0	-2.2	74-hah/sch (▲)	303.20	-51.0 ± 2.0	-0.4	69-lic/sch (×)
211.40	-113.0 ± 2.0	3.2	74-hah/sch (▲)	310.00	-44.8 ± 6.0	2.9	92-bel/big (O)
231.50	-95.0 ± 2.0	0.5	74-hah/sch (▲)	313.20	-46.7 ± 2.0	-0.4	69-lic/sch (×)
245.84	-84.1 ± 2.0	-0.5	96-agu/num (■)	323.10	-42.7 ± 2.0	-0.3	69-lic/sch (×)
251.50	-79.0 ± 2.0	0.5	74-hah/sch (▲)	333.00	-40.0 ± 2.0	-1.2	69-sch (□)
273.20	-64.0 ± 2.0	1.7	74-hah/sch (▲)	353.20	-31.6 ± 1.9	0.4	74-sch/sch (●)
288.20	-58.7 ± 2.0	-1.1	69-lic/sch (×)	365.00	-29.0 ± 2.0	-0.6	69-sch (□)
290.00	-55.1 ± 6.0	1.7	92-bel/big (O)	392.80	-20.8 ± 1.6	0.1	74-sch/sch (●)
296.00	-54.4 ± 2.0	-0.5	69-lic/sch (×)	432.10	-11.5 ± 1.0	0.4	74-sch/sch (●)
296.00	-52.0 ± 2.0	1.9	74-hah/sch (▲)	472.30	-4.8 ± 0.7	-0.6	74-sch/sch (●)
296.20	-54.4 ± 2.6	-0.6	74-sch/sch (▲)	510.60	2.2 ± 0.4	0.1	74-sch/sch (●)
300.00	-50.3 ± 6.0	1.7	92-bel/big (O)				

cont.

Argon + Ethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
254.84	0.500	64.1 ± 2.0	96-agu/num	300.00	0.500	48.8 ± 1.0	92-bel/big
290.00	0.500	51.7 ± 1.0	92-bel/big	310.00	0.500	46.7 ± 1.0	92-bel/big

Argon **[7440-37-1]** **Ar** **MW = 39.95** **39**
Ethanol **[64-17-5]** **C_2H_6O** **MW = 46.07**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-73 ± 5	73-gup/les	348.15	-50 ± 3	73-gup/les
323.15	-63 ± 2	73-gup/les	353.20	-46 ± 15	71-vig/sem-1
323.20	-118 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **40**
Propanone **[67-64-1]** **C_3H_6O** **MW = 58.08**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-58 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **41**
Propane **[74-98-6]** **C_3H_8** **MW = 44.10**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.3285 \cdot 10^2 - 9.7467 \cdot 10^4/(T/K) + 1.5052 \cdot 10^7/(T/K)^2 - 1.8464 \cdot 10^8/(T/K)^3 - 3.4520 \cdot 10^{11}(T/K)^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
200	-217.0 ± 20	300	-74.3 ± 7	400	-33.1 ± 5
250	-116.4 ± 10	350	-50.1 ± 5	500	-8.9 ± 5

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
211.40	-183.0 ± 2.0	0.8	74-hah/sch (●)	273.20	-98.0 ± 2.0	-4.7	74-hah/sch (●)
231.50	-152.0 ± 2.0	-9.6	74-hah/sch (●)	288.20	-84.5 ± 2.0	-2.6	69-lic/sch (☐)
248.20	-98.8 ± 3.0	19.7	67-bre (×)	296.00	-79.0 ± 2.0	-2.3	69-lic/sch (☐)
251.50	-116.0 ± 2.0	-1.4	74-hah/sch (●)	296.00	-81.0 ± 2.0	-4.3	74-hah/sch (●)
273.20	-83.3 ± 3.0	10.0	67-bre (×)	296.20	-78.8 ± 3.4	-2.2	74-sch/sch (O)

cont.

Argon + Propane (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.20	-70.2 ± 3.0	5.2	67-bre (×)	365.00	-45.0 ± 2.0	-0.6	69-sch (▲)
303.20	-74.6 ± 2.0	-2.3	69-lic/sch (□)	392.90	-34.1 ± 2.0	1.1	74-sch/sch (O)
313.20	-68.7 ± 2.0	-1.9	69-lic/sch (□)	432.30	-24.4 ± 1.7	-0.2	74-sch/sch (O)
322.80	-62.9 ± 2.0	-1.0	69-lic/sch (□)	473.00	-15.5 ± 1.1	-0.9	74-sch/sch (O)
333.00	-60.0 ± 2.0	-2.8	69-sch (▲)	511.80	-6.6 ± 0.8	-0.1	74-sch/sch (O)
353.20	-48.9 ± 2.5	-0.1	74-sch/sch (O)				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	205.0 ± 0.2	67-bre	298.20	0.500	131.7 ± 0.2	67-bre
273.20	0.500	161.5 ± 0.2	67-bre				

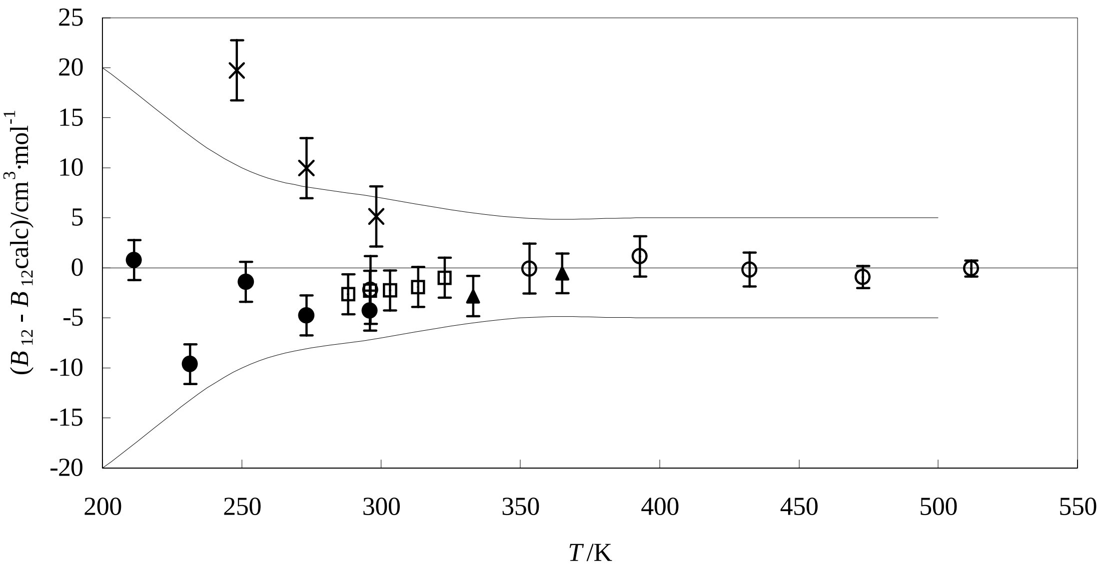

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon [7440-37-1] Ar MW = 39.95 **42**
2-Propanol [67-63-0] C_3H_8O MW = 60.10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-80 ± 15	71-vig/sem-1	353.20	-51 ± 15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 **43**
Octafluorocyclobutane [115-25-3] C_4F_8 MW = 200.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-117.7 ± 5.0	92-bel/big	310.00	-95.5 ± 5.0	92-bel/big
300.00	-105.4 ± 5.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	313.2 ± 1.0	92-bel/big	310.00	0.500	264.3 ± 1.0	92-bel/big
300.00	0.500	286.9 ± 1.0	92-bel/big				

Argon [7440-37-1] Ar MW = 39.95 **44**
Butanone [78-93-3] C_4H_8O MW = 72.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-86 ± 15	71-vig/sem-1	353.20	-65 ± 15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 **45**
1,4-Dioxane [123-91-1] $C_4H_8O_2$ MW = 88.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-124 ± 15	71-vig/sem-1	353.20	-86 ± 15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 **46**
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3{\cdot}mol^{-1} = -2.8373 \cdot 10^2 + 3.3643 \cdot 10^5/(T/K) - 1.3313 \cdot 10^8/(T/K)^2 + 1.4337 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
250	-150.5 ± 10	350	-74.9 ± 5	450	-36.2 ± 5
300	-110.5 ± 10	400	-50.7 ± 5	550	-26.0 ± 5

cont.

Argon + Butane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
288.20	-120.9 ± 2.0	-0.6	69-lic/sch (▲)	353.10	-73.0 ± 4.2	0.1	74-sch/sch (■)
296.00	-113.2 ± 2.0	0.6	69-lic/sch (▲)	393.30	-54.0 ± 3.6	-0.7	74-sch/sch (■)
296.20	-113.0 ± 5.4	0.6	74-sch/sch (■)	432.20	-40.0 ± 3.2	0.4	74-sch/sch (■)
303.20	-107.7 ± 2.0	0.2	69-lic/sch (▲)	472.50	-32.0 ± 3.0	0.1	74-sch/sch (■)
313.20	-100.3 ± 2.0	-0.2	69-lic/sch (▲)	511.10	-28.0 ± 2.8	-0.3	74-sch/sch (■)
323.10	-93.0 ± 2.0	-0.3	69-lic/sch (▲)				

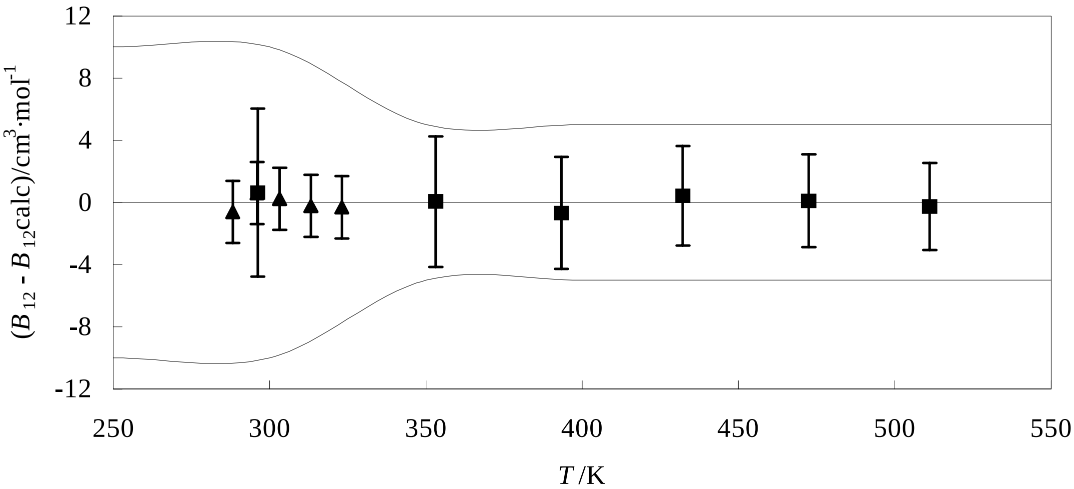

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon **[7440-37-1]** **Ar** **MW = 39.95** **47**
1-Butanol **[71-36-3]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-90 ± 11	73-mas/kin			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **48**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-89 ± 6	73-mas/kin			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **49**
Tetramethylsilane **[75-76-3]** **$C_4H_{12}Si$** **MW = 88.22**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 7.0189 \cdot 10 - 7.8617 \cdot 10^4/(T/\text{K}) + 1.1857 \cdot 10^7/(T/\text{K})^2 - 2.3154 \cdot 10^9/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
300	-145.9 ± 10	400	-88.4 ± 8	500	-58.1 ± 6
350	-111.6 ± 8	450	-71.4 ± 6	550	-47.5 ± 6

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
300.00	-147.2 ± 2.0	-1.3	74-bel/rei (▲)	430.00	-77.1 ± 2.0	0.5	74-bel/rei (▲)
320.00	-127.0 ± 2.0	3.4	74-bel/rei (▲)	460.00	-67.3 ± 2.0	1.2	74-bel/rei (▲)
340.00	-119.0 ± 2.0	-1.6	74-bel/rei (▲)	490.00	-60.3 ± 2.0	0.3	74-bel/rei (▲)
370.00	-102.0 ± 2.0	-0.6	74-bel/rei (▲)	520.00	-54.2 ± 2.0	-0.6	74-bel/rei (▲)
400.00	-89.5 ± 2.0	-1.1	74-bel/rei (▲)	550.00	-47.6 ± 2.0	-0.1	74-bel/rei (▲)

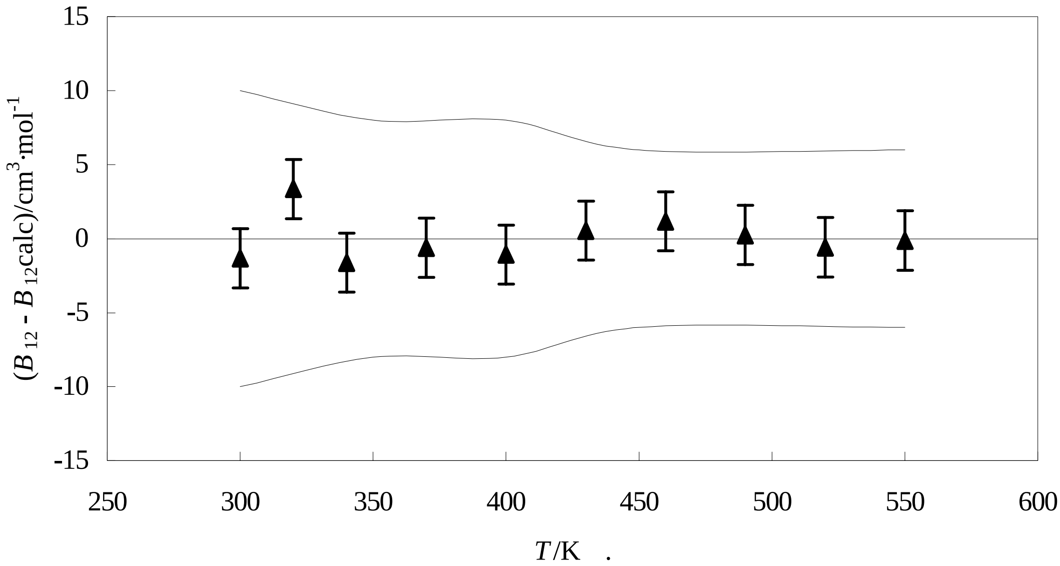

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Argon **[7440-37-1]** **Ar** **MW = 39.95** **50**
Pyridine **[110-86-1]** **C_5H_5N** **MW = 79.10**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-115 ± 15	71-vig/sem-1	353.20	-95 ± 15	71-vig/sem-1

Argon **[7440-37-1]** **Ar** **MW = 39.95** **51**
Cyclopentane **[287-92-3]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-108 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **52**
1-Pentene **[109-67-1]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-84 ± 12	68-cru/gai			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **53**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
289.15	-97 ± 8	73-mas/kin	298.20	-98 ± 6	66-cru/win
298.15	-125 ± 23	68-dan/kno	323.20	-82 ± 15	71-vig/sem-1
298.15	-136 ± 18	68-dan/kno	353.20	-68 ± 15	71-vig/sem-1

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	469 ± 4	68-dan/kno				

Argon **[7440-37-1]** **Ar** **MW = 39.95** **54**
2-Methylbutane **[78-78-4]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-94 ± 6	66-cru/win	308.15	-78 ± 12	68-cru/gai
298.15	-178 ± 14	68-dan/kno			

cont.

Argon + 2-Methylbutane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	408 ± 4	68-dan/kno				

Argon [7440-37-1] Ar MW = 39.95 55
2,2-Dimethylpropane [463-82-1] C_5H_{12} MW = 72.15

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 9.6764 \cdot 10 - 5.1023 \cdot 10^4/(T/K) - 3.8480 \cdot 10^6/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
200	-254.6 ± 30	300	-116.1 ± 10	400	-54.8 ± 6
250	-168.9 ± 20	350	-80.4 ± 8	550	-8.7 ± 5

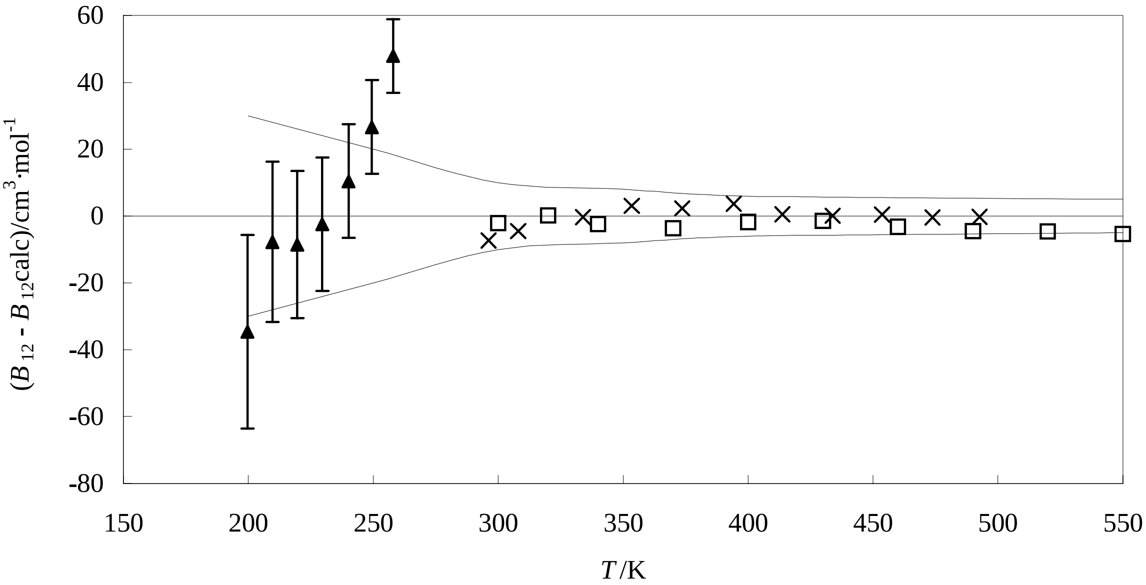

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
199.62	-290.0 ± 29.0	-34.6	75-bau/wes (▲)	240.15	-172.0 ± 17.0	10.4	75-bau/wes (▲)
209.59	-242.0 ± 24.0	-7.7	75-bau/wes (▲)	249.45	-143.0 ± 14.0	26.6	75-bau/wes (▲)
219.56	-224.0 ± 22.0	-8.6	75-bau/wes (▲)	257.91	-111.0 ± 11.0	47.9	75-bau/wes (▲)
229.53	-201.0 ± 20.0	-2.4	75-bau/wes (▲)	296.15	-126.7 ± 1.3	-7.3	71-str/lic (×)

cont.

Argon + 2,2-Dimethylpropane (cont.)

Table 2. (cont.)

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
300.00	-118.2 ± 2.0	-2.1	74-bel/rei (□)	413.80	-48.5 ± 1.0	0.5	71-str/lic (×)
308.00	-114.0 ± 1.1	-4.5	71-str/lic (×)	430.00	-44.1 ± 2.0	-1.4	74-bel/rei (□)
320.00	-100.1 ± 2.0	0.2	74-bel/rei (□`)	433.80	-41.2 ± 1.0	0.1	71-str/lic (×)
334.00	-90.8 ± 1.0	-0.3	71-str/lic (×)	453.60	-34.0 ± 1.0	0.4	71-str/lic (×)
340.00	-89.0 ± 2.0	-2.4	74-bel/rei (□)	460.00	-35.6 ± 2.0	-3.3	74-bel/rei (□)
353.50	-75.3 ± 1.0	3.1	71-str/lic (×)	473.80	-28.5 ± 1.0	-0.4	71-str/lic (×)
370.00	-72.9 ± 2.0	-3.7	74-bel/rei (□)	490.00	-27.9 ± 2.0	-4.5	74-bel/rei (□)
373.60	-65.1 ± 1.0	2.3	71-str/lic (×)	492.60	-22.9 ± 1.0	-0.2	71-str/lic (×)
394.30	-53.7 ± 1.0	3.7	71-str/lic (×)	520.00	-20.2 ± 2.0	-4.6	74-bel/rei (□)
400.00	-56.6 ± 2.0	-1.8	74-bel/rei (□)	550.00	-14.1 ± 2.0	-5.4	74-bel/rei (□)

Argon **[7440-37-1]** **Ar** **MW = 39.95** **56**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-88 ± 6	66-cru/win	323.15	-85 ± 8	68-eve/gai
298.20	-100 ± 7	67-bra/kin	323.15	-79 ± 8	68-eve/gai
298.20	-112 ± 15	71-vig/sem-1	323.15	-90 ± 10	68-gai/you-1
305.15	-135 ± 13	68-gai/you-1	323.20	-95 ± 3	69-coa/kin
305.20	-122 ± 3	69-coa/kin	323.20	-117 ± 15	71-vig/sem-1
313.15	-126 ± 12	68-gai/you-1	353.20	-105 ± 15	71-vig/sem-1

Argon **[7440-37-1]** **Ar** **MW = 39.95** **57**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-130 ± 15	71-vig/sem-1	353.20	-86 ± 15	71-vig/sem-1
323.20	-102 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **58**
Methylcyclopentane **[96-37-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-127 ± 15	71-vig/sem-1			

Argon [7440-37-1] **Ar** **MW = 39.95** **59**
1-Hexene [592-41-6] **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-110 ± 12	68-cru/gai			

Argon [7440-37-1] **Ar** **MW = 39.95** **60**
Butyl ethanoate [123-86-4] **$C_6H_{12}O_2$** **MW = 116.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-138 ± 15	71-vig/sem-1	353.20	-119 ± 15	71-vig/sem-1

Argon [7440-37-1] **Ar** **MW = 39.95** **61**
Hexane [110-54-3] **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.20	-130 ± 6	66-cru/win	323.15	-120 ± 9	68-dan/kno
298.15	-149 ± 65	68-dan/kno	323.15	-148 ± 27	68-dan/kno
298.15	-80 ± 73	68-dan/kno	323.20	-107 ± 6	66-cru/win
298.15	-180 ± 50	68-dan/kno	323.20	-106 ± 15	71-vig/sem-1
298.20	-127 ± 6	66-cru/win	338.60	-100 ± 6	66-cru/win
310.60	-104 ± 6	66-cru/win	353.20	-81 ± 15	71-vig/sem-1
323.15	-108 ± 32	68-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	807 ± 43	68-dan/kno	323.15	0.500	614 ± 7	68-dan/kno

Argon [7440-37-1] **Ar** **MW = 39.95** **62**
2-Methylpentane [107-83-5] **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-147 ± 49	68-dan/kno	298.20	-115 ± 15	71-vig/sem-1
298.20	-125 ± 6	66-cru/win			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	701 ± 39	68-dan/kno				

Argon **[7440-37-1]** **Ar** **MW = 39.95** **63**
3-Methylpentane **[96-14-0]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-116 ± 15	71-vig/sem-1	308.15	-95 ± 12	68-cru/gai

Argon **[7440-37-1]** **Ar** **MW = 39.95** **64**
2,2-Dimethylbutane **[75-83-2]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-156 ± 26	68-dan/kno	298.20	-108 ± 15	71-vig/sem-1
298.20	-115 ± 6	66-cru/win			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	577 ± 16	68-dan/kno				

Argon **[7440-37-1]** **Ar** **MW = 39.95** **65**
2,3-Dimethylbutane **[79-29-8]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-112 ± 15	71-vig/sem-1	308.15	-98 ± 12	68-cru/gai

Argon **[7440-37-1]** **Ar** **MW = 39.95** **66**
Toluene **[108-88-3]** **C_7H_8** **MW = 92.14**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-135 ± 15	71-vig/sem-1	353.20	-120 ± 15	71-vig/sem-1
353.20	-123 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **67**
1,1-Dimethylcyclopentane **[1638-26-2]** **C_7H_{14}** **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-134 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **68**
***trans*-1,2-Dimethylcyclopentane** **[822-50-4]** **C_7H_{14}** **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.
298.20	-136 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **69**
***trans*-1,3-Dimethylcyclopentane** **[1759-58-6]** **C_7H_{14}** **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.
298.20	-136 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **70**
***cis*-1,3-Dimethylcyclopentane** **[2532-58-3]** **C_7H_{14}** **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.
298.20	-136 ± 15	71-vig/sem-1			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **71**
1-Heptene **[592-76-7]** **C_7H_{14}** **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.
308.15	-139 ± 12	68-cru/gai			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **72**
Heptane **[142-82-5]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.
323.20	-136 ± 15	71-vig/sem-1	353.20	-97 ± 15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 73
2-Methylhexane [591-76-4] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-137 ± 15	71-vig/sem-1			

Argon [7440-37-1] Ar MW = 39.95 74
3-Methylhexane [589-34-4] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-138 ± 15	71-vig/sem-1			

Argon [7440-37-1] Ar MW 39.95 75
2,2-Dimethylpentane [590-35-2] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-128 ± 15	71-vig/sem-1			

Argon [7440-37-1] Ar MW = 39.95 76
2,3-Dimethylpentane [565-59-3] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-135 ± 15	71-vig/sem-1			

Argon [7440-37-1] Ar MW = 39.95 77
2,4-Dimethylpentane [108-08-7] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-130 ± 15	71-vig/sem-1			

Argon [7440-37-1] Ar MW = 39.95 78
3,3-Dimethylpentane [562-49-2] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-132 ± 15	71-vig/sem-1			

Argon [7440-37-1] Ar MW 39.95 79
2,2,3-Trimethylbutane [464-06-2] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-127 ± 15	71-vig/sem-1			

Argon [7440-37-1] Ar MW = 39.95 80
Styrene [100-42-5] C_8H_8 MW = 104.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-169 ± 15	71-vig/sem-1	353.2	-148 ± 15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 81
Ethylbenzene [100-41-4] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-138 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 82
1,2-Dimethylbenzene [95-47-6] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-146 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 83
1,3-Dimethylbenzene [108-38-3] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-141 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 84
1,4-Dimethylbenzene [106-42-3] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-143 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 85
1-Octene [111-66-0] C_8H_{16} MW = 112.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-136 ± 12	68-cru/gai			

Argon [7440-37-1] Ar MW = 39.95 86
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-160 ± 15	71-vig/sem-1	353.20	-122 ± 15	71-vig/sem-1

Argon [7440-37-1] Ar MW = 39.95 87
2,2,4-Trimethylpentane [540-84-1] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-128 ± 15	71-vig/sem-1	353.20	-87 ± 15	71-vig/sem-1

Argon **[7440-37-1]** **Ar** **MW = 39.95** **88**
Propylbenzene **[103-65-1]** **C_9H_{12}** **MW = 120.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-152 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **89**
1-Methylethylbenzene **[98-82-8]** **C_9H_{12}** **MW = 120.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-148 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **90**
1-Ethyl-2-methylbenzene **[611-14-3]** **C_9H_{12}** **MW = 120.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-158 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **91**
1-Ethyl-3-methylbenzene **[620-14-4]** **C_9H_{12}** **MW = 120.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-154 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **92**
1,2,3-Trimethylbenzene **[526-73-8]** **C_9H_{12}** **MW = 120.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-165 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **93**
1,2,4-Trimethylbenzene **[95-63-6]** **C_9H_{12}** **MW = 120.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-156 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **94**
1,3,5-Trimethylbenzene **[108-67-8]** **C_9H_{12}** **MW = 120.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-160 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **95**
Nonane **[111-84-2]** **C_9H_{20}** **MW = 128.26**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-181 ± 15	71-vig/sem-1	353.20	-146 ± 15	71-vig/sem-1

Argon **[7440-37-1]** **Ar** **MW = 39.95** **96**
Naphthalene **[91-20-3]** **$C_{10}H_8$** **MW = 128.17**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
297.20	-176 ± 7	67-bra/kin	347.20	-104 ± 6	62-kin/rob
298.20	-178 ± 10	62-kin/rob			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **97**
(2-Methylpropyl)benzene **[538-93-2]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-159 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **98**
(1-Methylpropyl)benzene **[135-98-8]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-160 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **99**
1-Methyl-2-propylbenzene **[1074-17-5]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-171 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **100**
1-Methyl-3-propylbenzene **[1074-43-7]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-167 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **101**
1-Methyl-4-propylbenzene **[1074-55-1]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-169 ± 15	71-vig/sem			

Argon **[7440-37-1]** **Ar** **MW = 39.95** **102**
1-Methyl-2-(1-methylethyl)benzene **[527-84-4]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-168 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 **103**
1,4-Diethylbenzene [105-05-5] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-168 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 **104**
1-Ethyl-2,3-dimethylbenzene [933-98-2] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-168 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 **105**
1-Ethyl-2,4-dimethylbenzene [874-41-9] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-174 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 **106**
1-Ethyl-2,5-dimethylbenzene [1758-88-9] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-174 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 **107**
1-Ethyl-2,6-dimethylbenzene [2870-04-4] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-167 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 108
1-Ethyl-3,4-dimethylbenzene [934-80-5] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-177 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 109
1-Ethyl-3,5-dimethylbenzene [934-74-7] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-173 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 110
1,2,3,4-Tetramethylbenzene [488-23-3] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-178 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 111
1,2,3,5-Tetramethylbenzene [527-53-7] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-183 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 112
1,2,4,5-Tetramethylbenzene [95-93-2] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-183 ± 15	71-vig/sem			

Argon [7440-37-1] Ar MW = 39.95 **113**
Anthracene [120-12-7] $C_{14}H_{10}$ MW = 178.23

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.20	-183 ± 8	67-bra/kin			

Boron trifluoride [7637-07-2] BF_3 MW = 67.81 **114**
Nitrogen [7727-37-9] N_2 MW = 28.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	-27.0 ± 20.0	58-bro/raw			

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	0.250	-28 ± 5	58-bro/raw	303.20	0.580	-45 ± 5	58-bro/raw
303.20	0.500	-39 ± 5	58-bro/raw				

Carbon monoxide [630-08-0] CO MW = 28.01 **115**
Carbon dioxide [124-38-9] CO_2 MW = 44.01

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -2.4271 + 2.7037 \cdot 10^4/(T/K) - 1.7561 \cdot 10^7/(T/K)^2 + 1.6094 \cdot 10^9/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
200	-105 ± 10	300	-48 ± 5	400	-19 ± 5
250	-72 ± 7	350	-31 ± 5	450	-11 ± 5

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
223.20	-89.0 ± 1.0	0.1	67-bre (■)	323.15	-39.5 ± 3.0	-0.3	95-mce/mos (×)
273.20	-58.4 ± 1.0	1.4	67-bre (■)	333.15	-36.6 ± 4.0	-0.6	56-cot/ham (♦)
303.15	-34.6 ± 4.6	12.0	56-cot/ham (♦)	333.15	-36.4 ± 3.0	-0.4	95-mce/mos (×)
303.15	-46.9 ± 3.0	-0.3	95-mce/mos (×)	333.15	-36.4 ± 3.0	-0.4	95-mce/mos (×)
303.16	-47.0 ± 3.0	-0.4	95-mce/mos (×)	343.15	-33.9 ± 3.0	-1.0	95-mce/mos (×)
313.14	-42.3 ± 3.0	0.5	95-mce/mos (×)	343.15	-33.7 ± 3.0	-0.8	95-mce/mos (×)
313.14	-42.6 ± 3.0	0.2	95-mce/mos (×)	363.15	-25.7 ± 6.0	1.8	56-cot/ham (♦)
323.14	-38.9 ± 3.0	0.3	95-mce/mos (×)	373.15	-24.8 ± 0.3	0.3	87-mal/nat (Δ)
323.15	-39.4 ± 0.5	-0.2	87-mal/nat (Δ)	423.15	-15.4 ± 0.2	0.0	87-mal/nat (Δ)

cont.

Carbon monoxide + Carbon dioxide (cont.)

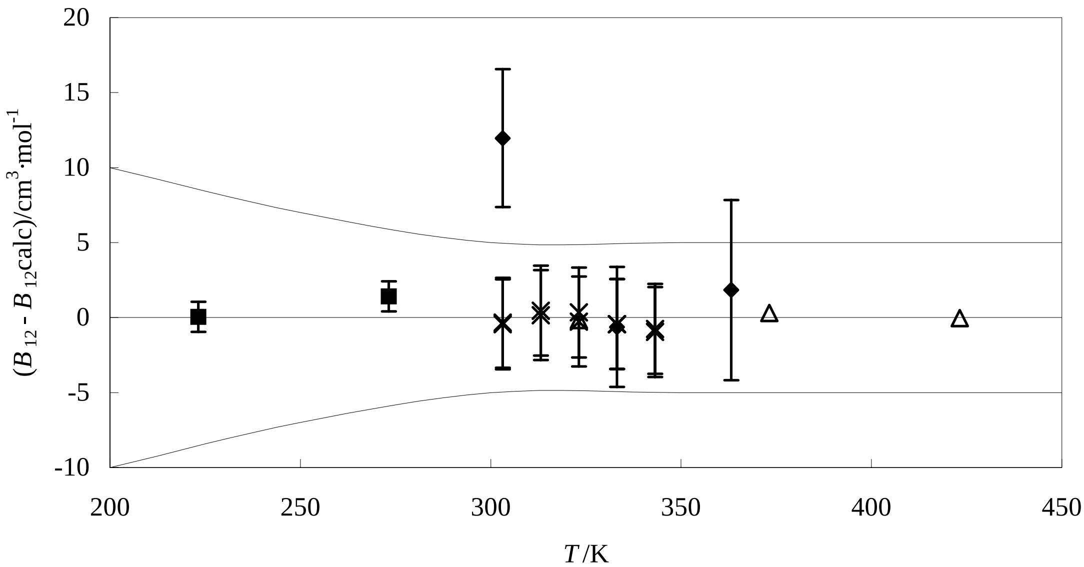

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	$B_m \pm \delta B_m$ / cm^3· mol^{-1}	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / cm^3· mol^{-1}	Ref.
323.15	0.000	-3.4 ± 0.1	89-mal/nat	373.15	0.798	-53.7 ± 0.1	89-mal/nat
323.15	0.299	-28.4 ± 0.1	89-mal/nat	373.15	1.000	-73.0 ± 0.1	89-mal/nat
323.15	0.430	-54.0 ± 0.5	87-mal/nat	398.15	0.299	-8.3 ± 0.6	89-mal/nat
323.15	0.798	-80.0 ± 0.0	89-mal/nat	398.15	0.798	-44.2 ± 0.3	89-mal/nat
323.15	1.000	-103.9 ± 0.1	89-mal/nat	423.15	0.000	9.9 ± 0.4	89-mal/nat
348.15	0.299	-20.8 ± 0.4	89-mal/nat	423.15	0.299	-5.3 ± 0.1	89-mal/nat
348.15	0.798	-65.6 ± 0.4	89-mal/nat	423.15	0.430	-22.8 ± 0.2	87-mal/nat
373.15	0.000	-4.9 ± 0.3	89-mal/nat	423.15	0.798	-36.5 ± 0.5	89-mal/nat
373.15	0.299	-14.8 ± 0.5	89-mal/nat	423.15	1.000	-52.0 ± 0.5	89-mal/nat
373.15	0.430	-35.3 ± 0.3	87-mal/nat				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / cm^3· mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / cm^3· mol^{-1}	Ref.
223.20	0.500	42.8 ± 0.2	67-bre	323.14	0.500	13.8 ± 0.5	95-mce/mos
273.20	0.500	23.7 ± 0.2	67-bre	323.15	0.500	13.7 ± 0.5	95-mce/mos
303.15	0.500	16.4 ± 0.5	95-mce/mos	333.15	0.500	12.7 ± 0.5	95-mce/mos
303.16	0.500	16.2 ± 0.5	95-mce/mos	333.15	0.500	12.7 ± 0.5	95-mce/mos
313.14	0.500	15.6 ± 0.5	95-mce/mos	343.15	0.500	11.6 ± 0.5	95-mce/mos
313.14	0.500	15.3 ± 0.5	95-mce/mos	343.15	0.500	11.8 ± 0.5	95-mce/mos

cont.

Carbon monoxide + Carbon dioxide (cont.)

Table 5. Experimental C_m values with uncertainty.

T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
323.15	0.000	2.4 ± 0.1	89-mal/nat	373.15	0.798	2.4 ± 0.1	89-mal/nat
323.15	0.299	7.0 ± 0.1	89-mal/nat	373.15	1.000	3.8 ± 0.1	89-mal/nat
323.15	0.798	3.2 ± 0.1	89-mal/nat	398.15	0.299	5.5 ± 0.9	89-mal/nat
323.15	1.000	5.4 ± 0.1	89-mal/nat	398.15	0.798	2.5 ± 0.3	89-mal/nat
348.15	0.299	6.6 ± 0.7	89-mal/nat	423.15	0.000	3.7 ± 0.4	89-mal/nat
348.15	0.798	2.5 ± 0.5	89-mal/nat	423.15	0.299	6.1 ± 1.0	89-mal/nat
373.15	0.000	2.5 ± 0.3	89-mal/nat	423.15	0.798	2.6 ± 0.6	89-mal/nat
373.15	0.299	5.8 ± 0.6	89-mal/nat	423.15	1.000	3.8 ± 0.5	89-mal/nat

Carbon monoxide [630-08-0] CO MW = 28.01 116
Hydrogen [1333-74-0] H_2 MW = 2.02

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 4.4409 \cdot 10 - 9.8417 \cdot 10^3/(T/K) + 1.7911 \cdot 10^5/(T/K)^2 - 7.7626 \cdot 10^6/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
35	-271.6 ± 5	100	-43.9 ± 5	200	-1.3 ± 5
50	-142.9 ± 5	150	-15.5 ± 5	300	13.3 ± 5

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
36.00	-256.0 ± 3.0	1.1	56-reu/bee (×)	60.00	-108.0 ± 1.0	-2.2	56-reu/bee (×)
40.00	-213.0 ± 2.0	-2.0	56-reu/bee (×)	77.30	-73.0 ± 6.0	-3.3	91-sch/eli (▲)
44.00	-179.0 ± 2.0	-1.1	56-reu/bee (×)	143.15	-14.0 ± 4.5	4.2	91-sch/eli (▲)
48.00	-153.0 ± 2.0	0.1	56-reu/bee (×)	173.15	-7.0 ± 4.5	1.0	91-sch/eli (▲)
52.00	-133.0 ± 1.0	0.8	56-reu/bee (×)	213.15	1.6 ± 3.5	0.2	91-sch/eli (▲)
56.00	-117.0 ± 1.0	1.4	56-reu/bee (×)	273.20	10.1 ± 1.0	-0.3	67-bre (☐)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	0.334	10.7 ± 0.5	32-tow/bha	298.15	0.669	3.4 ± 1.0	29-sco
273.15	0.498	5.0 ± 0.5	32-tow/bha	298.15	0.334	11.1 ± 0.5	32-tow/bha
273.15	0.667	-2.1 ± 0.5	32-tow/bha	298.15	0.498	7.7 ± 0.5	32-tow/bha
298.15	0.337	10.4 ± 1.0	29-sco	298.15	0.667	3.3 ± 0.0	32-tow/bha
298.15	0.483	7.4 ± 1.0	29-sco				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	0.500	10.2 ± 0.2	67-bre				

cont.

Carbon monoxide + Hydrogen (cont.)

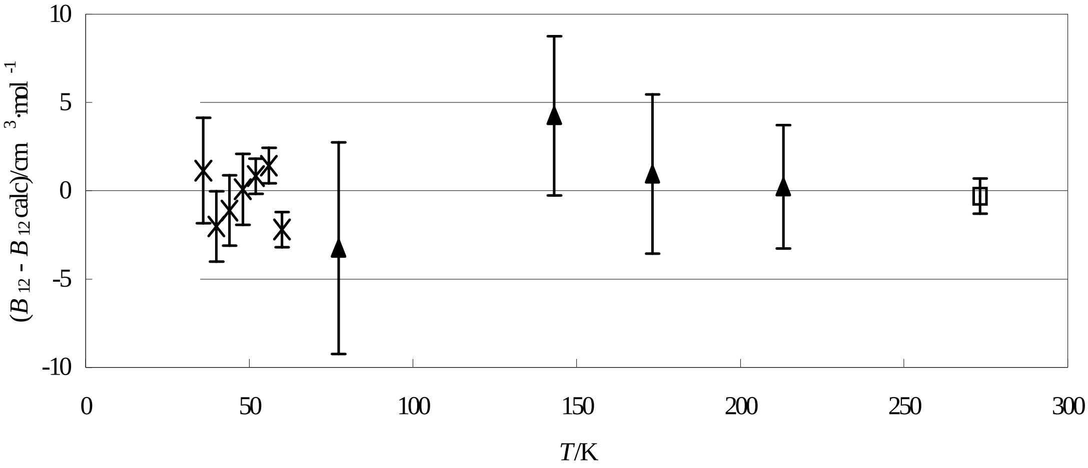

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Carbon monoxide [630-08-0] CO MW = 28.01 117
Water [7732-18-5] H_2O MW = 18.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{12} ± δB_{12} / $cm^3 \cdot mol^{-1}$	Ref.	T/K	B_{12} ± δB_{12} / $cm^3 \cdot mol^{-1}$	Ref.
363.50	-27 ± 7	84-smi/wor	393.20	-20 ± 7	84-smi/wor
365.50	-25 ± 7	88-wor/lan	393.20	-16 ± 7	88-wor/lan
375.20	-26 ± 9	84-smi/wor	403.20	-25 ± 8	84-smi/wor
375.20	-23 ± 9	88-wor/lan	403.20	-20 ± 8	88-wor/lan

Carbon monoxide [630-08-0] CO MW = 28.01 118
Helium [7440-59-7] He MW = 4.00

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 3.4426 \cdot 10 - 5.6592 \cdot 10^3/(T/K) + 7.7493 \cdot 10^5/(T/K)^2 - 4.7919 \cdot 10^7/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
80	-8.8 ± 8	150	16.9 ± 5	250	21.1 ± 5
100	7.4 ± 6	200	19.5 ± 5	300	22.4 ± 5

cont.

Carbon monoxide + Helium (cont.)

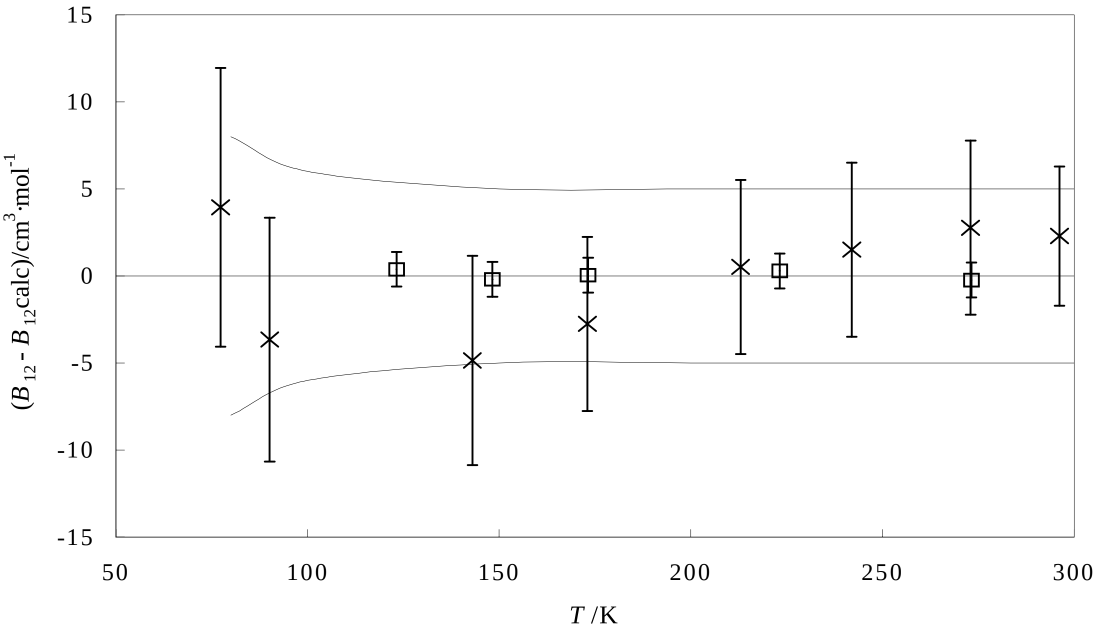

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)
77.30	-8.9 ± 8.0	3.9	86-eli/hoa (×)	213.00	20.5 ± 5.0	0.5	86-eli/hoa (×)
90.10	-2.1 ± 7.0	-3.7	86-eli/hoa (×)	223.20	20.6 ± 1.0	0.3	67-bre (□)
123.20	14.3 ± 1.0	0.4	67-bre (□)	242.00	22.4 ± 5.0	1.5	86-eli/hoa (×)
143.00	11.5 ± 6.0	-4.9	86-eli/hoa (×)	273.00	24.5 ± 5.0	2.8	86-eli/hoa (×)
148.20	16.6 ± 1.0	-0.2	67-bre (□)	273.20	21.5 ± 1.0	-0.2	67-bre (□)
173.00	15.6 ± 5.0	-2.8	86-eli/hoa (×)	296.20	24.6 ± 4.0	2.3	86-eli/hoa (×)
173.20	18.4 ± 1.0	0.0	67-bre (□)				

Table 4. Experimental B^E values with uncertainty.

$\frac{T}{\text{K}}$	x_1	$\frac{B^E \pm \delta B^E}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.	$\frac{T}{\text{K}}$	x_1	$\frac{B^E \pm \delta B^E}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.
123.20	0.500	70.0 ± 0.2	67-bre	223.20	0.500	29.9 ± 0.2	67-bre
148.20	0.500	53.0 ± 0.2	67-bre	273.20	0.500	22.8 ± 0.2	67-bre
173.20	0.500	42.4 ± 0.2	67-bre				

Carbon monoxide [630-08-0] CO MW = 28.01 **119**
Krypton [7439-90-9] Kr MW = 83.80

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
123.20	-183.1 ± 2.0	67-bre	223.20	-56.9 ± 1.0	67-bre
148.20	-130.2 ± 2.0	67-bre	273.20	-34.7 ± 1.0	67-bre
173.20	-96.3 ± 1.0	67-bre			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
123.20	0.500	22.7 ± 0.2	67-bre	223.20	0.500	5.8 ± 0.2	67-bre
148.20	0.500	14.2 ± 0.2	67-bre	273.20	0.500	3.9 ± 0.2	67-bre
173.20	0.500	10.4 ± 0.2	67-bre				

Carbon monoxide [630-08-0] CO MW = 28.01 **120**
Nitrogen [7727-37-9] N_2 MW = 28.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	-12.0 ± 1.0	67-bre	318.15	-3.8 ± 1.0	95-mce/buc 1
273.15	-12.4 ± 0.5	88-jae/aud	333.15	2.9 ± 0.1	88-jae/aud
293.15	-7.0 ± 0.3	88-jae/aud	333.15	-1.2 ± 1.0	95-mce/buc 1
303.15	-6.6 ± 1.0	95-mce/buc	333.15	-1.2 ± 1.0	95-mce/buc 1
303.16	-6.3 ± 1.0	95-mce/buc 1	348.15	0.7 ± 1.0	95-mce/buc 1
313.15	-1.8 ± 0.1	88-jae/aud	348.17	0.7 ± 1.0	95-mce/buc 1
318.14	-3.7 ± 1.0	95-mce/buc 1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	0.500	0.4 ± 0.2	67-bre	333.15	0.500	-0.8 ± 0.2	95-mce/buc 1
303.15	0.500	-0.9 ± 0.2	95-mce/buc 1	333.15	0.500	-0.8 ± 0.2	95-mce/buc 1
303.16	0.500	-0.6 ± 0.2	95-mce/buc 1	348.15	0.500	-1.0 ± 0.2	95-mce/buc 1
318.14	0.500	-0.9 ± 0.2	95-mce/buc 1	348.17	0.500	-1.0 ± 0.2	95-mce/buc 1

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	1.8 ± 0.2	88-jae/aud	313.15	1.6 ± 0.2	88-jae/aud
293.15	1.7 ± 0.2	88-jae/aud	333.15	1.5 ± 0.2	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	1.6 ± 0.2	88-jae/aud	313.15	1.5 ± 0.2	88-jae/aud
293.15	1.5 ± 0.2	88-jae/aud	333.15	1.4 ± 0.2	88-jae/aud

Carbon monoxide	**[630-08-0]**	**CO**	**MW = 28.01**	**121**
Neon	**[7440-01-9]**	**Ne**	**MW = 20.18**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 3.3843 \cdot 10 - 6.4861 \cdot 10^3/(T/\text{K}) + 2.5955 \cdot 10^5/(T/\text{K})^2 - 2.4332 \cdot 10^7/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
125	-13.9 ± 4	300	14.2 ± 3	500	21.7 ± 3
200	4.9 ± 3	400	18.9 ± 3		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
123.20	-14.71 ± 1.0	0.0	67-bre (×)	273.20	12.23 ± 1.0	-0.2	67-bre (×)
148.20	-5.64 ± 1.0	-0.1	67-bre (×)	296.15	14.1 ± 1.5	0.1	96-vat/sch (□)
173.20	0.42 ± 1.0	0.1	67-bre (×)	353.15	17.2 ± 2.0	0.2	96-vat/sch (□)
223.20	7.83 ± 1.0	0.0	67-bre (×)	463.15	20.6 ± 3.0	-0.2	96-vat/sch (□)

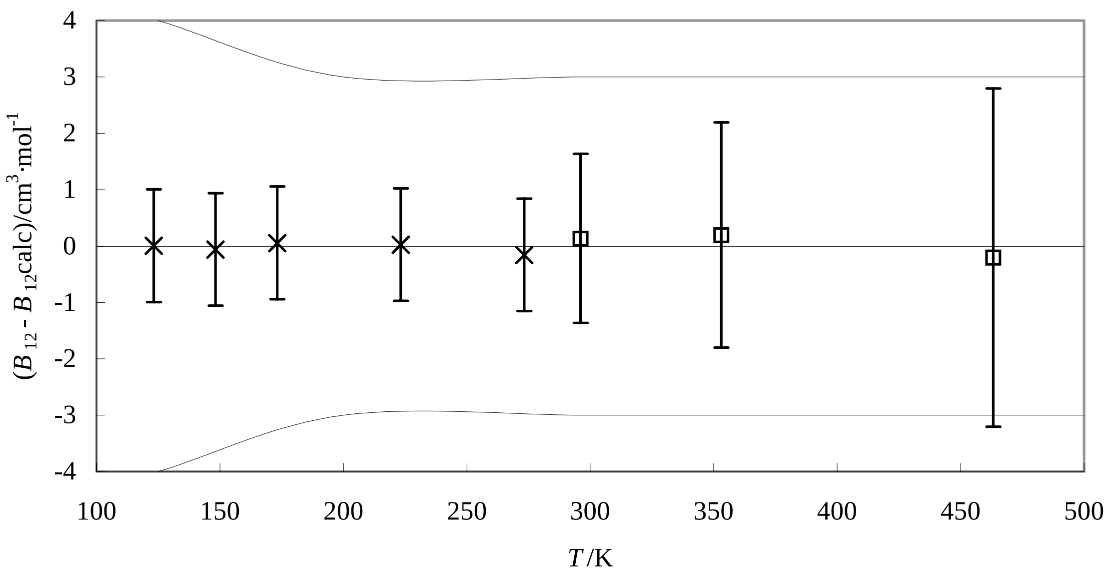

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / cm$^3\cdot$ mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / cm$^3\cdot$ mol^{-1}	Ref.
123.20	0.500	46.66 ± 0.2	67-bre	223.20	0.500	18.52 ± 0.2	67-bre
148.20	0.500	34.41 ± 0.2	67-bre	273.20	0.500	13.86 ± 0.2	67-bre
173.20	0.500	27.14 ± 0.2	67-bre				

Carbon monoxide [630-08-0] CO MW = 28.01 122
Xenon [7440-63-3] Xe MW = 131.29

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	-138.7 ± 3.0	67-bre	273.20	-52.5 ± 2.0	67-bre

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	0.500	75.4 ± 0.2	67-bre	273.20	0.500	31.7 ± 0.2	67-bre

Carbon monoxide [630-08-0] CO MW = 28.01 123
Tetrafluoromethane [75-73-0] CF_4 MW = 88.00

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-34.8 ± 1.5	86-dun/big	320.00	-23.4 ± 1.2	86-dun/big
300.00	-31.6 ± 1.4	86-dun/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	18.0 ± 0.4	86-dun/big	320.00	0.500	15.3 ± 0.4	86-dun/big
300.00	0.500	16.3 ± 0.4	86-dun/big				

Carbon monoxide [630-08-0] CO MW = 28.01 124
Methane [74-82-8] CH_4 MW = 16.04

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.2044 \cdot 10^3 - 1.9304 \cdot 10^6/(T/K) + 5.6339 \cdot 10^8/(T/K)^2 - 5.5377 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
270	-30.4 ± 3	300	-21.4 ± 3	350	-3.5 ± 3

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
273.15	-30.7 ± 1.0	-1.7	88-jae/aud (Δ)	293.15	-26.3 ± 1.0	-3.4	88-mic/sch (×)
273.15	-31.2 ± 1.0	-2.2	88-mic/sch (×)	293.15	-24.9 ± 1.0	-2.0	88-mic/sch (×)
273.15	-30.7 ± 1.0	-1.7	88-mic/sch (×)	313.15	-18.7 ± 0.5	-0.5	88-jae/aud (Δ)
273.20	-29.9 ± 1.0	-1.0	67-bre (■)	313.15	-20.0 ± 1.0	-1.8	88-mic/sch (×)
288.70	-7.3 ± 5.0	16.7	61-mas/eak [1]	313.15	-18.7 ± 1.0	-0.5	88-mic/sch (×)
293.15	-24.9 ± 1.0	-2.0	88-jae/aud (Δ)	333.15	-12.0 ± 0.5	-0.5	88-jae/aud (Δ)

[1] Not included in Figure 1.

cont.

Carbon monoxide + Methane (cont.)

Table 4. Experimental B^E values with uncertainty.

$\frac{T}{K}$	x_1	$\frac{B^E \pm \delta B^E}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	x_1	$\frac{B^E \pm \delta B^E}{cm^3 \cdot mol^{-1}}$	Ref.
273.20	0.500	3.8 ± 0.2	67-bre				

Table 6. Experimental C_{112} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
273.15	2.1 ± 0.4	88-jae/aud	313.15	1.9 ± 0.4	88-jae/aud
293.15	2.0 ± 0.4	88-jae/aud	333.15	1.8 ± 0.4	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
273.15	2.4 ± 1.0	88-mic/sch	293.15	2.2 ± 0.4	88-jae/aud
273.15	-17.8 ± 10.0	88-mic/sch	313.15	-15.5 ± 10.0	88-mic/sch
273.15	2.4 ± 0.4	88-jae/aud	313.15	2.1 ± 1.0	88-mic/sch
293.15	2.2 ± 1.0	88-mic/sch	313.15	2.1 ± 0.4	88-jae/aud
293.15	-16.5 ± 10.0	88-mic/sch	333.15	2.0 ± 0.4	88-jae/aud

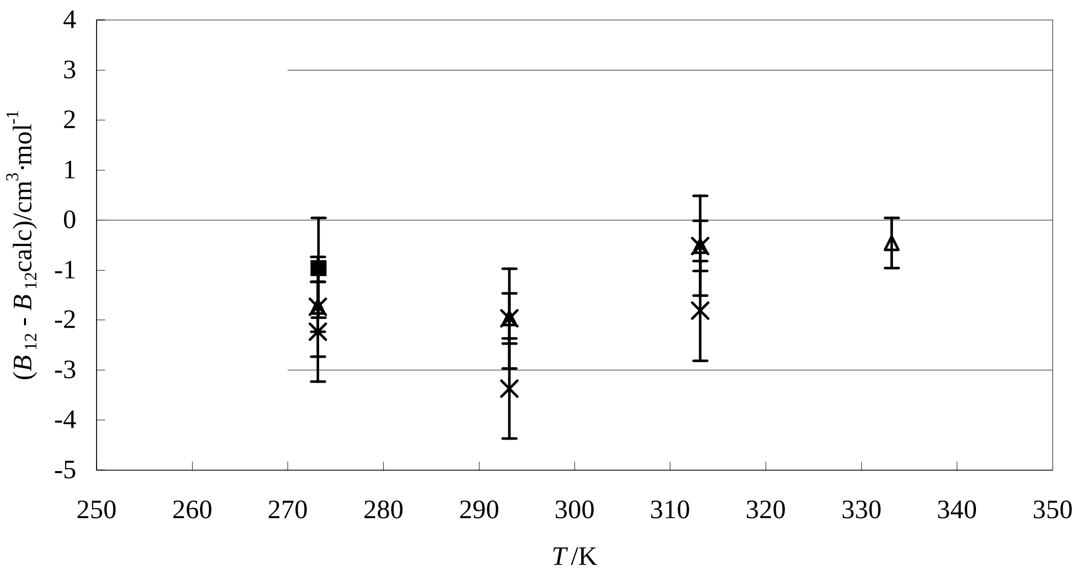

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Carbon monoxide [630-08-0] CO MW = 28.01 125
Ethene [74-85-1] C_2H_4 MW = 28.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	-32.2 ± 5.0	61-mas/eak	313.16	-39.5 ± 4.0	95-mce/buc-1
300.04	-44.8 ± 4.0	95-mce/buc-1	328.16	-34.1 ± 4.0	95-mce/buc-1
300.06	-45.2 ± 4.0	95-mce/buc-1	328.16	-33.6 ± 4.0	95-mce/buc-1
313.15	-40.2 ± 4.0	95-mce/buc-1	343.15	-28.8 ± 4.0	95-mce/buc-1

Carbon monoxide [630-08-0] CO MW = 28.01 126
Ethane [74-84-0] C_2H_6 MW = 30.07

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	0.366	-56.9 ± 1.6	94-mce/aba	323.15	0.356	-42.4 ± 1.7	94-mce/aba
303.15	0.417	-60.6 ± 1.4	94-mce/aba	333.15	0.482	-55.8 ± 1.7	94-mce/aba
313.15	0.355	-45.7 ± 1.3	94-mce/aba	343.15	0.468	-48.9 ± 0.4	94-mce/aba

Carbon monoxide [630-08-0] CO MW = 28.01 127
Propene [115-07-1] C_3H_6 MW = 42.08

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	-62.9 ± 5	61-mas/eak			

Carbon monoxide [630-08-0] CO MW = 28.01 128
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
302.23	-75.6 ± 3.0	95-mce/mos	323.15	-65.3 ± 2.5	95-mce/mos
302.30	-77.4 ± 3.0	95-mce/mos	333.18	-60.2 ± 2.5	95-mce/mos
303.15	-75.3 ± 3.0	95-mce/mos	333.20	-59.1 ± 2.5	95-mce/mos
312.16	-71.2 ± 2.5	95-mce/mos	343.19	-54.8 ± 2.5	95-mce/mos
312.84	-71.2 ± 2.5	95-mce/mos	343.20	-55.6 ± 2.5	95-mce/mos
323.01	-64.8 ± 2.5	95-mce/mos			

Carbon monoxide **[630-08-0]** **CO** **MW = 28.01** **129**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.08	-106.0 ± 9.0	94-mce	348.17	-67.3 ± 3.0	95-mce/mos-1
312.94	-93.0 ± 9.0	94-mce	348.17	-68.2 ± 3.0	95-mce/mos-1
327.60	-86.0 ± 9.0	94-mce			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.08	0.500	255.4 ± 4.0	94-mce	327.60	0.500	202.9 ± 4.0	94-mce
312.94	0.500	228.5 ± 4.0	94-mce				

Carbon monoxide **[630-08-0]** **CO** **MW = 28.01** **130**
2-Methylpropane **[75-28-5]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.08	-106 ± 9	94-mce	348.16	-77.5 ± 6.0	95-mce/mos-1
312.94	-93 ± 9	94-mce	348.17	-78.3 ± 6.0	95-mce/mos-1
327.60	-86 ± 9	94-mce			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.08	0.500	239.7 ± 2.0	94-mce	327.60	0.500	189.1 ± 2.0	94-mce
312.94	0.500	211.0 ± 2.0	94-mce				

Carbon monoxide **[630-08-0]** **CO** **MW = 28.01** **131**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
299.50	-123.6 ± 10.0	95-mce/buc	328.15	-92.0 ± 10.0	95-mce/buc
299.50	-122.3 ± 10.0	95-mce/buc	328.15	-90.6 ± 10.0	95-mce/buc
313.15	-107.6 ± 10.0	95-mce/buc	343.15	-77.0 ± 10.0	95-mce/buc
313.15	-108.4 ± 10.0	95-mce/buc	343.15	-75.8 ± 10.0	95-mce/buc

cont.

Carbon monoxide + Pentane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.
299.50	0.500	473.0 ± 2.0	95-mce/buc	328.15	0.500	379.3 ± 1.7	95-mce/buc
299.50	0.500	474.3 ± 2.0	95-mce/buc	328.15	0.500	380.7 ± 1.5	95-mce/buc
313.15	0.500	424.1 ± 2.0	95-mce/buc	343.15	0.500	339.5 ± 1.5	95-mce/buc
313.15	0.500	423.3 ± 1.7	95-mce/buc	343.15	0.500	340.7 ± 1.5	95-mce/buc

Carbon monoxide **[630-08-0]** **CO** **MW = 28.01** **132**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 2.4487 · 10^2 - 2.4165 · 10^5/(T/K) + 7.1240 · 10^7/(T/K)^2 - 9.9105 · 10^9/(T/K)^3

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
325	-112.9 ± 5	400	-68.8 ± 5	500	-32.7 ± 3
350	-95.1 ± 5	450	-49.1 ± 5	600	-5.9 ± 2

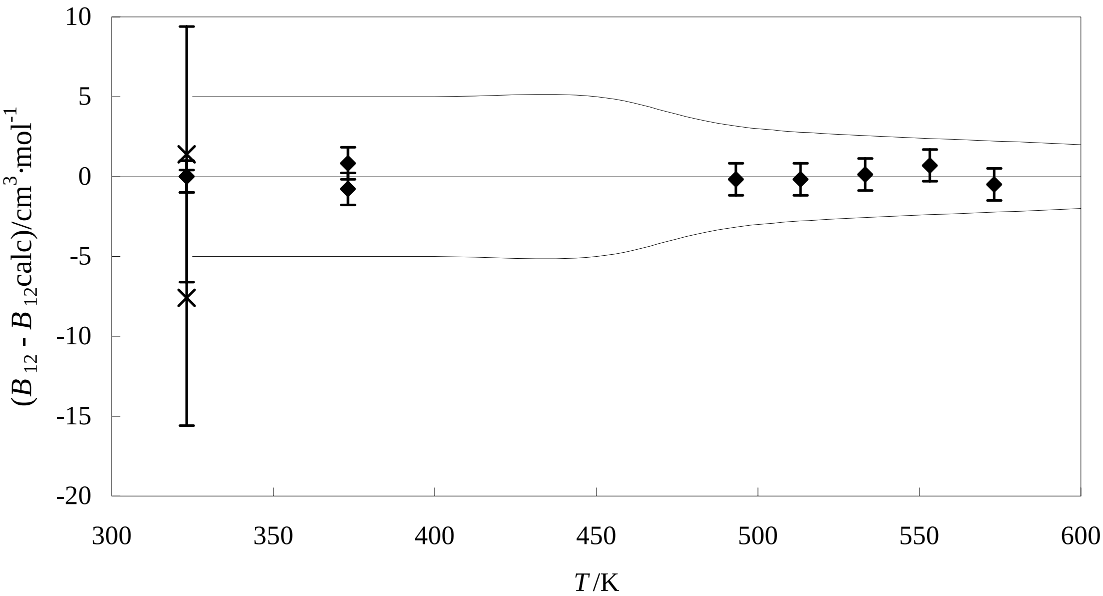

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Carbon monoxide + Benzene (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
323.15	-114.4 ± 1.0	0.0	64-con (♦)	493.20	-35.0 ± 1.0	-0.2	64-con (♦)
323.15	-114.4 ± 1.0	0.0	64-con (♦)	513.20	-29.0 ± 1.0	-0.2	64-con (♦)
323.15	-113.0 ± 8.0	1.4	68-eve/gai (×)	533.20	-23.0 ± 1.0	0.1	64-con (♦)
323.15	-122.0 ± 8.0	-7.6	68-eve/gai (×)	553.20	-17.0 ± 1.0	0.7	64-con (♦)
373.15	-82.6 ± 1.0	-0.8	64-con (♦)	573.20	-13.0 ± 1.0	-0.5	64-con (♦)
373.15	-81.0 ± 1.0	0.8	64-con (♦)				

Carbon monoxide **[630-08-0]** **CO** **MW = 28.01** **133**
Octane **[111-65-9]** **C_8H_{18}** **MW = 114.23**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.4481 \cdot 10^2 - 1.6544 \cdot 10^5/(T/K) + 1.3200 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-160.0 ± 10	400	-86.3 ± 2	500	-33.3 ± 2
350	-120.1 ± 8	450	-57.6 ± 2	600	5.7 ± 2

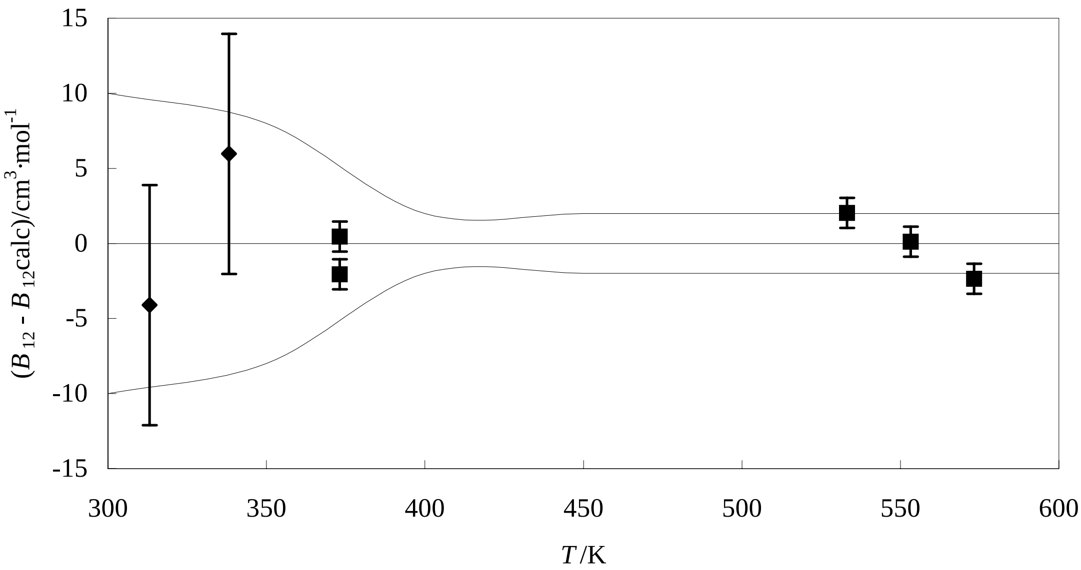

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Carbon monoxide + Octane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
313.15	-153.0 ± 8	-4.1	68-eve/gai (♦)	533.20	-17.0 ± 1	2.0	64-con (■)
338.20	-123.0 ± 8	6.0	68-eve/gai (♦)	553.20	-11.0 ± 1	0.1	64-con (■)
373.15	-105.8 ± 1	-2.0	64-con (■)	573.20	-6.0 ± 1	-2.4	64-con(■)
373.15	-103.3 ± 1	0.5	64-con (■)				

Carbonyl sulfide [463-58-1] COS MW = 60.08 134
Helium [7440-59-7] He MW = 4.00

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.0	30.1 ± 2.5	92-bel/big	310.0	37.9 ± 2.8	92-bel/big
300.0	32.7 ± 2.5	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.0	0.500	159.3 ± 5.0	92-bel/big	310.0	0.500	145.4 ± 5.0	92-bel/big
300.0	0.500	151.9 ± 5.0	92-bel/big				

Carbonyl sulfide [463-58-1] COS MW = 60.08 135
Krypton [7439-90-9] Kr MW = 83.80

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.0	-93.2 ± 8.0	92-bel/big	310.0	-71.6 ± 7.5	92-bel/big
300.0	-85.5 ± 8.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.0	0.500	69.6 ± 1.0	92-bel/big	310.0	0.500	65.5 ± 1.0	92-bel/big
300.0	0.500	64.5 ± 1.0	92-bel/big				

Carbonyl sulfide [463-58-1] COS MW = 60.08 136
Neon [7440-01-9] Ne MW = 20.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.0	8.9 ± 2.0	92-bel/big	310.0	19.7 ± 3.2	92-bel/big
300.0	16.7 ± 3.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.0	0.500	138.5 ± 7.0	92-bel/big	310.0	0.500	127.3 ± 7.0	92-bel/big
300.0	0.500	136.0 ± 7.0	92-bel/big				

Carbonyl sulfide [463-58-1] COS MW = 60.08 137
Xenon [7440-63-3] Xe MW = 131.29

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.0	-172.2 ± 15.0	92-bel/big	310.0	-143.6 ± 14.0	92-bel/big
300.0	-161.6 ± 15.0	92-bel/big			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 138
Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-158.0 ± 2.0	82-mar/tre-1	320.00	-125.3 ± 2.0	82-mar/tre-1
290.00	-158.5 ± 2.0	82-mar/tre-1	320.00	-125.1 ± 2.0	82-mar/tre-1
290.00	-158.6 ± 2.0	82-mar/tre-1	320.00	-125.1 ± 2.0	82-mar/tre-1
300.00	-147.1 ± 2.0	82-mar/tre-1	322.85	-130.0 ± 30.0	97-hou/sta
300.00	-146.8 ± 2.0	82-mar/tre-1			

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
322.85	0.105	-205.2 ± 0.30	97-hou/sta	322.85	0.798	-115.3 ± 0.40	97-hou/sta
322.85	0.208	-198.1 ± 1.80	97-hou/sta	322.85	0.902	-108.9 ± 0.10	97-hou/sta
322.85	0.301	-179.9 ± 2.50	97-hou/sta				

cont.

Carbon dioxide + Sulfur hexafluoride (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	57.0 ± 0.2	82-mar/tre-1	300.00	0.500	52.2 ± 0.2	82-mar/tre-1
290.00	0.500	57.1 ± 0.2	82-mar/tre-1	320.00	0.500	45.6 ± 0.2	82-mar/tre-1
290.00	0.500	57.1 ± 0.2	82-mar/tre-1	320.00	0.500	45.8 ± 0.2	82-mar/tre-1
300.00	0.500	51.9 ± 0.2	82-mar/tre-1	320.00	0.500	45.0 ± 0.2	82-mar/tre-1

Carbon dioxide [124-38-9] CO_2 MW = 44.01 139
Hydrogen [1333-74-0] H_2 MW = 2.02

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.2598 \cdot 10^2 - 1.7768 \cdot 10^5/(T/K) + 4.7952 \cdot 10^7/(T/K)^2 - 4.5198 \cdot 10^9/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
225	-13.3 ± 5	275	-3.4 ± 4	325	1.6 ± 4
250	-6.8 ± 5	300	-0.9 ± 4	375	7.4 ± 4

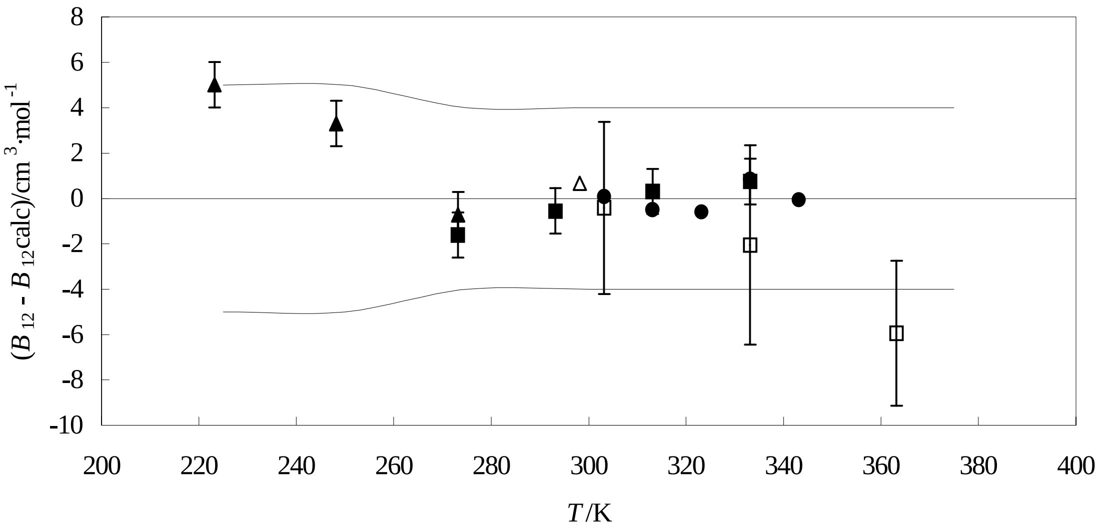

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Carbon dioxide + Hydrogen (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
223.20	-9.0 ± 1.0	5.0	67-bre (▲)	313.15	0.7 ± 1.0	0.3	88-jae/aud (■)
248.20	-3.8 ± 1.0	3.3	67-bre (▲)	313.15	-0.1 ± 0.1	-0.5	93-aba/mce (●)
273.15	-5.2 ± 1.0	-1.6	88-jae/aud (■)	323.15	0.8 ± 0.1	-0.6	93-aba/mce (●)
273.20	-4.3 ± 1.0	-0.7	67-bre (▲)	333.15	0.4 ± 4.4	-2.1	56-cot/ham (□)
293.15	-2.1 ± 1.0	-0.6	88-jae/aud (■)	333.15	3.2 ± 1.0	0.7	88-jae/aud (■)
298.15	-0.4 ± 0.1	0.7	90-vil/gai (Δ)	333.15	3.3 ± 0.1	0.8	93-aba/mce (●)
298.20	-32.9 ± 3.0	-31.8	42-edw/ros [1]	343.15	3.5 ± 0.1	-0.1	93-aba/mce (●)
303.15	-1.0 ± 3.8	-0.4	56-cot/ham (□)	363.15	0.0 ± 3.2	-5.9	56-cot/ham (□)
303.15	-0.5 ± 0.1	0.1	93-aba/mce (●)				

[1] Not included in Figure 1.

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
303.15	0.500	-26.9 ± 1.9	90-mal/vis	343.15	0.645	-34.3 ± 0.9	93-aba/mce
303.15	0.509	-27.6 ± 1.3	93-aba/mce	363.15	0.500	-16.4 ± 1.6	90-mal/vis
313.15	0.567	-32.8 ± 0.9	93-aba/mce	373.15	0.000	15.2 ± 0.2	90-mal/vis
323.15	0.000	15.1 ± 0.0	90-mal/vis	373.15	0.137	14.6 ± 0.1	90-mal/vis
323.15	0.137	13.1 ± 0.1	90-mal/vis	373.15	0.766	-36.1 ± 0.1	90-mal/vis
323.15	0.618	-36.8 ± 1.3	93-aba/mce	373.15	1.000	-73.0 ± 0.0	90-mal/vis
323.15	0.766	-54.8 ± 0.0	90-mal/vis	423.15	0.000	15.6 ± 0.6	90-mal/vis
323.15	1.000	-103.9 ± 0.0	90-mal/vis	423.15	0.137	16.1 ± 0.0	90-mal/vis
333.15	0.500	-20.6 ± 2.2	90-mal/vis	423.15	0.766	-22.3 ± 0.0	90-mal/vis
333.15	0.601	-30.8 ± 0.3	93-aba/mce	423.15	1.000	-52.0 ± 0.3	90-mal/vis

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	0.500	101.5 ± 0.2	67-bre	273.20	0.500	63.8 ± 0.2	67-bre
248.20	0.500	78.7 ± 0.2	67-bre				

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
303.15	0.5093	1.5 ± 0.2	93-aba/mce	373.15	0.0000	1.3 ± 0.2	90-mal/vis
313.15	0.5672	1.7 ± 0.2	93-aba/mce	373.15	0.1367	1.6 ± 0.2	90-mal/vis
323.15	0.0000	0.6 ± 0.0	90-mal/vis	373.15	0.7659	2.6 ± 0.1	90-mal/vis
323.15	0.1367	0.7 ± 0.2	90-mal/vis	373.15	1.0000	3.8 ± 0.5	90-mal/vis
323.15	0.7659	0.3 ± 0.4	90-mal/vis	423.15	0.0000	3.1 ± 0.8	90-mal/vis
323.15	1.0000	5.4 ± 0.0	90-mal/vis	423.15	0.1367	2.1 ± 0.3	90-mal/vis
323.15	0.6181	2.0 ± 0.2	93-aba/mce	423.15	0.7659	2.1 ± 0.5	90-mal/vis
333.15	0.6005	1.7 ± 0.1	93-aba/mce	423.15	1.0000	3.8 ± 0.3	90-mal/vis
343.15	0.6446	2.1 ± 0.2	93-aba/mce				

cont.

Carbon dioxide + Hydrogen (cont.)

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
303.15	1.8 ± 0.2	93-aba/mce	333.15	1.6 ± 0.2	93-aba/mce
313.15	1.7 ± 0.2	93-aba/mce	343.15	1.9 ± 0.2	93-aba/mce
323.15	1.8 ± 0.2	93-aba/mce			

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
303.15	0.3 ± 0.1	93-aba/mce	333.15	0.2 ± 0.1	93-aba/mce
313.15	0.2 ± 0.1	93-aba/mce	343.15	0.6 ± 0.1	93-aba/mce
323.15	0.4 ± 0.1	93-aba/mce			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **140**
Water **[7732-18-5]** **H_2O** **MW = 18.02**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.0744 \cdot 10^2 + 1.1123 \cdot 10^5/(T/K) - 4.0394 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-185.5 ± 20	400	-81.8 ± 10	500	-46.5 ± 8
350	-119.4 ± 20	450	-59.7 ± 10		

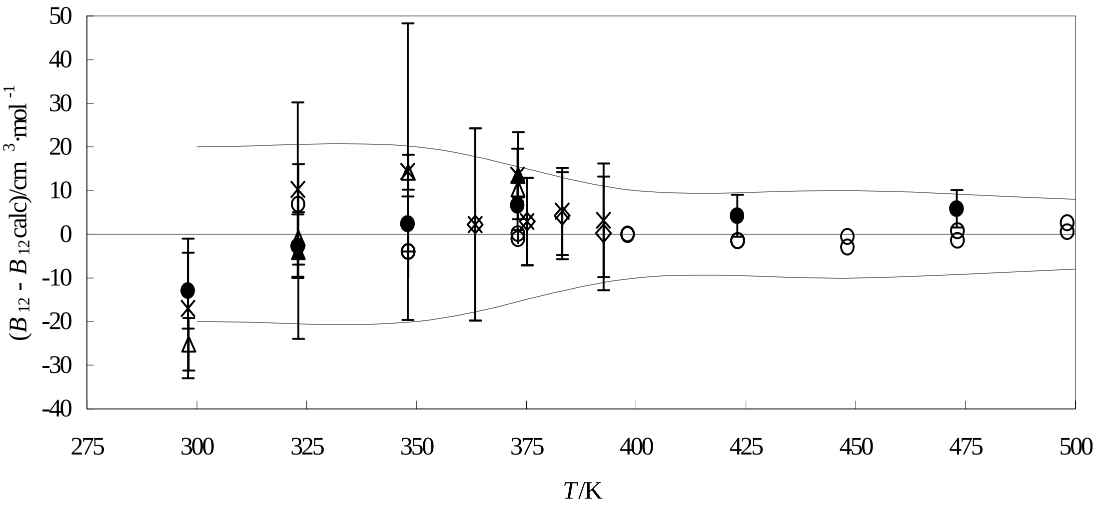

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Carbon dioxide + Water (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.00	-202.0 ± 8.7	-12.9	80-wor/col (●)	373.15	-100.5 ± 1.0	-1.0	87-pat/hol (O)
298.00	-206.0 ± 16.0	-16.9	84-smi/wor (×)	373.15	-99.3 ± 1.0	0.2	87-pat/hol (O)
298.15	-214.0 ± 6.0	-25.2	71-coa/kin (Δ)	375.20	-95.0 ± 10.0	2.9	84-smi/wor (×)
323.00	-153.0 ± 7.3	-2.7	80-wor/col (●)	375.20	-95.0 ± 10.0	2.9	88-wor/lan (◇)
323.00	-140.0 ± 20.0	10.3	84-smi/wor (×)	383.20	-87.0 ± 10.0	5.3	84-smi/wor (×)
323.15	-154.0 ± 20.0	-3.9	80-mal-1 (▲)	383.20	-88.0 ± 10.0	4.3	88-wor/lan (◇)
323.15	-151.0 ± 6.0	-0.9	71-coa/kin (Δ)	392.60	-86.0 ± 13.0	0.2	88-wor/lan (◇)
323.15	-143.2 ± 8.0	6.9	87-pat/hol (O)	398.15	-82.8 ± 0.8	0.1	87-pat/hol (O)
348.00	-119.0 ± 6.3	2.4	80-wor/col (●)	398.15	-83.0 ± 0.8	-0.1	87-pat/hol (O)
348.00	-107.0 ± 34.0	14.4	84-smi/wor (×)	423.00	-66.0 ± 4.8	4.2	80-wor/col (●)
348.15	-107.0 ± 4.0	14.2	71-coa/kin (Δ)	423.15	-71.7 ± 1.0	-1.5	87-pat/hol (O)
348.15	-125.2 ± 6.0	-4.0	87-pat/hol (O)	423.15	-71.7 ± 1.0	-1.5	87-pat/hol (O)
348.15	-125.2 ± 6.0	-4.0	87-pat/hol (O)	448.15	-63.4 ± 1.4	-3.0	87-pat/hol (O)
363.40	-105.0 ± 22.0	2.2	84-smi/wor (×)	448.15	-60.9 ± 1.4	-0.5	87-pat/hol (O)
363.40	-105.0 ± 22.0	2.2	88-wor/lan (◇)	473.00	-47.0 ± 4.3	5.8	80-wor/col (●)
373.00	-93.0 ± 5.6	6.6	80-wor/col (●)	473.15	-206.0 ± 80.0	-153.0	79-skr [1]
373.00	-86.0 ± 6.0	13.6	84-smi/wor (×)	473.15	-52.0 ± 1.4	0.8	87-pat/hol (O)
373.15	-89.0 ± 2.0	10.5	71-coa/kin (Δ)	493.15	-126.0 ± 50	-78.0	79-skr [1]
373.15	-86.0 ± 10.0	13.5	80-mal-1 (▲)	523.15	-34.0 ± 20.0	8.4	79-skr [1]

[1] Not included in Figure 1.

Table 3. Experimental B_m values with uncertainty

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.020	-129.4 ± 1.2	87-pat/hol	423.15	0.250	-73.8 ± 0.3	87-pat/hol
323.15	0.050	-107.6 ± 3.0	87-pat/hol	423.15	0.500	-121.2 ± 0.4	87-pat/hol
348.15	0.020	-86.5 ± 1.6	87-pat/hol	435.65	0.500	-111.9 ± 0.7	87-pat/hol
348.15	0.050	-88.8 ± 0.6	87-pat/hol	448.15	0.020	-44.6 ± 0.1	87-pat/hol
348.15	0.100	-97.5 ± 1.1	87-pat/hol	448.15	0.050	-45.5 ± 0.1	87-pat/hol
373.15	0.020	-73.0 ± 0.3	87-pat/hol	448.15	0.100	-48.9 ± 0.0	87-pat/hol
373.15	0.050	-74.8 ± 0.2	87-pat/hol	448.15	0.250	-62.7 ± 0.1	87-pat/hol
373.15	0.100	-80.6 ± 0.8	87-pat/hol	448.15	0.500	-102.9 ± 0.3	87-pat/hol
373.15	0.250	-106.0 ± 2.0	87-pat/hol	460.65	0.500	-94.7 ± 0.4	87-pat/hol
373.15	0.500	-181.5 ± 4.0	87-pat/hol	473.15	0.020	-37.8 ± 0.0	87-pat/hol
385.65	0.500	-162.7 ± 2.7	87-pat/hol	473.15	0.050	-38.4 ± 0.1	87-pat/hol
398.15	0.020	-61.9 ± 0.1	87-pat/hol	473.15	0.100	-41.5 ± 0.0	87-pat/hol
398.15	0.050	-63.5 ± 0.2	87-pat/hol	473.15	0.250	-53.3 ± 0.1	87-pat/hol
398.15	0.100	-67.8 ± 0.3	87-pat/hol	473.15	0.500	-87.4 ± 0.2	87-pat/hol
398.15	0.250	-87.5 ± 1.6	87-pat/hol	485.65	0.500	-80.7 ± 0.1	87-pat/hol
398.15	0.500	-145.9 ± 1.2	87-pat/hol	498.15	0.020	-31.8 ± 0.0	87-pat/hol
410.65	0.500	-132.7 ± 2.4	87-pat/hol	498.15	0.050	-32.4 ± 0.0	87-pat/hol
423.15	0.020	-52.6 ± 0.0	87-pat/hol	498.15	0.100	-35.1 ± 0.0	87-pat/hol
423.15	0.050	-53.7 ± 0.1	87-pat/hol	498.15	0.250	-45.4 ± 0.1	87-pat/hol
423.15	0.100	-57.7 ± 0.1	87-pat/hol	498.15	0.500	-74.8 ± 0.4	87-pat/hol

cont.

Carbon dioxide + Water (cont.)

Table 5. Experimental C_m values with uncertainty.

T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
323.15	0.020	0.9 ± 8.0	87-pat/hol	423.15	0.500	-18.2 ± 2.2	87-pat/hol
348.15	0.020	1.6 ± 4.0	87-pat/hol	435.65	0.500	-7.9 ± 2.6	87-pat/hol
348.15	0.050	0.7 ± 2.0	87-pat/hol	448.15	0.020	2.5 ± 0.0	87-pat/hol
348.15	0.100	-2.6 ± 7.0	87-pat/hol	448.15	0.050	2.5 ± 0.0	87-pat/hol
373.15	0.020	2.7 ± 0.7	87-pat/hol	448.15	0.100	2.4 ± 0.0	87-pat/hol
373.15	0.050	2.0 ± 0.5	87-pat/hol	448.15	0.250	1.5 ± 0.2	87-pat/hol
373.15	0.100	0.7 ± 3.3	87-pat/hol	448.15	0.500	-4.0 ± 0.6	87-pat/hol
373.15	0.250	-30.6 ± 12.0	87-pat/hol	460.65	0.500	-2.2 ± 0.6	87-pat/hol
385.65	0.500	-88.1 ± 22.0	87-pat/hol	473.15	0.020	2.4 ± 0.0	87-pat/hol
398.15	0.020	2.9 ± 0.1	87-pat/hol	473.15	0.050	2.4 ± 0.0	87-pat/hol
398.15	0.050	2.9 ± 0.2	87-pat/hol	473.15	0.100	2.3 ± 0.0	87-pat/hol
398.15	0.100	2.1 ± 0.5	87-pat/hol	473.15	0.250	1.9 ± 0.1	87-pat/hol
398.15	0.250	-7.8 ± 5.0	87-pat/hol	473.15	0.500	-0.5 ± 0.4	87-pat/hol
398.15	0.500	-36.7 ± 9.5	87-pat/hol	485.65	0.500	0.1 ± 0.1	87-pat/hol
410.65	0.500	-30.0 ± 9.5	87-pat/hol	498.15	0.020	2.2 ± 0.0	87-pat/hol
423.15	0.020	2.7 ± 0.0	87-pat/hol	498.15	0.050	2.2 ± 0.0	87-pat/hol
423.15	0.050	2.7 ± 0.0	87-pat/hol	498.15	0.100	2.1 ± 0.0	87-pat/hol
423.15	0.100	2.7 ± 0.1	87-pat/hol	498.15	0.250	1.9 ± 0.0	87-pat/hol
423.15	0.250	-0.4 ± 0.8	87-pat/hol	498.15	0.500	0.9 ± 0.3	87-pat/hol

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
373.15	-91.5 ± 20.0	87-pat/hol	448.15	4.2 ± 1.0	87-pat/hol
398.15	-30.4 ± 10.0	87-pat/hol	473.15	0.6 ± 1.0	87-pat/hol
398.15	-47.7 ± 10.0	87-pat/hol	473.15	4.3 ± 1.0	87-pat/hol
423.15	-14.6 ± 8.0	87-pat/hol	498.15	1.2 ± 1.0	87-pat/hol
423.15	-19.0 ± 8.0	87-pat/hol	498.15	2.7 ± 1.0	87-pat/hol
448.15	1.8 ± 1.0	87-pat/hol			

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
348.15	-17.9 ± 6.0	87-pat/hol	448.15	2.8 ± 1.1	87-pat/hol
373.15	-1.2 ± 1.0	87-pat/hol	448.15	3.5 ± 1.1	87-pat/hol
373.15	-5.6 ± 2.0	87-pat/hol	473.15	2.9 ± 1.1	87-pat/hol
398.15	4.0 ± 1.2	87-pat/hol	473.15	3.5 ± 1.1	87-pat/hol
398.15	5.4 ± 1.2	87-pat/hol	498.15	2.5 ± 1.1	87-pat/hol
423.15	4.7 ± 1.2	87-pat/hol	498.15	3.8 ± 1.1	87-pat/hol
423.15	3.7 ± 1.1	87-pat/hol			

Carbon dioxide	**[124-38-9]**	**CO_2**	**MW = 44.01**	**141**
Helium	**[7440-59-7]**	**He**	**MW = 4.00**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3 \cdot mol^{-1}} = 4.8515 \cdot 10 - 7.9326 \cdot 10^3/(T/\mathrm{K})$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
200	8.9 ± 4	300	22.1 ± 4	400	28.7 ± 4
250	16.8 ± 4	350	25.9 ± 4	450	30.9 ± 4

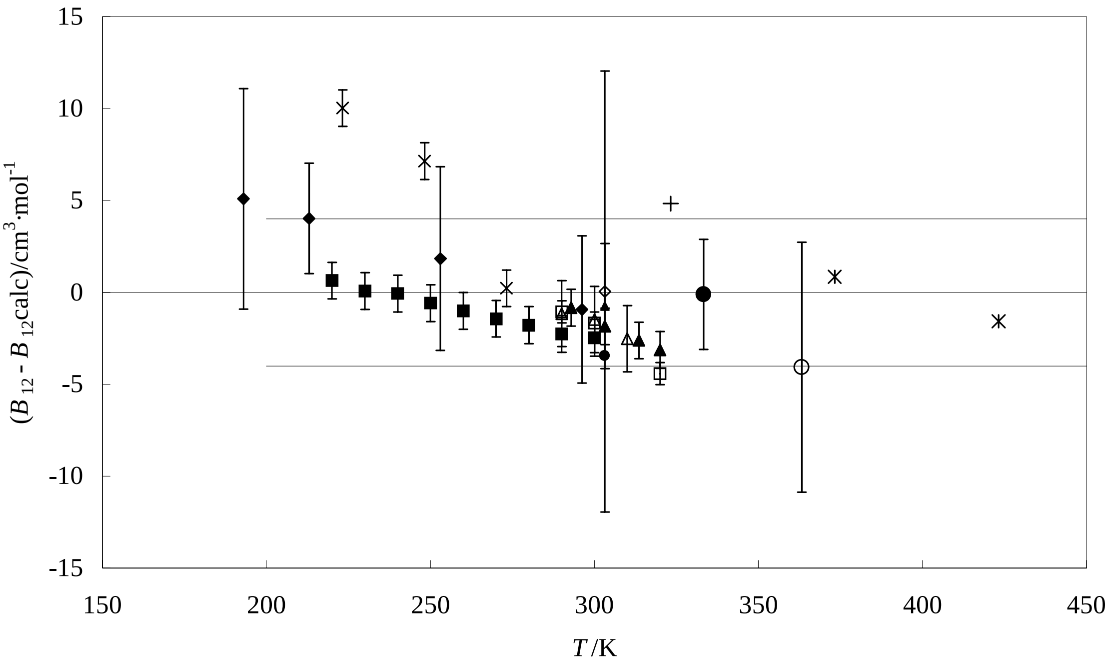

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
193.00	12.5 ± 6.0	5.1	86-eli/hoa (♦)	248.20	23.7 ± 1.0	7.1	67-bre (×)
213.00	15.3 ± 3.0	4.0	86-eli/hoa (♦)	250.00	16.2 ± 1.0	-0.6	80-hol/wat (■)
220.00	13.1 ± 1.0	0.6	80-hol/wat (■)	253.00	19.0 ± 5.0	1.8	86-eli/hoa (♦)
223.20	23.0 ± 1.0	10.0	67-bre (×)	260.00	17.0 ± 1.0	-1.0	80-hol/wat (■)
230.00	14.1 ± 1.0	0.1	80-hol/wat (■)	270.00	17.7 ± 1.0	-1.4	80-hol/wat (■)
240.00	15.4 ± 1.0	-0.1	80-hol/wat (■)	273.20	19.7 ± 1.0	0.2	67-bre (×)

cont.

Carbon dioxide + Helium (cont.)

Table 2. (cont.)

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
280.00	18.4 ± 1.0	-1.8	80-hol/wat (■)	303.20	22.4 ± 12.0	0.0	57-har/mil (◇)
290.00	18.9 ± 1.0	-2.3	80-hol/wat (■)	303.20	20.5 ± 1.0	-1.9	81-bel/dun (▲)
290.00	20.1 ± 0.6	-1.1	82-mar/tre (□)	310.00	20.4 ± 1.8	-2.5	92-bel/big (Δ)
290.00	20.0 ± 1.8	-1.2	92-bel/big (Δ)	313.50	20.6 ± 1.0	-2.6	81-bel/dun (▲)
292.90	20.6 ± 1.0	-0.8	81-bel/dun (▲)	320.00	20.6 ± 1.0	-3.1	81-bel/dun (▲)
296.20	20.8 ± 4.0	-0.9	86-eli/hoa (♦)	320.00	19.3 ± 0.6	-4.4	82-mar/tre (□)
298.20	-36.1 ± 3.0	-58.0	42-edw/ros [1]	323.20	28.8 ± 0.1	4.8	75-lin/rod (+)
300.00	19.6 ± 1.0	-2.5	80-hol/wat (■)	333.20	24.6 ± 3.0	-0.1	56-cot/ham-2(●)
300.00	20.4 ± 0.6	-1.7	82-mar/tre (□)	363.20	22.6 ± 6.8	-4.1	56-cot/ham-3(O)
300.00	20.6 ± 1.8	-1.5	92-bel/big (Δ)	373.20	28.1 ± 0.1	0.8	74-tsi/lin (✶)
303.20	18.9 ± 0.1	-3.5	55-pfe/gof (•)	423.20	28.2 ± 0.1	-1.6	74-tsi/lin-1(✶)
303.20	21.6 ± 3.4	-0.8	56-cot/ham-1(▲)				

[1] Not included in Figure 1.

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	0.500	133.6 ± 0.2	67-bre	300.00	0.500	75.1 ± 0.2	82-mar/tre
248.20	0.500	106.8 ± 0.2	67-bre	300.00	0.500	75.6 ± 1.0	92-bel/big
273.20	0.500	88.8 ± 0.2	67-bre	303.20	0.500	74.2 ± 0.3	81-bel/dun
290.00	0.500	79.8 ± 0.2	82-mar/tre	310.00	0.500	71.6 ± 1.0	92-bel/big
290.00	0.500	80.4 ± 1.0	92-bel/big	313.50	0.500	70.3 ± 0.3	81-bel/dun
292.90	0.500	78.8 ± 0.3	81-bel/dun	320.00	0.500	67.4 ± 0.3	81-bel/dun

Carbon dioxide [124-38-9] CO_2 MW = 44.01 142
Krypton [7439-90-9] Kr MW = 83.80

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	-120.3 ± 2.0	67-bre	300.00	-64.7 ± 5.0	92-bel/big
273.20	-82.2 ± 2.0	67-bre	310.00	-59.0 ± 5.0	92-bel/big
290.00	-71.5 ± 5.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	0.500	43.7 ± 0.2	67-bre	300.00	0.500	21.1 ± 1.0	92-bel/big
273.20	0.500	24.2 ± 0.2	67-bre	310.00	0.500	21.7 ± 1.0	92-bel/big
290.00	0.500	22.1 ± 1.0	92-bel/big				

Carbon dioxide	**[124-38-9]**	**CO_2**	**MW = 44.01**	**143**
Nitrogen	**[7727-37-9]**	**N_2**	**MW = 28.01**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 1.8683 \cdot 10 + 1.9172 \cdot 10^4/(T/\text{K}) - 2.0167 \cdot 10^7/(T/\text{K})^2 + 3.4250 \cdot 10^9/(T/\text{K})^3 - 2.1815 \cdot 10^{11}/(T/\text{K})^4$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
110	-390.4 ± 15	250	-64.0 ± 5	400	-14.4 ± 5
150	-165.9 ± 12	300	-41.6 ± 5		
200	-97.9 ± 10	350	-25.8 ± 5		

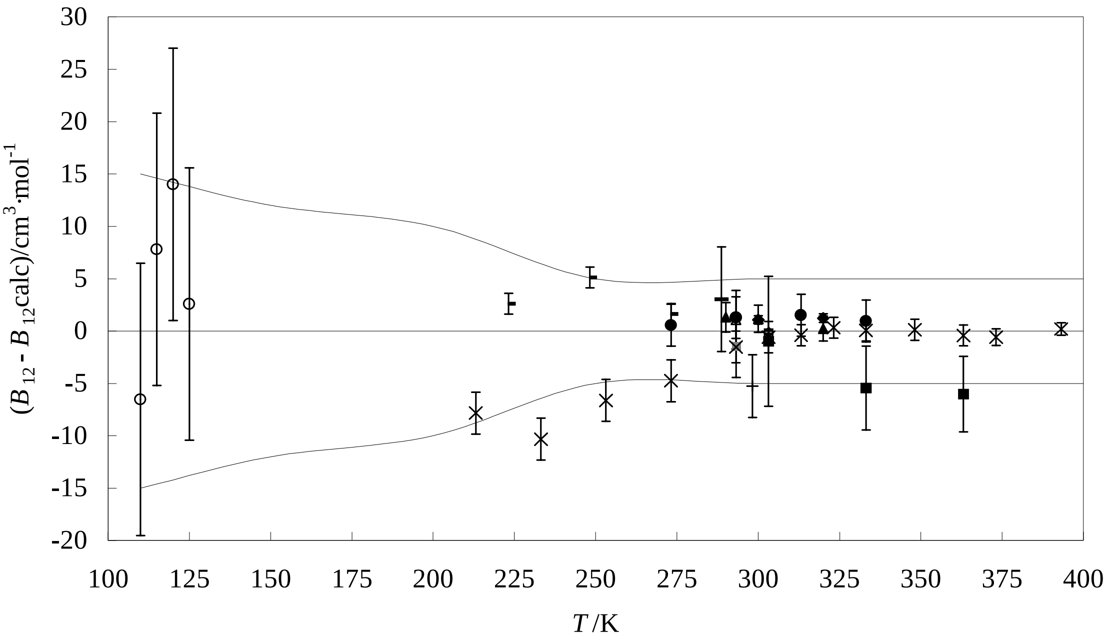

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
110.00	-397.0 ± 13.0	-6.5	77-yak/glu (○)	233.15	-84.0 ± 2.0	-10.3	71-ng (×)
115.00	-327.0 ± 13.0	7.8	77-yak/glu (○)	248.20	-59.8 ± 1.0	5.1	67-bre (-)
120.00	-278.0 ± 13.0	14.0	77-yak/glu (○)	253.15	-68.9 ± 2.0	-6.6	71-ng (×)
125.00	-256.0 ± 13.0	2.6	77-yak/glu (○)	273.15	-57.3 ± 2.0	-4.7	71-ng (×)
213.15	-95.1 ± 2.0	-7.8	71-ng (×)	273.15	-52.0 ± 2.0	0.6	88-jae/aud (●)
223.20	-77.5 ± 1.0	2.6	67-bre (-)	273.20	-50.9 ± 1.0	1.6	67-bre (-)

cont.

Carbon dioxide + Nitrogen (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
288.70	-42.9 ± 5.0	3.0	61-mas/eak (–)	313.15	-37.3 ± 1.0	-0.4	71-ng (×)
290.00	-44.1 ± 1.4	1.3	82-mar/tre (▲)	313.15	-35.4 ± 2.0	1.5	88-jae/aud (●)
293.15	-45.7 ± 1.5	-1.5	71-ng (×)	320.00	-34.4 ± 1.2	0.2	82-mar/tre (▲)
293.15	-42.9 ± 2.0	1.3	88-jae/aud (●)	320.00	-33.4 ± 0.4	1.2	89-bru/hwa (♦)
293.15	-43.1 ± 2.8	1.1	91-lop/roz (Δ)	323.15	-33.3 ± 1.0	0.3	71-ng (×)
293.20	-45.6 ± 3.0	-1.4	90-jia/wan (■)	333.15	-36.0 ± 4.0	-5.4	56-cot/ham (■)
298.20	-47.5 ± 3.0	-5.3	42-edw/ros (+)	333.15	-30.5 ± 1.0	0.1	71-ng (×)
300.00	-40.4 ± 1.3	1.2	82-mar/tre (▲)	333.15	-29.6 ± 2.0	1.0	88-jae/aud (●)
300.00	-40.5 ± 0.4	1.1	89-bru/hwa (♦)	348.15	-26.2 ± 1.0	0.1	71-ng (×)
303.15	-40.6 ± 0.2	-0.2	53-gor/mil (□)	363.15	-28.5 ± 3.6	-6.0	56-cot/ham (■)
303.15	-41.4 ± 6.2	-1.0	56-cot/ham (■)	363.15	-22.9 ± 1.0	-0.4	71-ng (×)
303.15	-41.0 ± 1.5	-0.6	71-ng (×)	373.15	-20.7 ± 0.8	-0.6	71-ng (×)
303.20	-40.5 ± 0.1	-0.1	55-pfe/gof (◊)	393.15	-15.6 ± 0.6	0.2	71-ng (×)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
220.00	0.497	-99.0 ± 0.5	89-esp/bai	320.00	0.000	-1.1 ± 0.1	89-bru/hwa
230.00	0.497	-90.3 ± 0.5	89-esp/bai	320.00	0.106	-8.5 ± 0.1	89-bru/hwa
240.00	0.497	-81.6 ± 0.5	89-esp/bai	320.00	0.252	-19.9 ± 0.1	89-bru/hwa
250.00	0.497	-73.8 ± 0.5	89-esp/bai	320.00	0.504	-43.6 ± 0.1	89-bru/hwa
260.00	0.497	-67.0 ± 0.5	89-esp/bai	320.00	0.909	-91.8 ± 0.1	89-bru/hwa
270.00	0.497	-60.8 ± 0.5	89-esp/bai	320.00	0.497	-37.7 ± 0.5	89-esp/bai
280.00	0.497	-55.3 ± 0.5	89-esp/bai	320.00	0.711	-66.7 ± 0.1	89-bru/hwa
290.00	0.497	-50.3 ± 0.0	89-esp/bai	323.00	0.750	-21.6 ± 2.0	88-hac/yoo
298.15	0.251	-26.9 ± 1.0	44-han//bli	323.15	0.251	-19.5 ± 1.0	44-han//bli
298.15	0.505	-55.0 ± 1.0	44-han//bli	323.15	0.505	-43.7 ± 1.0	44-han//bli
300.00	0.000	-4.5 ± 0.2	89-bru/hwa	348.00	0.750	-13.8 ± 1.5	88-hac/yoo
300.00	0.106	-12.6 ± 0.1	89-bru/hwa	348.15	0.251	-14.0 ± 1.0	44-han//bli
300.00	0.252	-25.6 ± 0.1	89-bru/hwa	348.15	0.505	-34.0 ± 1.0	44-han//bli
300.00	0.504	-52.1 ± 0.2	89-bru/hwa	373.15	0.251	-9.6 ± 1.0	44-han//bli
300.00	0.909	-107.1 ± 0.1	89-bru/hwa	373.15	0.505	-27.4 ± 1.0	44-han//bli
300.00	0.497	-45.7 ± 0.5	89-esp/bai	398.15	0.251	-5.9 ± 1.0	44-han//bli
300.00	0.711	-78.5 ± 0.1	89-bru/hwa	398.15	0.505	-20.3 ± 1.0	44-han//bli
310.00	0.497	-41.6 ± 0.5	89-esp/bai				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	0.500	52.2 ± 0.2	67-bre	290.00	0.500	24.2 ± 0.2	82-mar/tre
248.20	0.500	38.1 ± 0.2	67-bre	300.00	0.500	22.1 ± 0.2	82-mar/tre
273.20	0.500	29.4 ± 0.2	67-bre	320.00	0.500	19.3 ± 0.2	82-mar/tre

cont.

Carbon dioxide + Nitrogen (cont.)

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
230.00	0.497	3.1 ± 0.3	89-esp/bai	300.00	0.909	4.4 ± 0.6	89-bru/hwa
240.00	0.497	3.1 ± 0.3	89-esp/bai	300.00	0.497	2.4 ± 0.3	89-esp/bai
250.00	0.497	3.0 ± 0.3	89-esp/bai	310.00	0.497	2.3 ± 0.3	89-esp/bai
260.00	0.497	2.9 ± 0.3	89-esp/bai	320.00	0.000	1.4 ± 0.2	89-bru/hwa
270.00	0.497	2.8 ± 0.3	89-esp/bai	320.00	0.106	1.6 ± 0.2	89-bru/hwa
280.00	0.497	2.7 ± 0.3	89-esp/bai	320.00	0.252	1.8 ± 0.3	89-bru/hwa
290.00	0.497	2.6 ± 0.3	89-esp/bai	320.00	0.504	2.4 ± 0.4	89-bru/hwa
300.00	0.000	1.4 ± 0.2	89-bru/hwa	320.00	0.711	3.1 ± 0.5	89-bru/hwa
300.00	0.106	1.6 ± 0.2	89-bru/hwa	320.00	0.909	3.9 ± 0.5	89-bru/hwa
300.00	0.252	2.0 ± 0.3	89-bru/hwa	320.00	0.497	2.2 ± 0.3	89-esp/bai
300.00	0.508	2.6 ± 0.4	89-bru/hwa	323.00	0.750	2.1 ± 0.5	88-hac/yoo
300.00	0.711	3.4 ± 0.5	89-bru/hwa	348.00	0.750	2.1 ± 0.5	88-hac/yoo

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	3.4 ± 0.3	88-jae/aud	310.00	2.6 ± 0.1	89-bru/hwa
293.15	3.2 ± 0.3	88-jae/aud	313.15	2.9 ± 0.3	88-jae/aud
300.00	2.8 ± 0.1	89-bru/hwa	333.15	2.7 ± 0.3	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	2.1 ± 0.2	88-jae/aud	313.15	1.8 ± 0.2	88-jae/aud
293.15	1.9 ± 0.2	88-jae/aud	320.00	1.9 ± 0.1	89-bru/hwa
300.00	2.0 ± 0.1	89-bru/hwa	333.15	1.7 ± 0.2	88-jae/aud

Carbon dioxide [124-38-9] CO_2 MW = 44.01 144
Neon [7440-01-9] Ne MW = 20.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	3.82 ± 1.0	67-bre	290.00	6.80 ± 2.0	92-bel/big
248.20	8.02 ± 1.0	67-bre	300.00	8.00 ± 2.0	92-bel/big
273.20	6.25 ± 1.0	67-bre	310.00	8.60 ± 2.0	92-bel/big

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	0.500	115.8 ± 0.2	67-bre	290.00	0.500	67.6 ± 1.0	92-bel/big
248.20	0.500	91.9 ± 0.2	67-bre	300.00	0.500	63.1 ± 1.0	92-bel/big
273.20	0.500	75.8 ± 0.2	67-bre	310.00	0.500	59.8 ± 1.0	92-bel/big

Carbon dioxide [124-38-9] CO_2 MW = 44.01 145
Oxygen [7782-44-7] O_2 MW = 32.00

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-44.8 ± 1.4	82-mar/tre	303.15	-36.8 ± 5.2	56-cot/ham
298.20	-56.4 ± 3.0	42-edw/ros	320.00	-35.0 ± 1.3	82-mar/tre
300.00	-40.8 ± 1.3	82-mar/tre	333.15	-28.4 ± 5.6	56-cot/ham
303.15	-41.5 ± 0.3	53-gor/mil	363.15	-25.6 ± 4.4	56-cot/ham

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	29.40 ± 0.2	82-mar/tre	310.00	0.500	23.90 ± 0.2	82-mar/tre
320.00	0.500	27.50 ± 0.2	82-mar/tre				

Carbon dioxide [124-38-9] CO_2 MW = 44.01 146
Xenon [7440-63-3] Xe MW = 131.29

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
223.20	-185.1 ± 2.0	67-bre	300.00	-102.2 ± 10.0	92-bel/big
273.20	-124.7 ± 2.0	67-bre	310.00	-93.6 ± 9.0	92-bel/big
290.00	-113.5 ± 10.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.30	0.500	44.8 ± 0.2	67-bre	300.00	0.500	25.0 ± 1.0	92-bel/big
273.20	0.500	27.4 ± 0.2	67-bre	310.00	0.500	25.0 ± 1.0	92-bel/big
290.00	0.500	24.0 ± 1.0	92-bel/big				

Carbon dioxide [124-38-9] CO_2 MW = 44.01 147
Tetrachloromethane [56-23-5] CCl_4 MW = 153.82

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-287 ± 7	72-gup/kin	348.15	-163 ± 9	59-pra/ben
323.15	-205 ± 8	59-pra/ben	348.20	-185 ± 7	72-gup/kin
323.20	-213 ± 5	72-gup/kin	353.20	-154 ± 70	71-vig/sem-1

Carbon dioxide [124-38-9] CO_2 MW = 44.01 148
Tetrafluoromethane [75-73-0] CF_4 MW = 88.00

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-95.6 ± 3.4	86-dun/big	320.00	-73.5 ± 2.7	86-dun/big
300.00	-85.2 ± 3.1	86-dun/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	19.8 ± 0.4	86-dun/big	320.00	0.500	15.6 ± 0.4	86-dun/big
300.00	0.500	18.6 ± 0.4	86-dun/big				

Carbon dioxide [124-38-9] CO_2 MW = 44.01 149
Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.20	-228.5 ± 10.0	90-jia/wan			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 150
Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-316 ± 15	73-gup/les	353.20	-169 ± 70	71-vig/sem-1

Carbon dioxide [124-38-9] CO_2 MW = 44.01 151
Nitromethane [75-52-5] CH_3NO_2 MW = 61.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-188 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 152
Methane [74-82-8] CH_4 MW = 16.04

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 1.6073 \cdot 10^2 - 1.3829 \cdot 10^5/(T/\text{K}) + 3.5911 \cdot 10^7/(T/\text{K})^2 - 4.3948 \cdot 10^9/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
220	-138.7 ± 15	300	-64.0 ± 5	400	-29.3 ± 3
250	-99.2 ± 7	350	-43.8 ± 4		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
213.15	-136.7 ± 2.0	14.8	71-ng (Δ)	303.38	-65.8 ± 3.3	-3.5	90-mce/kee (□)
233.15	-114.9 ± 2.0	3.6	71-ng (Δ)	313.15	-57.3 ± 1.5	0.5	71-ng (Δ)
253.15	-97.5 ± 1.5	-1.4	71-ng (Δ)	313.15	-57.2 ± 2.0	0.6	88-jae/aud (-)
273.15	-81.2 ± 1.5	-1.3	71-ng (Δ)	313.30	-61.2 ± 3.2	-3.5	90-mce/kee (□)
273.15	-78.1 ± 2.0	1.8	88-jae/aud (-)	313.34	-58.0 ± 3.2	-0.3	90-mce/kee (□)
273.20	-77.6 ± 1.0	2.2	67-bre (■)	320.00	-55.2 ± 1.5	-0.3	82-mar/tre (×)
288.70	-62.9 ± 5.0	7.2	61-mas/eak (♦)	320.00	-55.2 ± 1.6	-0.3	87-mar/tre (–)
290.00	-68.6 ± 1.7	0.7	82-mar/tre (×)	320.00	-54.1 ± 0.5	0.8	89-bru/hwa (◊)
290.00	-68.6 ± 1.7	0.7	87-mar/tre (–)	323.15	-55.7 ± 3.1	-2.1	90-mce/kee (□)
293.15	-67.3 ± 1.5	0.3	71-ng (Δ)	333.15	-48.5 ± 1.0	1.2	71-ng (Δ)
293.15	-67.0 ± 2.0	0.6	88-jae/aud (-)	333.15	-48.6 ± 2.0	1.1	88-jae/aud (-)
298.15	-64.8 ± 0.8	0.1	80-kat/ohg (○)	353.15	-43.2 ± 1.0	-0.5	71-ng (Δ)
300.00	-63.2 ± 1.6	0.8	82-mar/tre (×)	373.15	-36.6 ± 0.9	0.0	71-ng (Δ)
300.00	-63.2 ± 1.6	0.8	87-mar/tre (–)	393.15	-33.3 ± 0.8	-2.3	71-ng (Δ)
300.00	-63.2 ± 0.5	0.8	89-bru/hwa (◊)	398.15	-29.5 ± 0.2	0.2	82-ohg/nak-1 (●)
303.33	-64.4 ± 3.3	-2.1	90-mce/kee (□)				

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / cm$^3\cdot$ mol^{-1}	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / cm$^3\cdot$ mol^{-1}	Ref.
230.00	0.476	-128.5 ± 0.5	89-esp/bai	320.00	0.476	-60.1 ± 0.5	89-esp/bai
240.00	0.476	-116.8 ± 0.5	89-esp/bai	320.00	0.000	-35.0 ± 0.1	89-bru/hwa
250.00	0.476	-107.5 ± 0.5	89-esp/bai	320.00	0.100	-39.2 ± 0.1	89-bru/hwa
260.00	0.476	-98.2 ± 0.5	89-esp/bai	320.00	0.299	-49.2 ± 0.1	89-bru/hwa
270.00	0.476	-90.2 ± 0.5	89-esp/bai	320.00	0.676	-75.2 ± 0.1	89-bru/hwa
280.00	0.476	-82.9 ± 0.5	89-esp/bai	320.00	0.901	-94.7 ± 0.1	89-bru/hwa
290.00	0.476	-76.3 ± 0.5	89-esp/bai	323.15	0.000	-34.5 ± 0.3	90-mal/vis
300.00	0.476	-70.5 ± 0.5	89-esp/bai	323.15	0.482	-60.6 ± 0.7	90-mal/vis
300.00	0.000	-42.0 ± 0.1	89-bru/hwa	348.15	0.000	-27.0 ± 0.3	90-mal/vis
300.00	0.100	-46.9 ± 0.1	89-bru/hwa	348.15	0.482	-48.4 ± 0.5	90-mal/vis
300.00	0.299	-58.0 ± 0.1	89-bru/hwa	373.15	0.000	-21.4 ± 0.3	90-mal/vis
300.00	0.676	-87.7 ± 0.0	89-bru/hwa	373.15	0.482	-39.2 ± 0.2	90-mal/vis
300.00	0.901	-110.5 ± 0.1	89-bru/hwa	398.15	0.000	-15.9 ± 0.2	90-mal/vis
310.00	0.476	-65.1 ± 0.5	89-esp/bai	398.15	0.482	-32.1 ± 0.4	90-mal/vis

cont.

Carbon dioxide + Methane (cont.)

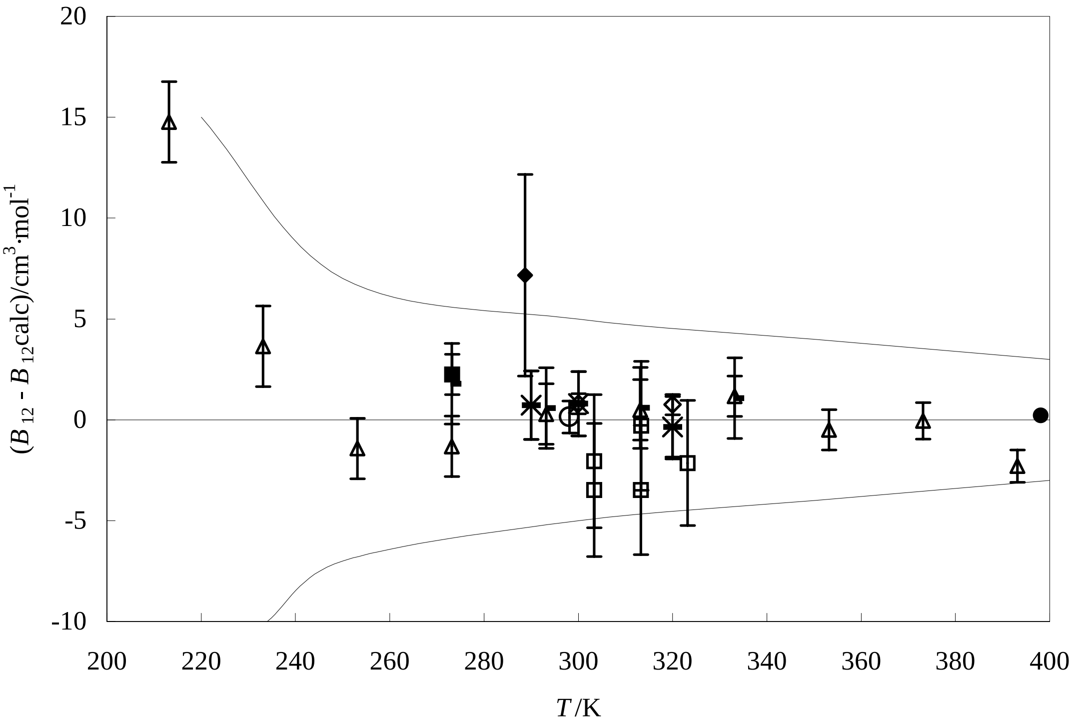

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	0.500	24.1 ± 0.2	67-bre	300.00	0.500	18.3 ± 1.5	87-mar/tre
290.00	0.500	20.1 ± 1.5	87-mar/tre	320.00	0.500	15.2 ± 1.4	87-mar/tre

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
250.00	0.476	4.3 ± 0.3	89-esp/bai	300.00	0.676	3.8 ± 0.1	89-bru/hwa
260.00	0.476	4.1 ± 0.3	89-esp/bai	300.00	0.901	4.6 ± 0.2	89-bru/hwa
270.00	0.476	3.9 ± 0.3	89-esp/bai	310.00	0.476	3.1 ± 0.3	89-esp/bai
280.00	0.476	3.6 ± 0.3	89-esp/bai	320.00	0.476	2.9 ± 0.3	89-esp/bai
290.00	0.476	3.4 ± 0.3	89-esp/bai	320.00	0.000	2.2 ± 0.0	89-bru/hwa
300.00	0.476	3.2 ± 0.3	89-esp/bai	320.00	0.100	2.4 ± 0.0	89-bru/hwa
300.00	0.000	2.4 ± 0.0	89-bru/hwa	320.00	0.299	2.6 ± 0.1	89-bru/hwa
300.00	0.100	2.6 ± 0.0	89-bru/hwa	320.00	0.676	3.4 ± 0.1	89-bru/hwa
300.00	0.299	2.9 ± 0.1	89-bru/hwa	320.00	0.901	4.0 ± 0.2	89-bru/hwa

cont.

Carbon dioxide + Methane (cont.)

Table 5. (cont.)

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
323.15	0.000	3.0 ± 0.1	90-mal/vis	373.15	0.000	2.5 ± 0.1	90-mal/vis
323.15	0.482	4.1 ± 0.1	90-mal/vis	373.15	0.482	3.0 ± 0.1	90-mal/vis
348.15	0.000	2.7 ± 0.1	90-mal/vis	398.15	0.000	2.4 ± 0.1	90-mal/vis
348.15	0.482	3.0 ± 0.0	90-mal/vis	398.15	0.482	2.7 ± 0.1	90-mal/vis

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	4.2 ± 0.4	88-jae/aud	313.15	3.5 ± 0.4	88-jae/aud
293.15	3.9 ± 0.4	88-jae/aud	320.00	3.2 ± 0.1	89-bru/hwa
300.00	3.6 ± 0.1	89-bru/hwa	333.15	3.2 ± 0.4	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	3.3 ± 0.2	88-jae/aud	313.15	2.7 ± 0.2	88-jae/aud
293.15	3.0 ± 0.2	88-jae/aud	320.00	2.7 ± 0.1	89-bru/hwa
300.00	2.9 ± 0.1	89-bru/hwa	333.15	2.5 ± 0.2	88-jae/aud

Carbon dioxide [124-38-9] CO_2 MW = 44.01 153
Methanol [67-56-1] CH_4O MW = 32.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
241.80	-942.0 ± 70.0	93-sch/lan	298.15	-308.0 ± 5.0	72-hem/kin
262.00	-564.0 ± 50.0	93-sch/lan	310.15	-265.0 ± 8.0	72-hem/kin
263.20	-584.0 ± 31.0	80-laz/bre	313.20	-236.0 ± 20.0	66-sie/van
273.20	-465.0 ± 16.0	80-laz/bre	323.15	-237.0 ± 3.0	72-hem/kin
282.90	-361.0 ± 40.0	93-sch/lan	333.15	-217.0 ± 7.0	72-hem/kin
288.15	-352.0 ± 7.0	72-hem/kin			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 154
Ethene [74-85-1] C_2H_4 MW = 28.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-125.2 ± 3.0	42-edw/ros	373.20	-71.4 ± 1.4	67-sas/dod
298.15	-122.4 ± 1.2	81-ohg/miz	398.15	-60.7 ± 0.3	82-ohg/nak-1
348.20	-77.1 ± 1.5	67-sas/dod	398.20	-64.0 ± 1.3	67-sas/dod
373.20	-93.0 ± 4.7	67-ku/dod			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 155
1,1-Dichloroethane [75-34-3] $C_2H_4Cl_2$ MW = 98.96

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-215 ± 20	66-sie/van			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 156
Nitroethane [79-24-3] $C_2H_5NO_2$ MW = 75.07

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-247 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 157
Ethane [74-84-0] C_2H_6 MW = 30.07

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -2.8002 \cdot 10^3 + 2.4580 \cdot 10^6/(T/K) - 7.2439 \cdot 10^8/(T/K)^2 + 6.8408 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
250	-180.3 ± 8	300	-122.0 ± 5	350	-95.2 ± 5

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
250.00	-181.0 ± 1.2	-0.7	82-hol/you (Δ)	303.49	-123.6 ± 4.5	-5.0	90-mce/kee (×)
260.00	-167.0 ± 1.2	3.1	82-hol/you (Δ)	313.15	-111.4 ± 2.0	-1.1	88-jae/aud (○)
270.00	-154.4 ± 1.2	3.4	82-hol/you (Δ)	313.20	-112.8 ± 16.0	-2.6	87-jae (□)
273.15	-151.3 ± 2.0	2.5	88-jae/aud (○)	313.24	-112.7 ± 4.2	-2.5	90-mce/kee (×)
273.20	-150.6 ± 20.0	3.1	87-jae (□)	313.25	-115.8 ± 4.3	-5.6	90-mce/kee (×)
280.00	-142.9 ± 1.2	2.1	82-hol/you (Δ)	320.00	-105.7 ± 0.3	-0.3	89-bru/hwa (◊)
288.70	-124.2 ± 5.0	10.2	61-mas/eak (♦)	320.00	-105.4 ± 0.2	0.0	92-web (●)
290.00	-132.5 ± 1.2	0.4	82-hol/you (Δ)	320.00	-105.1 ± 0.2	0.3	92-web (●)
293.15	-128.1 ± 2.0	1.2	88-jae/aud (○)	323.15	-106.4 ± 4.1	-2.9	90-mce/kee (×)
293.20	-130.1 ± 18.0	-0.8	87-jae (□)	323.16	-107.2 ± 4.1	-3.7	90-mce/kee (×)
298.15	-121.8 ± 1.4	2.1	80-kat/ohg (■)	333.15	-101.2 ± 2.0	-2.4	88-jae/aud (○)
300.00	-122.9 ± 1.2	-0.9	82-hol/you (Δ)	333.20	-98.6 ± 15.0	0.1	87-jae (□)
300.00	-122.5 ± 0.4	-0.5	89-bru/hwa (◊)	353.20	-87.7 ± 14.0	7.4	87-jae (□)

cont.

Carbon dioxide + Ethane (cont.)

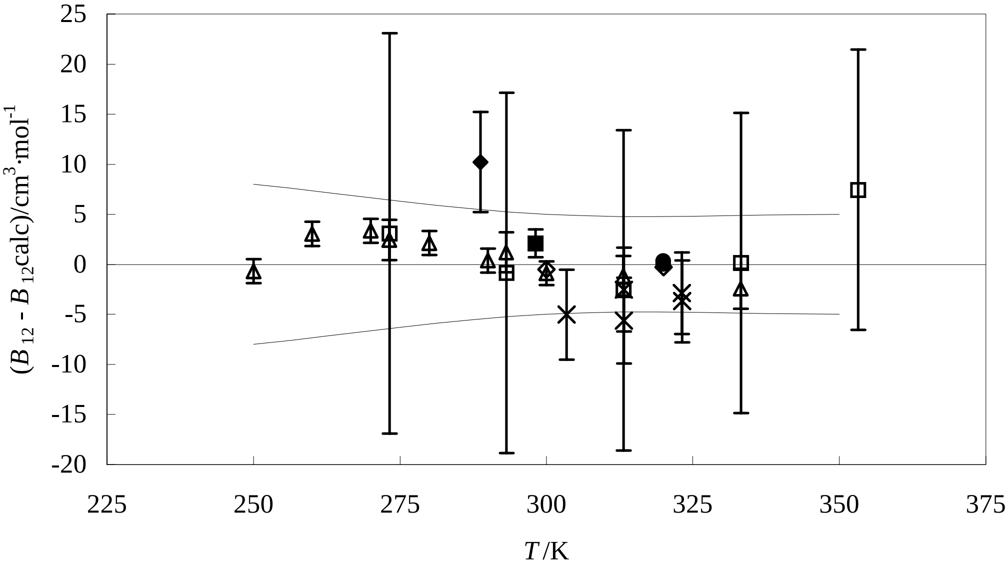

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
300.00	0.100	-171.5 ± 0.2	89-bru/hwa	320.00	0.904	-104.8 ± 0.1	89-bru/hwa
300.00	0.252	-156.7 ± 0.1	89-bru/hwa	320.00	0.000	-159.3 ± 0.2	92-web
300.00	0.493	-137.5 ± 0.2	89-bru/hwa	320.00	0.252	-135.7 ± 0.2	92-web
300.00	0.740	-126.1 ± 0.5	89-bru/hwa	320.00	0.493	-118.9 ± 0.1	92-web
300.00	0.904	-121.8 ± 0.1	89-bru/hwa	320.00	0.740	-108.5 ± 0.2	92-web
320.00	0.100	-149.4 ± 0.6	89-bru/hwa	320.00	1.000	-104.5 ± 0.1	92-web
320.00	0.252	-135.6 ± 0.2	89-bru/hwa	320.00	0.000	-159.3 ± 0.2	92-web
320.00	0.493	-119.3 ± 0.2	89-bru/hwa	320.00	0.252	-135.5 ± 0.2	92-web
320.00	0.740	-108.7 ± 0.1	89-bru/hwa	320.00	0.493	-119.0 ± 0.1	92-web

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
300.00	0.100	10.0 ± 0.5	89-bru/hwa	300.00	0.490	7.4 ± 0.4	89-ngu/igl
300.00	0.252	8.8 ± 0.4	89-bru/hwa	300.00	0.740	5.9 ± 0.3	89-ngu/igl
300.00	0.493	7.1 ± 0.4	89-bru/hwa	300.00	0.900	5.1 ± 0.3	89-ngu/igl
300.00	0.740	5.9 ± 0.3	89-bru/hwa	300.00	1.000	4.7 ± 0.2	89-ngu/igl
300.00	0.904	5.2 ± 0.3	89-bru/hwa	300.00	0.000	11.1 ± 0.5	89-ngu/igl
300.00	0.000	11.1 ± 0.5	89-ngu/igl	300.00	0.100	10.1 ± 0.5	89-ngu/igl
300.00	0.100	10.3 ± 0.4	89-ngu/igl	300.00	0.250	8.9 ± 0.4	89-ngu/igl
300.00	0.250	9.1 ± 0.4	89-ngu/igl	300.00	0.490	7.2 ± 0.4	89-ngu/igl

cont.

Carbon dioxide + Ethane (cont.)

Table 5. (cont.)

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
300.00	0.740	5.8	±	0.3	89-ngu/igl	320.00	1.000	4.3	±	0.2	89-ngu/igl
300.00	0.900	5.1	±	0.3	89-ngu/igl	320.00	0.100	9.1	±	0.5	89-bru/hwa
300.00	1.000	4.7	±	0.2	89-ngu/igl	320.00	0.252	7.8	±	0.4	89-bru/hwa
320.00	0.000	10.1	±	0.5	89-ngu/igl	320.00	0.493	6.3	±	0.3	89-bru/hwa
320.00	0.100	9.4	±	0.5	89-ngu/igl	320.00	0.740	5.2	±	0.3	89-bru/hwa
320.00	0.250	8.3	±	0.4	89-ngu/igl	320.00	0.904	4.6	±	0.2	89-bru/hwa
320.00	0.490	6.8	±	0.3	89-ngu/igl	320.00	0.493	6.3	±	0.0	92-web
320.00	0.740	5.4	±	0.3	89-ngu/igl	320.00	0.740	5.2	±	0.1	92-web
320.00	0.900	4.7	±	0.2	89-ngu/igl	320.00	1.000	4.4	±	0.0	92-web
320.00	1.000	4.3	±	0.2	89-ngu/igl	320.00	0.000	9.7	±	0.1	92-web
320.00	0.000	10.1	±	0.5	89-ngu/igl	320.00	0.000	9.6	±	0.1	92-web
320.00	0.100	9.3	±	0.5	89-ngu/igl	320.00	0.252	7.8	±	0.1	92-web
320.00	0.250	8.1	±	0.4	89-ngu/igl	320.00	0.252	7.8	±	0.1	92-web
320.00	0.490	6.6	±	0.3	89-ngu/igl	320.00	0.493	6.3	±	0.0	92-web
320.00	0.740	5.3	±	0.3	89-ngu/igl	320.00	0.740	5.1	±	0.1	92-web
320.00	0.900	4.7	±	0.2	89-ngu/igl	320.00	1.000	4.4	±	0.0	92-web

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
273.15	7.5	±	0.7	88-jae/aud	320.00	4.9	±	0.2	89-bru/hwa
293.15	5.9	±	0.6	88-jae/aud	320.00	7.0	±	0.2	92-web
300.00	5.5	±	0.2	89-bru/hwa	333.15	6.4	±	0.6	88-jae/aud
313.15	5.5	±	0.6	88-jae/aud					

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
273.15	9.3	±	0.9	88-jae/aud	320.00	7.2	±	0.2	89-bru/hwa
293.15	7.8	±	0.8	88-jae/aud	320.00	5.0	±	0.2	92-web
300.00	8.3	±	0.3	89-bru/hwa	333.15	8.0	±	0.8	88-jae/aud
313.15	7.4	±	0.7	88-jae/aud					

Carbon dioxide [124-38-9] CO_2 MW = 44.01 158
Ethanol [64-17-5] C_2H_6O MW = 46.07

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
298.15	-307	±	6	73-gup/les	348.15	-196	±	3	73-gup/les
313.20	-303	±	20	66-sie/van	353.20	-95	±	70	71-vig/sem-1
323.15	-238	±	3	73-gup/les					

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **159**
Propene **[115-07-1]** **C_3H_6** **MW = 42.08**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-175.9 ± 1.4	81-ohg/miz	398.15	-94.8 ± 0.5	82-ohg/nak-1

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **160**
Propanone **[67-64-1]** **C_3H_6O** **MW = 58.08**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
260.15	-966 ± 130	81-hic/pra	313.20	-342 ± 20	66-sie/van
283.15	-531 ± 65	81-hic/pra	353.20	-129 ± 70	71-vig/sem-1

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **161**
Propane **[74-98-6]** **C_3H_8** **MW = 44.10**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-224.4 ± 20.0	88-jae/aud	313.20	-99.0 ± 20.0	66-sie/van
288.70	-183.1 ± 5.0	61-mas/eak	313.24	-161.8 ± 5.2	90-mce/kee
293.15	-192.2 ± 18.0	88-jae/aud	313.25	-162.9 ± 5.3	90-mce/kee
300.50	-159.3 ± 6.4	76-bou/jad	313.28	-159.0 ± 5.2	90-mce/kee
303.26	-168.9 ± 5.4	90-mce/kee	323.15	-151.8 ± 5.0	90-mce/kee
303.33	-168.2 ± 5.4	90-mce/kee	323.18	-152.2 ± 5.0	90-mce/kee
313.07	-157.8 ± 5.2	90-mce/kee	333.15	-145.6 ± 14.0	88-jae/aud
313.15	-165.9 ± 16.0	88-jae/aud			

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	6.7 ± 0.8	88-jae/aud	313.15	7.7 ± 0.8	88-jae/aud
293.15	7.5 ± 0.8	88-jae/aud	333.15	7.4 ± 0.8	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	8.4 ± 0.8	88-jae/aud	313.15	12.5 ± 1.3	88-jae/aud
293.15	11.0 ± 1.1	88-jae/aud	333.15	12.7 ± 1.3	88-jae/aud

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **162**
2-Propanol **[67-63-0]** **C_3H_8O** **MW = 60.10**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-127 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **163**
1,3-Butadiene **[106-99-0]** **C_4H_6** **MW = 54.09**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-155 ± 20	66-sie/van			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **164**
Butanone **[78-93-3]** **C_4H_8O** **MW = 72.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-184 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **165**
1,4-Dioxane **[123-91-1]** **$C_4H_8O_2$** **MW = 88.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-136 ± 30	71-vig/sem-1	403.20	-254 ± 30	99-wor/joh
373.20	-301 ± 30	99-wor/joh	413.20	-236 ± 30	99-wor/joh
383.20	-278 ± 30	99-wor/joh	423.20	-229 ± 30	99-wor/joh
393.20	-269 ± 30	99-wor/joh	433.20	-218 ± 30	99-wor/joh

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **166**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-279.6 ± 8.0	88-jae/aud	313.15	-201.1 ± 6.0	88-jae/aud
288.70	-232.8 ± 5.0	61-mas/eak	313.20	-153.0 ± 20.0	66-sie/van
293.15	-235.4 ± 7.0	88-jae/aud	333.15	-176.8 ± 5.0	88-jae/aud

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **167**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-491 ± 23	73-mas/kin			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **168**
1-Butanol **[71-36-3]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-414 ± 14	73-mas/kin			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **169**
Pyridine **[110-86-1]** **C_5H_5N** **MW = 79.10**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-207 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **170**
Cyclopentane **[287-92-3]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-197 ± 30	62-des/gol			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **171**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-322.8 ± 10.0	88-jae/aud	313.15	-226.5 ± 7.0	88-jae/aud
293.15	-269.8 ± 8.0	88-jae/aud	313.20	-198.0 ± 20.0	66-sie/van
298.15	-273.0 ± 23.0	73-mas/kin	333.15	-192.9 ± 6.0	88-jae/aud
298.20	-173.0 ± 30.0	62-des/gol	353.20	-76.0 ± 70.0	71-vig/sem-1

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **172**
2-Methylbutane **[78-78-4]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-163 ± 30	62-des/gol			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **173**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.7625 \cdot 10 - 8.5149 \cdot 10^4/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-301.5 ± 50	400	-230.5 ± 20	500	-187.9 ± 15
350	-260.9 ± 35	450	-206.8 ± 15	575	-165.7 ± 20

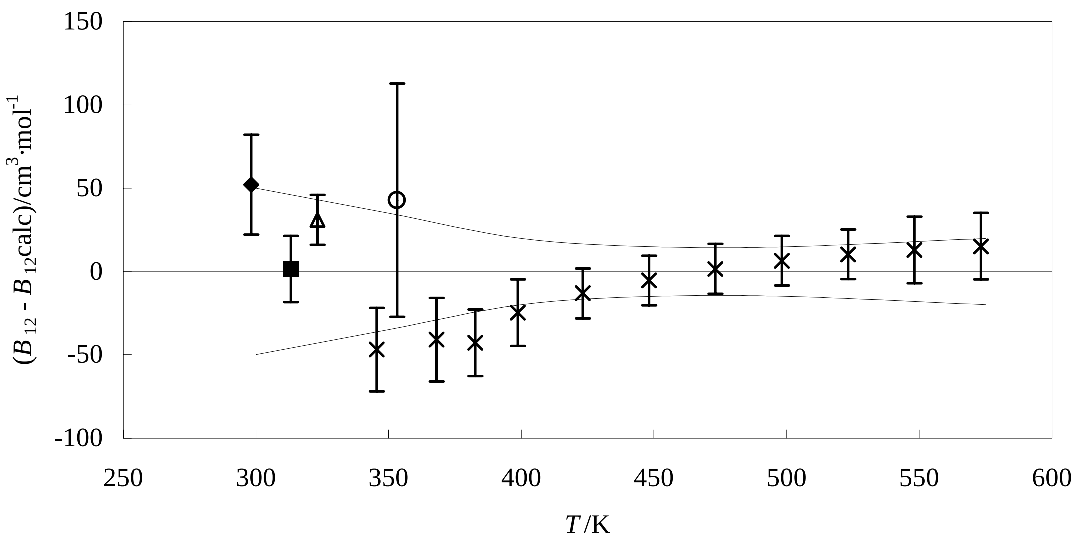

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Carbon dioxide + Benzene (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.20	-251 ± 30	52.2	62-des/gol (♦)	423.20	-232 ± 15	-13.2	92-wor/hod (×)
313.20	-288 ± 20	1.5	66-sie/van (■)	448.20	-213 ± 15	-5.4	92-wor/hod (×)
323.20	-250 ± 15	31.1	68-cru/gai (Δ)	473.20	-196 ± 15	1.6	92-wor/hod (×)
345.50	-311 ± 25	-46.9	92-wor/hod (×)	498.20	-182 ± 15	6.5	92-wor/hod (×)
353.20	-216 ± 70	42.7	71-vig/sem-1 (○)	523.20	-170 ± 15	10.4	92-wor/hod (×)
368.00	-290 ± 25	-41.0	92-wor/hod (×)	548.20	-160 ± 20	12.9	92-wor/hod (×)
382.60	-283 ± 20	-42.8	92-wor/hod (×)	573.20	-151 ± 20	15.2	92-wor/hod (×)
398.60	-256 ± 20	-24.8	92-wor/hod (×)				

Carbon dioxide **[124-38-9]** CO_2 **MW = 44.01** **174**
Cyclohexane **[110-82-7]** C_6H_{12} **MW = 84.16**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.9488 \cdot 10^2 + 3.9274 \cdot 10^5/(T/K) - 2.4825 \cdot 10^8/(T/K)^2 + 3.8182 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-230.0 ± 30	400	-168.0 ± 20	500	-97.0 ± 20
350	-208.8 ± 20	450	-129.1 ± 20	550	-72.0 ± 20

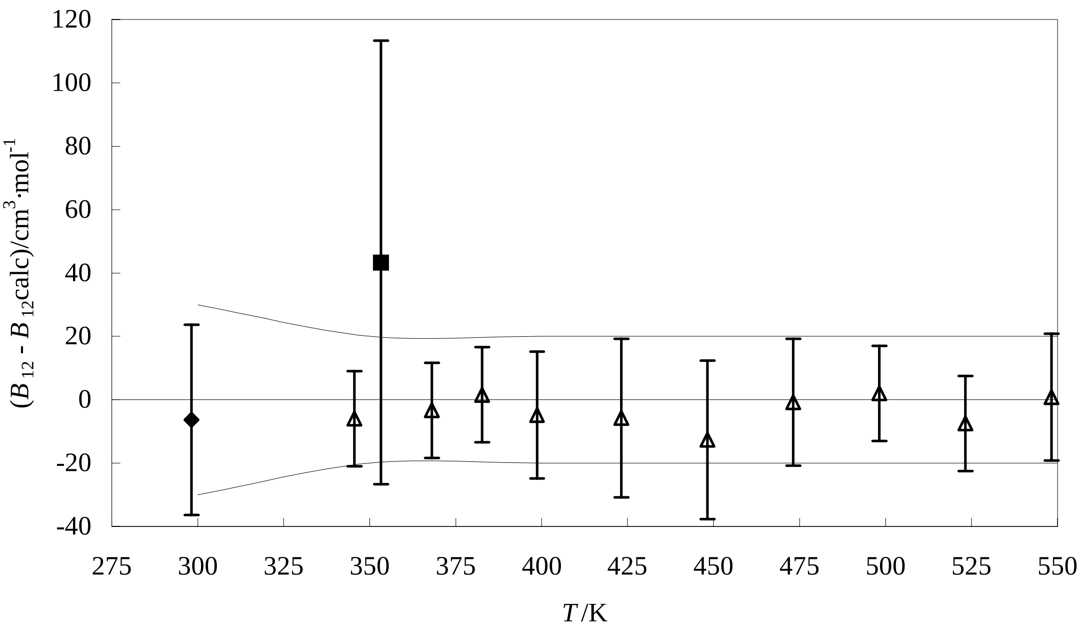

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.) cont.

Carbon dioxide + Cyclohexane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.20	-236 ± 30	-6.3	62-des/gol (♦)	423.20	-155 ± 25	-5.8	92-wor/hod (Δ)
345.50	-218 ± 15	-6.0	92-wor/hod (Δ)	448.20	-143 ± 25	-12.7	92-wor/hod (Δ)
353.20	-163 ± 70	43.4	71-vig/sem-1(■)	473.20	-114 ± 20	-0.8	92-wor/hod (Δ)
368.00	-198 ± 15	-3.4	92-wor/hod (Δ)	498.20	-96 ± 15	2.0	92-wor/hod (Δ)
382.60	-181 ± 15	1.5	92-wor/hod (Δ)	523.20	-92 ± 15	-7.5	92-wor/hod (Δ)
398.60	-174 ± 20	-4.8	92-wor/hod (Δ)	548.20	-72 ± 20	0.8	92-wor/hod (Δ)

Carbon dioxide [124-38-9] CO_2 MW = 44.01 175
Methylcyclopentane [96-37-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-234 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 176
Butyl ethanoate [123-86-4] $C_6H_{12}O_2$ MW = 116.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-260 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 177
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-233 ± 30	62-des/gol	353.2	-147 ± 70	71-vig/sem-1

Carbon dioxide [124-38-9] CO_2 MW = 44.01 178
2-Methylpentane [107-83-5] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-206 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 179
3-Methylpentane [96-14-0] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-211 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 180
2,2-Dimethylbutane [75-83-2] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-168 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 181
2,3-Dimethylbutane [79-29-8] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-203 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 182
Diisopropyl ether [108-20-3] $C_6H_{14}O$ MW = 102.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
258.15	-903 ± 240	81-hic/pra	298.15	-402 ± 54	81-hic/pra
273.15	-610 ± 160	81-hic/pra	323.15	-223 ± 75	81-hic/pra

Carbon dioxide [124-38-9] CO_2 MW = 44.01 183
2-Methyl-1-pentanol [105-30-6] $C_6H_{14}O$ MW = 102.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-338.9 ± 20	94-lee/che	403.15	-249.7 ± 15	94-lee/che

Carbon dioxide [124-38-9] CO_2 MW = 44.01 184
Toluene [108-88-3] C_7H_8 MW = 92.14

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
241.80	-655 ± 50	93-sch/lan	348.15	-215 ± 9	59-pra/ben
262.00	-529 ± 40	93-sch/lan	353.20	-248 ± 70	71-vig/sem
282.90	-475 ± 30	93-sch/lan	353.20	-235 ± 70	71-vig/sem-1
323.15	-254 ± 8	59-pra/ben			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 185
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-294 ± 30	62-des/gol	353.20	-177 ± 70	71-vig/sem-1

Carbon dioxide [124-38-9] CO_2 MW = 44.01 186
2-Methylhexane [591-76-4] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-272 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 187
3-Methylhexane [589-34-4] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-276 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 188
2,2-Dimethylpentane [590-35-2] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-245 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 189
2,3-Dimethylpentane [565-59-3] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-264 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 190
2,4-Dimethylpentane [108-08-7] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-242 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 191
3,3-Dimethylpentane [562-49-2] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-249 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 192
3-Ethylpentane [617-78-7] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-292 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 193
2,2,3-Trimethylbutane [464-06-2] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-222 ± 30	62-des/gol			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 194
Styrene [100-42-5] C_8H_8 MW = 104.15

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-300 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 195
Ethylbenzene [100-41-4] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-271 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 196
1,2-Dimethylbenzene [95-47-6] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-289 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 197
1,3-Dimethylbenzene [108-38-3] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-282 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 198
1,4-Dimethylbenzene [106-42-3] C_8H_{10} MW = 106.17

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-284 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 199
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-227 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 200
2,2,4-Trimethylpentane [540-84-1] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-303 ± 8	59-pra/ben	353.20	-147 ± 70	71-vig/sem-1
348.15	-252 ± 9	59-pra/ben			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 201
1-Octanol [111-87-5] $C_8H_{18}O$ MW = 130.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-468.7 ± 35.0	94-lee/che	453.15	-211.0 ± 10.0	94-lee/che
403.15	-309.6 ± 15.0	94-lee/che			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 202
Propylbenzene [103-65-1] C_9H_{12} MW = 120.19

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-292 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 203
1-Methylethylbenzene [98-82-8] C_9H_{12} MW = 120.19

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-286 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 204
1-Ethyl-2-methylbenzene [611-14-3] C_9H_{12} MW = 120.19

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-310 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 205
1-Ethyl-3-methylbenzene [620-14-4] C_9H_{12} MW = 120.19

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-309 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 206
1,2,3-Trimethylbenzene [526-73-8] C_9H_{12} MW = 120.19

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-335 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 207
1,2,4-Trimethylbenzene [95-63-6] C_9H_{12} MW = 120.19

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-340 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 208
1,3,5-Trimethylbenzene [108-67-8] C_9H_{12} MW = 120.19

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-325 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **209**
Nonane **[111-84-2]** **C_9H_{20}** **MW = 128.26**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-249 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **210**
Naphthalene **[91-20-3]** **$C_{10}H_8$** **MW = 128.17**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
297.00	-573 ± 12	66-naj/kin	332.00	-361 ± 13	66-naj/kin
299.00	-552 ± 11	66-naj/kin	333.00	-345 ± 13	66-naj/kin
309.00	-501 ± 16	66-naj/kin	337.00	-346 ± 13	66-naj/kin
323.50	-401 ± 15	66-naj/kin	346.00	-311 ± 13	66-naj/kin
328.00	-389 ± 13	66-naj/kin			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **211**
Butylbenzene **[104-51-8]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-345 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **212**
(1-Methylpropyl)benzene **[135-98-8]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-312 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **213**
1-Methyl-2-propylbenzene **[1074-17-5]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-327 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 214
1-Methyl-2-(1-methylethyl)benzene [527-84-4] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-329 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 215
1-Methyl-3-propylbenzene [1074-43-7] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-328 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 216
1-Methyl-4-propylbenzene [1074-55-1] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-318 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 217
1,4-Diethylbenzene [105-05-5] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-342 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 218
1-Ethyl-2,4-dimethylbenzene [874-41-9] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-350 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 219
1-Ethyl-2,3-dimethylbenzene [933-98-2] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-349 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 220
1-Ethyl-2,5-dimethylbenzene [1758-88-9] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-348 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 221
1-Ethyl-2,6-dimethylbenzene [2870-04-4] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-352 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 222
1-Ethyl-3,4-dimethylbenzene [934-80-5] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-354 ± 70	71-vig/sem-1			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 223
1-Ethyl-3,5-dimethylbenzene [934-74-7] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-348 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **224**
1,2,3,4-Tetramethylbenzene **[488-23-3]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
353.20	-386 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **225**
1,2,3,5-Tetramethylbenzene **[527-53-7]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
353.20	-380 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **226**
1,2,4,5-Tetramethylbenzene **[95-93-2]** **$C_{10}H_{14}$** **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
353.20	-376 ± 70	71-vig/sem-1			

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **227**
Decane **[124-18-5]** **$C_{10}H_{22}$** **MW = 142.28**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
323.15	-417 ± 7	59-pra/ben	348.15	-321 ± 8	59-pra/ben

Carbon dioxide **[124-38-9]** **CO_2** **MW = 44.01** **228**
1-Decanol **[112-30-1]** **$C_{10}H_{22}O$** **MW = 158.28**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
348.15	-431.1 ± 40	94-lee/che	453.15	-261.9 ± 30	94-lee/che
403.15	-398.8 ± 40	94-lee/che			

Carbon dioxide [124-38-9] CO_2 MW = 44.01 229
Anthracene [120-12-7] $C_{14}H_{10}$ MW = 178.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹			Ref.
338.00	-540	±	12	70-naj/kin	399.00	-361	±	12	70-naj/kin
348.00	-520	±	12	70-naj/kin	407.00	-352	±	12	70-naj/kin
350.00	-498	±	12	70-naj/kin	419.00	-337	±	12	70-naj/kin
355.00	-466	±	12	70-naj/kin	423.00	-309	±	12	70-naj/kin
365.00	-443	±	12	70-naj/kin	449.00	-273	±	12	70-naj/kin
378.00	-395	±	12	70-naj/kin					

Carbon dioxide [124-38-9] CO_2 MW = 44.01 230
Phenanthrene [85-01-8] $C_{14}H_{10}$ MW = 178.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹			Ref.
312.00	-709	±	12	70-bra/kin	348.00	-512	±	12	70-bra/kin
316.00	-686	±	12	70-bra/kin	350.00	-502	±	12	70-bra/kin
319.00	-675	±	12	70-bra/kin	355.00	-448	±	12	70-bra/kin
321.00	-694	±	12	70-bra/kin	356.00	-454	±	12	70-bra/kin
328.00	-610	±	12	70-bra/kin	362.00	-439	±	12	70-bra/kin
330.00	-625	±	12	70-bra/kin	366.00	-452	±	12	70-bra/kin
334.00	-628	±	12	70-bra/kin	368.00	-405	±	12	70-bra/kin
336.00	-598	±	12	70-bra/kin	381.00	-406	±	12	70-bra/kin
338.00	-563	±	12	70-bra/kin	398.00	-358	±	12	70-bra/kin
343.00	-562	±	12	70-bra/kin	414.00	-306	±	12	70-bra/kin
346.00	-546	±	12	70-bra/kin					

Carbon disulfide [75-15-0] CS_2 MW = 76.14 231
Chloromethane [74-87-3] CH_3Cl MW = 50.49

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹			Ref.
323.15	-355	±	25	67-bot/spu	377.43	-263	±	25	67-bot/spu
325.85	-346	±	25	67-bot/spu	402.43	-225	±	25	67-bot/spu
349.56	-318	±	25	67-bot/spu	430.01	-171	±	25	67-bot/spu

Carbon disulfide [75-15-0] CS_2 MW = 76.14 232
Propanone [67-64-1] C_3H_6O MW = 58.08

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-606 ± 25	67-bot/spu	378.84	-406 ± 25	67-bot/spu
324.84	-600 ± 25	67-bot/spu	407.38	-363 ± 25	67-bot/spu
349.85	-493 ± 25	67-bot/spu	432.09	-326 ± 25	67-bot/spu

Hydrogen chloride [7647-01-0] ClH MW = 36.46 233
Krypton [7439-90-9] Kr MW = 83.80

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
328.70	-21.7 ± 10.0	33-glo/roe	368.70	-11.4 ± 0.6	33-glo/roe

Hydrogen chloride [7647-01-0] ClH MW = 36.46 234
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
368.70	-85.0 ± 4.3	33-glo/ful	389.50	-66.0 ± 3.3	33-glo/ful

Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06 235
Helium [7440-59-7] He MW = 4.00

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.0943 \cdot 10^2 - 3.5853 \cdot 10^4/(T/K) + 3.7473 \cdot 10^6/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
200	23.8 ± 5	300	31.6 ± 2		
250	26.0 ± 5	350	37.6 ± 2		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
198.00	21.6 ± 8.0	-2.3	86-eli/hoa (▲)	273.00	28.3 ± 6.0	-0.1	86-eli/hoa (▲)
203.00	23.5 ± 8.0	-0.2	86-eli/hoa (▲)	290.00	30.5 ± 2.0	0.1	82-mar/tre-1(■)
213.00	26.5 ± 8.0	2.8	86-eli/hoa (▲)	290.00	30.6 ± 2.0	0.2	82-mar/tre-1(■)
253.00	28.5 ± 6.0	2.2	86-eli/hoa (▲)	292.90	31.1 ± 2.0	0.4	81-bel/dun (×)

cont.

Sulfur hexafluoride + Helium (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
296.20	28.7 ± 6.0	-2.4	86-eli/hoa (▲)	313.50	32.9 ± 2.0	-0.3	81-bel/dun (×)
300.00	31.1 ± 2.0	-0.5	82-mar/tre-1(■)	320.00	34.4 ± 2.0	0.4	81-bel/dun (×)
300.00	30.9 ± 2.0	-0.7	82-mar/tre-1(■)	320.00	34.4 ± 2.0	0.4	82-mar/tre-1(■)
303.20	31.4 ± 2.0	-0.5	81-bel/dun (×)	320.00	34.3 ± 2.0	0.3	82-mar/tre-1(■)

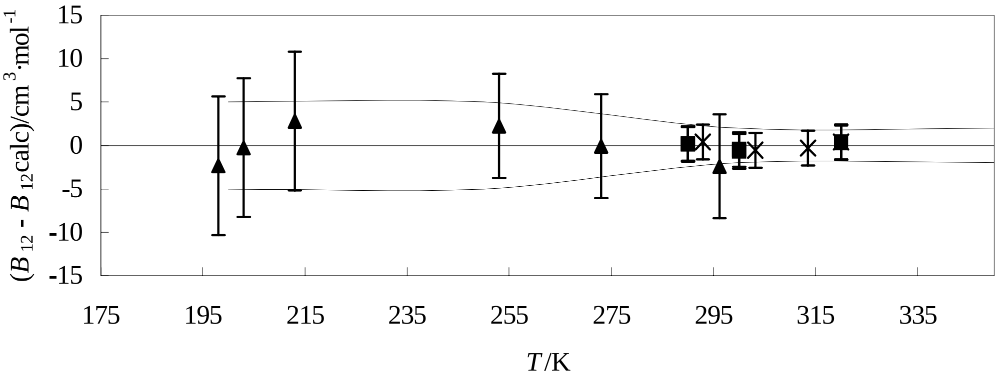

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	174.8 ± 0.2	82-mar/tre-1	315.50	0.500	151.6 ± 0.3	81-bel/dun
292.90	0.500	171.3 ± 0.3	81-bel/dun	320.00	0.500	146.4 ± 0.3	81-bel/dun
300.00	0.500	163.8 ± 0.2	82-mar/tre-1	320.00	0.500	146.4 ± 0.2	82-mar/tre-1
300.00	0.500	163.6 ± 0.2	82-mar/tre-1	320.00	0.500	146.8 ± 0.2	82-mar/tre-1
303.20	0.500	160.6 ± 0.3	81-bel/dun	320.00	0.500	146.7 ± 0.2	82-mar/tre-1
313.50	0.500	151.6 ± 0.3	81-bel/dun				

Sulfur hexafluoride **[2551-62-4]** **F_6S** **MW = 146.06** **236**
Krypton **[7439-90-9]** **Kr** **MW = 83.80**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.9205 \cdot 10 + 5.8005 \cdot 10^3/(T/K) - 1.3564 \cdot 10^7/(T/K)^2 + 4.4465 \cdot 10^8/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
200	-235.3 ± 20	300	-95.7 ± 10	400	-44.1 ± 4
250	-146.2 ± 20	350	-64.6 ± 7	475	-24.6 ± 4

cont.

Sulfur hexafluoride + Krypton (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
201.00	-248.0 ± 10.0	-15.1	84-sch/eli (▲)	300.00	-104.6 ± 2.0	-8.9	82-mar/tre-1(□)
223.00	-197.0 ± 6.0	-9.6	84-sch/eli (▲)	303.20	-70.0 ± 3.0	23.3	76-san/uri-1(×)
248.00	-159.0 ± 4.0	-10.2	84-sch/eli (▲)	313.20	-64.1 ± 3.0	22.0	76-san/uri-1(×)
273.00	-130.0 ± 4.0	-10.3	84-sch/eli (▲)	320.00	-88.1 ± 2.0	-6.5	82-mar/tre-1(□)
273.20	-99.0 ± 3.0	20.5	76-san/uri-1(×)	320.00	-88.1 ± 2.0	-6.5	82-mar/tre-1(□)
283.20	-91.0 ± 3.0	18.9	76-san/uri-1(×)	323.20	-57.5 ± 3.0	22.0	76-san/uri-1(×)
290.00	-113.5 ± 2.0	-9.7	82-mar/tre-1(□)	330.00	-83.0 ± 4.0	-7.6	84-sch/eli (▲)
290.00	-113.5 ± 2.0	-9.7	82-mar/tre-1(□)	365.00	-62.0 ± 4.0	-4.4	84-sch/eli (▲)
293.20	-80.8 ± 3.0	20.4	76-san/uri-1(×)	400.00	-47.0 ± 4.0	-2.9	84-sch/eli (▲)
296.20	-109.0 ± 2.0	-10.3	84-sch/eli (▲)	430.00	-38.0 ± 4.0	-2.9	84-sch/eli (▲)
300.00	-104.6 ± 2.0	-8.9	82-mar/tre-1(□)	465.00	-30.0 ± 4.0	-3.4	84-sch/eli (▲)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	64.1 ± 0.2	82-mar/tre-1	300.00	0.500	59.2 ± 0.2	82-mar/tre-1
290.00	0.500	64.0 ± 0.2	82-mar/tre-1	320.00	0.500	51.9 ± 0.2	82-mar/tre-1
300.00	0.500	59.2 ± 0.2	82-mar/tre-1	320.00	0.500	51.9 ± 0.2	82-mar/tre-1

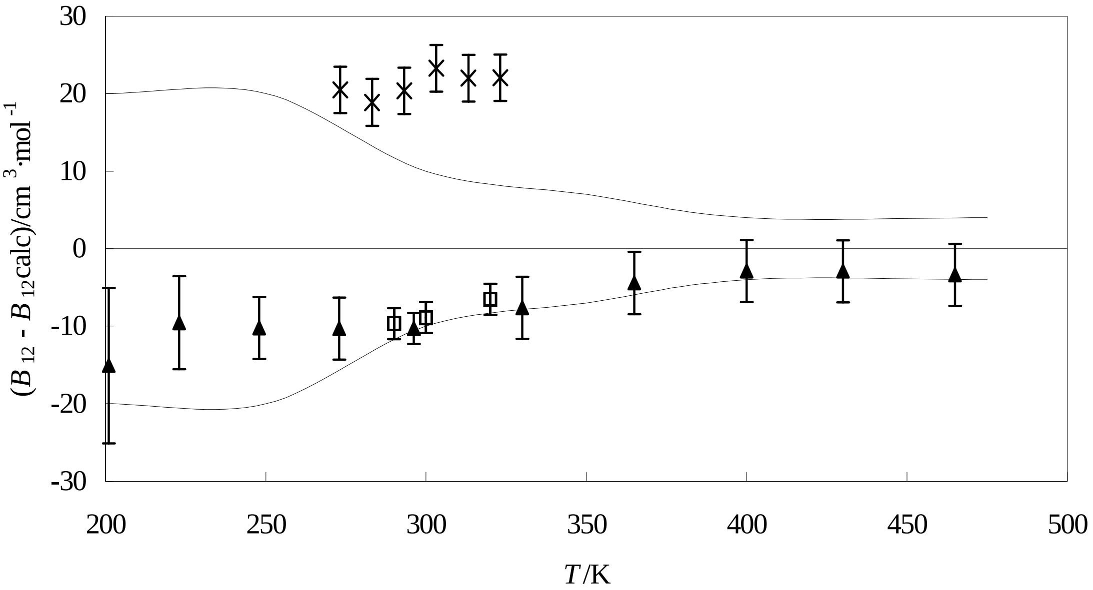

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06 237
Nitrogen [7727-37-9] N_2 MW = 28.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-67.4 ± 2.0	82-mar/tre-1	300.00	-61.2 ± 2.0	82-mar/tre-1
290.00	-67.0 ± 2.0	82-mar/tre-1	320.00	-49.0 ± 2.0	82-mar/tre-1
290.00	-67.2 ± 2.0	82-mar/tre-1	320.00	-48.7 ± 6.0	82-mar/tre-1
300.00	-61.1 ± 2.0	82-mar/tre-1			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	85.5 ± 0.2	82-mar/tre-1	300.00	0.500	79.4 ± 0.2	82-mar/tre-1
290.00	0.500	85.9 ± 0.2	82-mar/tre-1	320.00	0.500	69.8 ± 0.2	82-mar/tre-1
290.00	0.500	85.7 ± 0.2	82-mar/tre-1	320.00	0.500	70.1 ± 0.2	82-mar/tre-1
300.00	0.500	79.5 ± 0.2	82-mar/tre-1				

Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06 238
Neon [7440-01-9] Ne MW = 20.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	7.3 ± 2.0	82-mar/tre-1	300.00	9.7 ± 2.0	82-mar/tre-1
290.00	7.5 ± 2.0	82-mar/tre-1	320.00	15.1 ± 2.0	82-mar/tre-1
300.00	9.8 ± 2.0	82-mar/tre-1	320.00	15.0 ± 2.0	82-mar/tre-1

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	152.0 ± 0.2	82-mar/tre-1	300.00	0.500	142.5 ± 0.2	82-mar/tre-1
290.00	0.500	152.2 ± 0.2	82-mar/tre-1	320.00	0.500	127.3 ± 0.2	82-mar/tre-1
300.00	0.500	142.6 ± 0.2	82-mar/tre-1	320.00	0.500	127.2 ± 0.2	82-mar/tre-1

Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06 239
Oxygen [7782-44-7] O_2 MW = 32.00

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-73.1 ± 2.0	82-mar/tre-1	300.00	-66.8 ± 2.0	82-mar/tre-1
290.00	-73.1 ± 2.0	82-mar/tre-1	320.00	-53.8 ± 2.0	82-mar/tre-1
300.00	-66.7 ± 2.0	82-mar/tre-1	320.00	-53.9 ± 2.0	82-mar/tre-1

cont.

Sulfur hexafluoride + Oxygen (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	85.4 ± 0.2	82-mar/tre-1	300.00	0.500	79.5 ± 0.2	82-mar/tre-1
290.00	0.500	85.6 ± 0.2	82-mar/tre-1	320.00	0.500	70.2 ± 0.2	82-mar/tre-1
300.00	0.500	79.6 ± 0.2	82-mar/tre-1	320.00	0.500	70.1 ± 0.2	82-mar/tre-1

Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06 240
Xenon [7440-63-3] Xe MW = 131.29

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-170.6 ± 2.0	82-mar/tre-1	300.00	-157.7 ± 2.0	82-mar/tre-1
290.00	-171.1 ± 2.0	82-mar/tre-1	320.00	-133.0 ± 2.0	82-mar/tre-1
290.00	-171.2 ± 2.0	82-mar/tre-1	320.00	-133.1 ± 2.0	82-mar/tre-1
300.00	-157.5 ± 2.0	82-mar/tre-1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	50.5 ± 0.2	82-mar/tre-1	300.00	0.500	47.3 ± 0.2	82-mar/tre-1
290.00	0.500	51.0 ± 0.2	82-mar/tre-1	320.00	0.500	41.5 ± 0.2	82-mar/tre-1
290.00	0.500	50.5 ± 0.2	82-mar/tre-1	320.00	0.500	41.4 ± 0.2	82-mar/tre-1
300.00	0.500	47.5 ± 0.2	82-mar/tre-1				

Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06 241
Chlorotrifluoromethane [75-72-9] $CClF_3$ MW = 104.46

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-223.0 ± 6.7	71-nel/col			

Sulfur hexafluoride [2551-62-4] F_6S MW = 146.06 242
Tetrafluoromethane [75-73-0] CF_4 MW = 88.00

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.0553 \cdot 10^2 - 1.5386 \cdot 10^5/(T/K) + 2.8371 \cdot 10^7/(T/K)^2 - 4.3780 \cdot 10^9/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
270	-197.6 ± 3	350	-104.6 ± 3	450	-44.3 ± 3
300	-154.3 ± 3	400	-70.2 ± 3		

cont.

Sulfur hexafluoride + Tetrafluoromethane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)
271.61	-193.2 ± 1.3	1.7	72-sig/sil (□)	320.00	-131.0 ± 0.9	0.8	82-mar/tre-1(▲)
290.00	-169.0 ± 0.9	-1.8	82-mar/tre-1(▲)	323.15	-132.0 ± 2.0	-3.4	71-dan/kno (×)
290.00	-169.0 ± 0.9	-1.8	82-mar/tre-1(▲)	323.55	-125.4 ± 1.9	2.8	72-sig/sil (□)
300.00	-155.7 ± 0.9	-1.4	82-mar/tre-1(▲)	348.10	-104.1 ± 1.3	2.0	72-sig/sil (□)
300.00	-155.8 ± 0.9	-1.5	82-mar/tre-1(▲)	373.15	-88.1 ± 0.4	-0.8	72-sig/sil (□)
308.12	-144.6 ± 0.7	0.0	72-sig/sil (□)	423.15	-55.0 ± 2.2	2.4	72-sig/sil (□)
320.00	-131.0 ± 0.9	0.8	82-mar/tre-1(▲)				

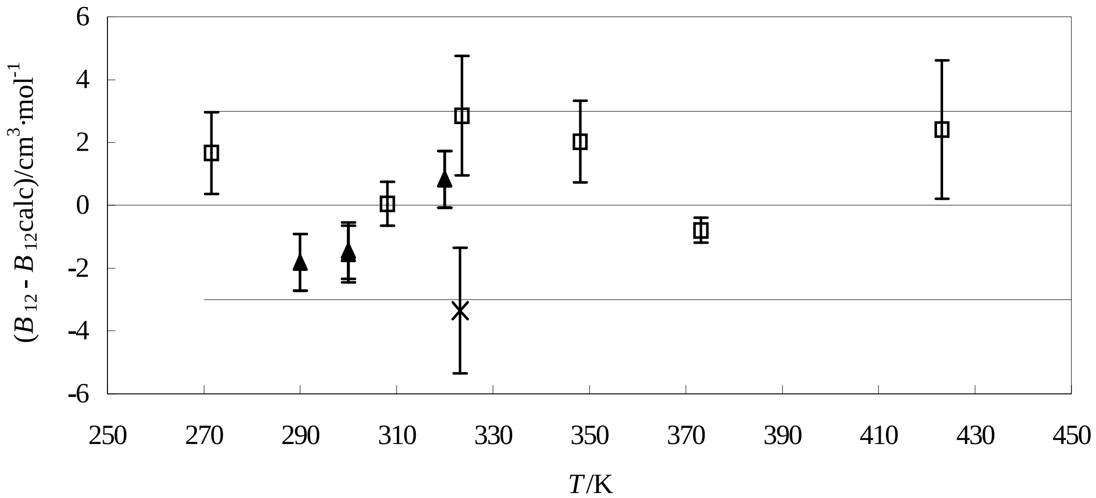

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

$\frac{T}{\text{K}}$	x_2	$\frac{B_m \pm \delta B_m}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.	$\frac{T}{\text{K}}$	x_2	$\frac{B_m \pm \delta B_m}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.
271.61	0.000	-339.3 ± 0.6	72-sig/sil	308.12	0.271	-200.0 ± 0.3	72-sig/sil
271.61	0.180	-288.5 ± 0.3	72-sig/sil	308.12	0.345	-184.6 ± 0.1	72-sig/sil
271.61	0.393	-235.3 ± 0.7	72-sig/sil	308.12	0.648	-131.7 ± 0.2	72-sig/sil
271.61	0.556	-194.2 ± 1.7	72-sig/sil	308.12	0.941	-88.9 ± 0.2	72-sig/sil
271.61	0.787	-150.8 ± 0.9	72-sig/sil	308.12	1.000	-81.8 ± 0.7	72-sig/sil
271.61	0.897	-131.3 ± 0.7	72-sig/sil	323.55	0.000	-230.9 ± 0.4	72-sig/sil
271.61	1.000	-112.3 ± 0.1	72-sig/sil	323.55	0.190	-190.0 ± 0.6	72-sig/sil
271.61	0.000	-339.2 ± 0.5	72-sig/sil	323.55	0.358	-162.9 ± 0.8	72-sig/sil
271.61	0.000	-339.1 ± 0.6	72-sig/sil	323.55	0.589	-124.4 ± 0.6	72-sig/sil
303.15	0.000	-266.1 ± 0.1	72-sig/sil	323.55	0.796	-96.2 ± 0.7	72-sig/sil
308.12	0.000	-255.8 ± 0.1	72-sig/sil	323.55	1.000	-71.0 ± 0.2	72-sig/sil

cont.

Sulfur hexafluoride + Tetrafluoromethane (cont.)

Table 3. (cont.)

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
323.55	0.000	-229.5	±	0.6	72-sig/sil	373.15	0.188	-136.2	±	0.7	72-sig/sil
323.55	1.000	-70.6	±	0.4	72-sig/sil	373.15	0.446	-102.7	±	0.5	72-sig/sil
348.10	0.000	-193.5	±	0.6	72-sig/sil	373.15	0.590	-85.6	±	0.3	72-sig/sil
348.10	0.191	-161.1	±	0.5	72-sig/sil	373.15	0.808	-61.7	±	0.8	72-sig/sil
348.10	0.365	-135.0	±	0.8	72-sig/sil	373.15	1.000	-44.8	±	0.8	72-sig/sil
348.10	0.582	-104.0	±	0.6	72-sig/sil	373.15	0.000	-163.9	±	0.6	72-sig/sil
348.10	0.798	-77.2	±	0.9	72-sig/sil	423.15	0.076	-105.2	±	0.7	72-sig/sil
348.10	1.000	-56.2	±	0.7	72-sig/sil	423.15	0.305	-80.3	±	0.3	72-sig/sil
348.10	0.000	-195.5	±	0.6	72-sig/sil	423.15	0.580	-54.2	±	2.4	72-sig/sil
348.10	1.000	-57.4	±	0.5	72-sig/sil	423.15	0.834	-37.6	±	1.4	72-sig/sil
373.15	0.000	-163.1	±	0.5	72-sig/sil	423.15	1.000	-23.4	±	0.6	72-sig/sil

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.
323.15	0.500	19.0	±	1.0	71-dan/kno	300.00	0.500	26.0	±	0.2	82-mar/tre-1
290.00	0.500	28.5	±	0.2	82-mar/tre-1	320.00	0.500	23.0	±	0.2	82-mar/tre-1
290.00	0.500	28.3	±	0.2	82-mar/tre-1	320.00	0.500	22.9	±	0.2	82-mar/tre-1
300.00	0.500	26.2	±	0.2	82-mar/tre-1						

Table 5. Experimental C_m values with uncertainty.

T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
271.61	0.000	19.0	±	0.2	72-sig/sil	323.55	1.000	5.5	±	0.1	72-sig/sil
271.61	0.180	16.8	±	0.1	72-sig/sil	348.10	0.000	15.3	±	0.2	72-sig/sil
271.61	0.393	13.5	±	0.1	72-sig/sil	348.10	0.191	11.8	±	0.1	72-sig/sil
271.61	0.556	12.6	±	0.6	72-sig/sil	348.10	0.365	9.6	±	0.2	72-sig/sil
271.61	0.787	9.6	±	0.2	72-sig/sil	348.10	0.582	6.1	±	0.1	72-sig/sil
271.61	0.897	8.6	±	0.2	72-sig/sil	348.10	0.798	5.2	±	0.2	72-sig/sil
271.61	1.000	7.6	±	0.0	72-sig/sil	348.10	1.000	4.1	±	0.2	72-sig/sil
271.61	0.000	18.4	±	0.2	72-sig/sil	348.10	0.000	15.5	±	0.4	72-sig/sil
271.61	0.000	18.6	±	0.2	72-sig/sil	348.10	1.000	4.3	±	0.2	72-sig/sil
303.15	0.000	19.3	±	0.1	72-sig/sil	373.15	0.000	12.0	±	0.2	72-sig/sil
308.12	0.000	19.1	±	0.0	72-sig/sil	373.15	0.188	9.6	±	0.3	72-sig/sil
308.12	0.271	13.6	±	0.1	72-sig/sil	373.15	0.446	6.5	±	0.3	72-sig/sil
308.12	0.345	13.4	±	0.0	72-sig/sil	373.15	0.590	5.8	±	0.2	72-sig/sil
308.12	0.648	9.3	±	0.0	72-sig/sil	373.15	0.808	4.8	±	0.2	72-sig/sil
308.12	0.941	6.7	±	0.0	72-sig/sil	373.15	1.000	4.7	±	0.2	72-sig/sil
308.12	1.000	6.9	±	0.1	72-sig/sil	373.15	0.000	12.2	±	0.3	72-sig/sil
323.55	0.000	17.7	±	0.2	72-sig/sil	373.15	1.000	4.5	±	0.2	72-sig/sil
323.55	0.190	15.4	±	0.2	72-sig/sil	423.15	0.076	9.5	±	0.1	72-sig/sil
323.55	0.358	11.1	±	0.2	72-sig/sil	423.15	0.305	8.1	±	0.1	72-sig/sil
323.55	0.589	8.0	±	0.1	72-sig/sil	423.15	0.580	3.6	±	0.7	72-sig/sil
323.55	0.796	6.1	±	0.1	72-sig/sil	423.15	0.834	1.1	±	0.7	72-sig/sil
323.55	1.000	5.4	±	0.1	72-sig/sil	423.15	1.000	4.4	±	0.1	72-sig/sil
323.55	0.000	17.9	±	0.1	72-sig/sil						

cont.

Sulfur hexafluoride + Tetrafluoromethane (cont.)

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
271.61	14.5 ± 0.7	72-sig/sil	348.10	8.8 ± 0.9	72-sig/sil
308.12	12.8 ± 1.0	72-sig/sil	373.15	6..7 ± 0.5	72-sig/sil
323.55	12.4 ± 1.1	72-sig/sil			

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
271.61	10.6 ± 0.8	72-sig/sil	348.10	4.2 ± 0.9	72-sig/sil
308.12	8.2 ± 1.4	72-sig/sil	373.15	4.5 ± 0.4	72-sig/sil
323.55	4.6 ± 0.9	72-sig/sil			

Sulfur hexafluoride **[2551-62-4]** **F_6S** **MW = 146.06** **243**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 4.1578 \cdot 10^2 - 4.1781 \cdot 10^5/(T/K) + 1.3698 \cdot 10^8/(T/K)^2 - 1.7166 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-90.7 ± 3	400	-40.8 ± 3	500	-9.2 ± 3
350	-60.1 ± 3	450	-24.6 ± 3	550	5.8 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
290.00	-99.0 ± 0.9	1.0	82-mar/tre-1(□)	370.00	-54.3 ± 2.0	-2.6	74-bel/rei (×)
290.00	-99.0 ± 0.9	1.0	82-mar/tre-1(□)	400.00	-41.3 ± 2.0	-0.5	74-bel/rei (×)
300.00	-91.8 ± 2.0	-1.1	74-bel/rei (×)	430.00	-29.2 ± 2.0	1.7	74-bel/rei (×)
300.00	-91.0 ± 0.9	-0.3	82-mar/tre-1(□)	460.00	-18.9 ± 2.0	2.6	74-bel/rei (×)
320.00	-79.0 ± 2.0	-3.0	74-bel/rei (×)	490.00	-10.9 ± 2.0	1.4	74-bel/rei (×)
320.00	-75.0 ± 0.9	1.0	82-mar/tre-1(□)	520.00	-3.2 ± 2.0	0.0	74-bel/rei (×)
320.00	-75.0 ± 0.9	1.0	82-mar/tre-1(□)	550.00	5.5 ± 2.0	-0.3	74-bel/rei (×)
340.00	-68.3 ± 2.0	-3.4	74-bel/rei (×)				

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	73.4 ± 0.7	82-mar/tre-1	320.00	0.500	60.3 ± 0.6	82-mar/tre-1
290.00	0.500	73.3 ± 0.7	82-mar/tre-1	320.00	0.500	60.3 ± 0.6	82-mar/tre-1
300.00	0.500	67.8 ± 0.7	82-mar/tre-1				

cont.

Sulfur hexafluoride + Methane (cont.)

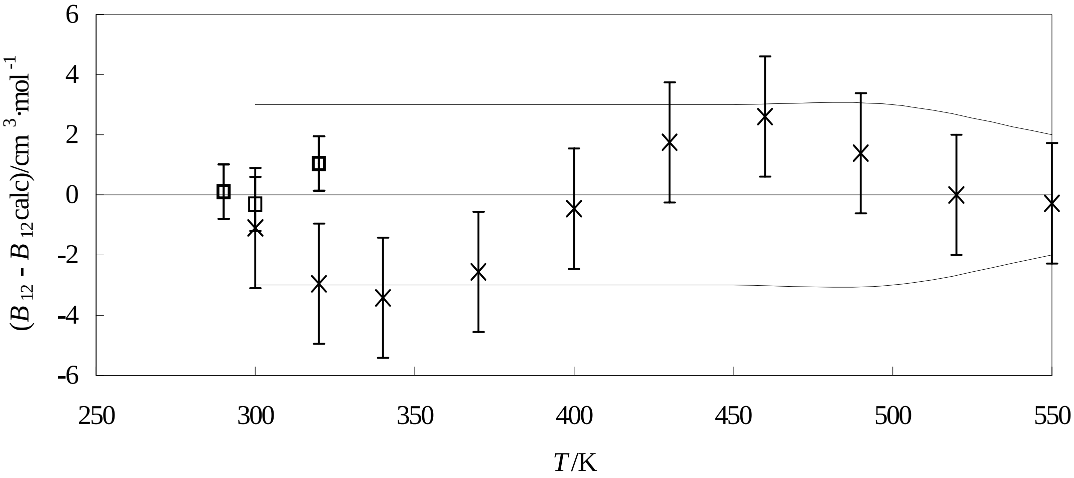

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Sulfur hexafluoride **[2551-62-4]** **F_6S** **MW = 146.06** **244**
Tetramethylsilane **[75-76-3]** **$C_4H_{12}Si$** **MW = 88.22**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3\cdot mol^{-1}} = -\,6.5668 \cdot 10 + 1.3002 \cdot 10^5/(T/\mathrm{K}) - 9.7747 \cdot 10^7/(T/\mathrm{K})^2 + 7.5944 \cdot 10^9/(T/\mathrm{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
300	-437.1 ± 5	400	-232.9 ± 5	500	-135.9 ± 5
350	-315.0 ± 5	450	-176.1 ± 5	550	-106.8 ± 5

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
300.00	-438 ± 5	-0.9	74-bel/rei (×)	430.00	-195 ± 5	1.4	74-bel/rei (×)
320.00	-380 ± 5	2.2	74-bel/rei (×)	460.00	-165 ± 5	1.9	74-bel/rei (×)
340.00	-336 ± 5	-0.4	74-bel/rei (×)	490.00	-143 ± 5	-0.1	74-bel/rei (×)
370.00	-279 ± 5	-0.7	74-bel/rei (×)	520.00	-125 ± 5	-1.9	74-bel/rei (×)
400.00	-235 ± 5	-2.1	74-bel/rei (×)	550.00	-106 ± 5	0.8	74-bel/rei (×)

cont.

Sulfur hexafluoride + Tetramethylsilane (cont.)

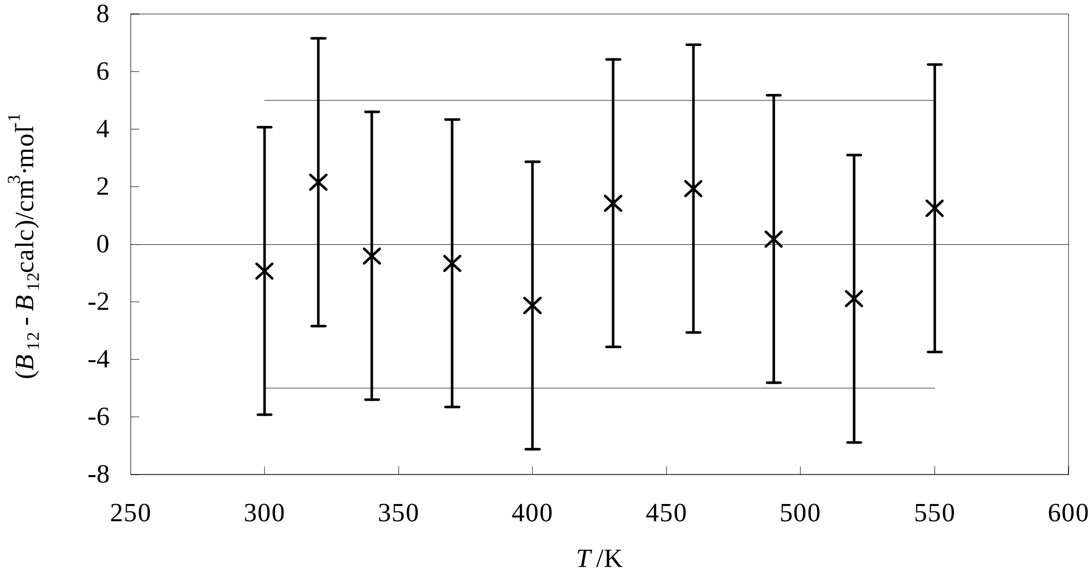

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Sulfur hexafluoride **[2551-62-4]** **F_6S** **MW = 146.06** **245**
2,2-Dimethylpropane **[463-82-1]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
300.00	-409.4 ± 2.0	74-bel/rei	430.00	-186.5 ± 2.0	74-bel/rei
320.00	-355.4 ± 2.0	74-bel/rei	460.00	-160.1 ± 2.0	74-bel/rei
340.00	-316.3 ± 2.0	74-bel/rei	490.00	-141.0 ± 2.0	74-bel/rei
370.00	-257.0 ± 2.0	74-bel/rei	520.00	-119.1 ± 2.0	74-bel/rei
400.00	-221.8 ± 2.0	74-bel/rei	550.00	-96.5 ± 2.0	74-bel/rei

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **246**
Water **[7732-18-5]** **H_2O** **MW = 18.02**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-2.0 ± 6.0	83-smi/sel	378.20	1.0 ± 10.0	83-smi/sel
373.20	-3.0 ± 6.0	88-wor/lan	378.20	1.0 ± 10.0	88-wor/lan

cont.

Hydrogen + Water (cont.)

Table 2. (cont.)

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
383.20	6.0 ± 8.0	83-smi/sel	403.20	5.0 ± 9.0	88-wor/lan
383.20	7.0 ± 8.0	88-wor/lan	413.20	7.0 ± 4.0	83-smi/sel
393.20	5.0 ± 6.0	83-smi/sel	413.20	11.0 ± 4.0	88-wor/lan
393.20	8.0 ± 6.0	88-wor/lan	423.20	5.0 ± 7.0	83-smi/sel
403.20	2.0 ± 9.0	83-smi/sel	423.20	9.0 ± 7.0	88-wor/lan

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **247**
Helium **[7440-59-7]** **He** **MW = 4.00**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3\ mol^{-1} = 1.8618 \cdot 10 - 7.5727 \cdot 10^2/(T/K) + 6.8549 \cdot 10^2/(T/K)^2 - 3.1665 \cdot 10^3/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
25	-10.8 ± 3	150	13.6 ± 3	300	16.1 ± 2
50	3.7 ± 3	200	14.8 ± 3	350	16.5 ± 2
100	11.1 ± 3	250	15.6 ± 3	450	16.9 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
8.20	-73.0 ± 3.7	-3.7	79-ber/cha (●)	173.15	16.2 ± 3.0	1.9	69-bre/vau (Δ)
9.20	-56.0 ± 2.8	3.7	79-ber/cha (●)	198.15	16.4 ± 3.0	1.6	69-bre/vau (Δ)
10.20	-47.0 ± 2.4	5.0	79-ber/cha (●)	223.15	16.2 ± 3.0	1.0	69-bre/vau (Δ)
14.00	-38.0 ± 4.0	-4.9	59-var/bee (▲)	248.15	16.4 ± 3.0	0.8	69-bre/vau (Δ)
15.00	-33.0 ± 3.0	-3.2	59-var/bee (▲)	273.15	16.4 ± 3.0	0.5	69-bre/vau (Δ)
16.00	-28.0 ± 3.0	-1.2	59-var/bee (▲)	298.15	16.0 ± 3.0	-0.1	69-bre/vau (Δ)
17.00	-25.0 ± 3.0	-0.8	59-var/bee (▲)	298.20	15.6 ± 2.0	-0.5	29-gib/tan (×)
18.00	-22.0 ± 2.0	-0.1	59-var/bee (▲)	323.15	15.8 ± 3.0	-0.5	69-bre/vau (Δ)
19.00	-19.0 ± 2.0	0.8	59-var/bee (▲)	323.20	15.6 ± 2.0	-0.7	29-gib/tan (×)
20.00	-17.0 ± 2.0	0.9	59-var/bee (▲)	348.20	15.2 ± 2.0	-1.2	29-gib/tan (×)
20.40	-16.0 ± 1.0	1.2	59-var/bee (▲)	373.20	15.6 ± 2.0	-1.0	29-gib/tan (×)
21.00	-15.0 ± 2.0	1.2	59-bee/var (▲)	398.20	14.4 ± 2.0	-2.3	29-gib/tan (×)
90.00	12.8 ± 3.0	2.5	59-kno/bee (■)	423.20	15.8 ± 2.0	-1.0	29-gib/tan (×)
148.15	15.9 ± 3.0	2.4	69-bre/vau (Δ)	448.20	14.6 ± 2.0	-2.3	29-gib/tan (×)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
20.40	0.500	54.7 ± 2.0	60-kna/kno				

cont.

Hydrogen + Helium (cont.)

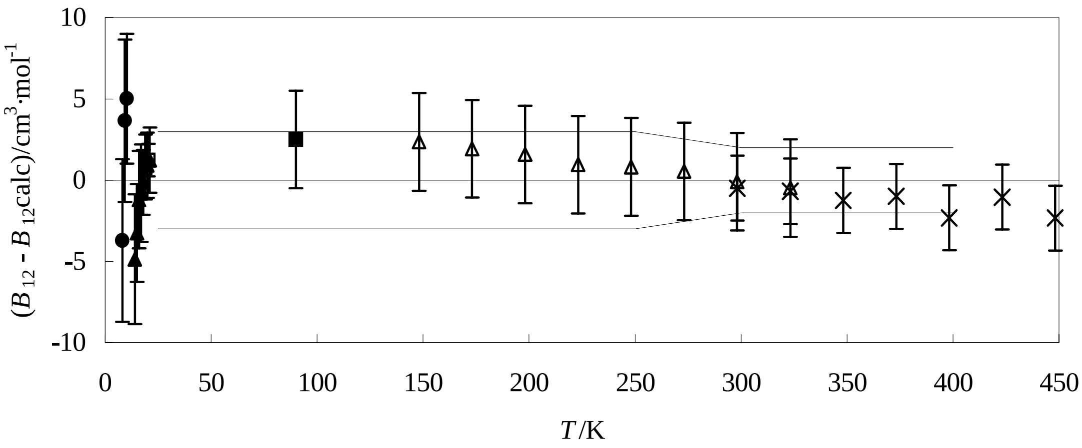

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot$ cm$^6 \cdot$ mol^{-2}	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot$ cm$^6 \cdot$ mol^{-2}	Ref.
8.20	7.0 ± 2.0	79-ber/cha	10.20	2.0 ± 1.0	79-ber/cha
9.20	2.0 ± 1.0	79-ber/cha			

Hydrogen [1333-74-0] H_2 MW = 2.02 248
Krypton [7439-90-9] Kr MW = 83.80

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\ \text{mol}^{-1} = 3.0823 \cdot 10 - 7.4810 \cdot 10^3/(T/\text{K}) - 1.8883 \cdot 10^5/(T/\text{K})^2$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3 \cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3 \cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3 \cdot$ mol^{-1}
150	-27.4 ± 2	300	3.8 ± 2	450	13.3 ± 5
200	-11.3 ± 2	350	7.9 ± 2	500	15.1 ± 5
250	-2.1 ± 2	400	10.9 ± 3		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3 \cdot$ mol^{-1}	$B_{exp}-B_{calc}$ / cm$^3 \cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3 \cdot$ mol^{-1}	$B_{exp}-B_{calc}$ / cm$^3 \cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
148.20	-28.1 ± 1.0	0.2	67-bre (▲)	173.20	-19.2 ± 1.0	-0.5	67-bre (▲)
150.00	-24.6 ± 5.0	2.8	80-per/sch (■)	175.00	-16.0 ± 5.0	2.1	80-per/sch (■)

cont.

Hydrogen + Krypton (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
198.20	-12.0 ± 1.0	-0.3	67-bre (▲)	323.20	6.0 ± 1.0	0.1	67-bre (▲)
200.00	-9.8 ± 5.0	1.5	80-per/sch (■)	350.00	7.0 ± 5.0	-0.9	80-per/sch (■)
223.20	-6.4 ± 1.0	0.1	67-bre (▲)	400.00	9.5 ± 5.0	-1.4	80-per/sch (■)
250.00	-1.6 ± 5.0	0.5	80-per/sch (■)	450.00	11.4 ± 5.0	-1.9	80-per/sch (■)
273.20	1.2 ± 1.0	0.3	67-bre (▲)	500.00	12.8 ± 5.0	-2.3	80-per/sch (■)
300.00	3.5 ± 5.0	-0.3	80-per/sch (■)				

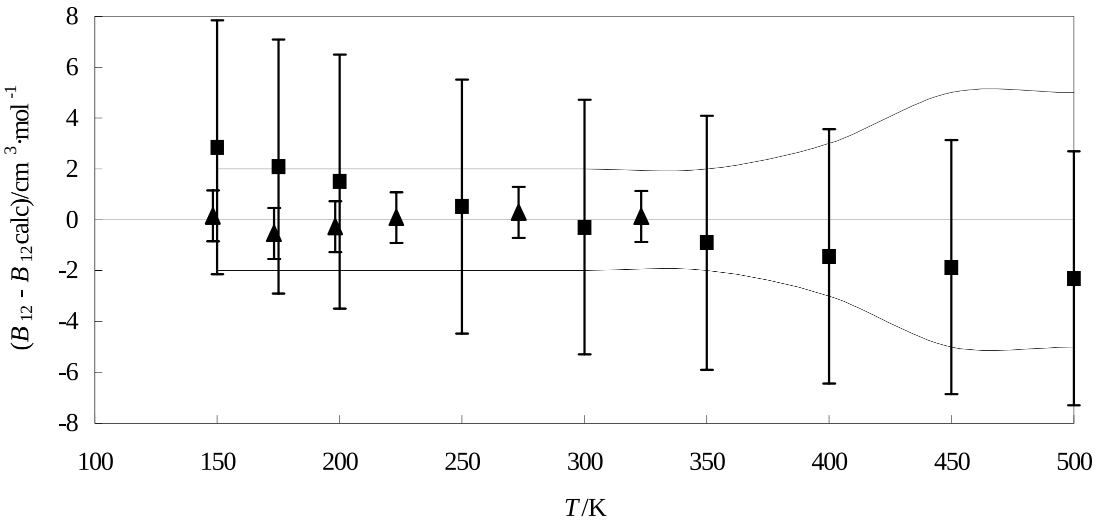

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
148.20	0.500	70.6 ± 0.2	67-bre	223.20	0.500	35.0 ± 0.2	67-bre
173.20	0.500	53.0 ± 0.2	67-bre	273.20	0.500	25.7 ± 0.2	67-bre
198.20	0.500	42.2 ± 0.2	67-bre	323.20	0.500	19.9 ± 0.2	67-bre

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **249**
Nitrogen **[7727-37-9]** N_2 **MW = 28.01**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\ \text{mol}^{-1} = 3.5658 \cdot 10 - 7.4422 \cdot 10^3/(T/\text{K}) + 1.4167 \cdot 10^5/(T/\text{K})^2 - 7.5396 \cdot 10^6/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
40	-179.7 ± 6	100	-32.1 ± 3	250	7.7 ± 3
50	-116.8 ± 5	150	-9.9 ± 3	300	12.1 ± 3
75	-56.3 ± 3	200	1.0 ± 3	350	15.4 ± 3

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
36.00	-227.0 ± 2.0	-3.6	56-reu/bee (O)	248.15	9.5 ± 3.0	2.0	30-bar/het (◊)
40.00	-184.0 ± 2.0	-4.3	56-reu/bee (O)	248.15	8.0 ± 3.0	0.5	69-bre/vau (■)
44.00	-150.0 ± 2.0	-1.2	56-reu/bee (O)	250.00	7.2 ± 0.2	-0.5	67-zan/bee (×)
48.00	-123.0 ± 1.0	3.1	56-reu/bee (O)	260.00	8.2 ± 0.2	-0.5	67-zan/bee (×)
52.00	-106.0 ± 1.0	2.7	56-reu/bee (O)	270.00	9.1 ± 0.2	-0.6	67-zan/bee (×)
56.00	-95.0 ± 1.0	0.0	56-reu/bee (O)	270.00	10.4 ± 0.4	0.7	91-jae/hin (Δ)
60.00	-92.0 ± 1.0	-8.1	56-reu/bee (O)	273.15	10.7 ± 3.0	0.8	69-bre/vau (■)
148.15	-10.3 ± 3.0	0.1	69-bre/vau (■)	273.15	10.5 ± 0.5	0.6	88-jae/aud (▲)
170.00	-5.0 ± 0.3	-0.2	67-zan/bee (×)	275.00	10.8 ± 0.4	0.7	91-jae/hin (Δ)
173.15	-3.4 ± 3.0	0.7	69-bre/vau (■)	290.00	12.0 ± 0.4	0.6	91-jae/hin (Δ)
180.00	-2.6 ± 0.2	0.0	67-zan/bee (×)	293.15	14.8 ± 3.0	3.2	30-bar/het (◊)
190.00	-0.6 ± 0.1	0.1	67-zan/bee (×)	293.15	11.7 ± 0.5	0.1	88-jae/aud (▲)
198.15	1.2 ± 3.0	0.5	69-bre/vau (■)	293.15	11.1 ± 1.4	-0.5	91-lop/roz (+)
200.00	1.1 ± 0.1	0.1	67-zan/bee (×)	298.15	13.0 ± 3.0	1.0	69-bre/vau (■)
203.15	5.7 ± 3.0	4.1	30-bar/het (◊)	298.20	14.1 ± 3.0	2.1	42-edw/ros (●)
210.00	2.7 ± 0.1	0.1	67-zan/bee (×)	310.00	13.3 ± 0.4	0.4	91-jae/hin (Δ)
220.00	4.1 ± 0.2	0.1	67-zan/bee (×)	313.15	13.1 ± 0.5	0.0	88-jae/aud (▲)
223.15	7.7 ± 3.0	3.2	30-bar/het (◊)	323.15	14.6 ± 3.0	0.8	69-bre/vau (■)
223.15	4.8 ± 3.0	0.3	69-bre/vau (■)	330.00	14.6 ± 0.4	0.4	91-jae/hin (Δ)
230.00	5.3 ± 0.2	-0.1	67-zan/bee (×)	333.15	14.8 ± 0.5	0.4	88-jae/aud (▲)
240.00	6.2 ± 0.2	-0.4	67-zan/bee (×)	350.00	15.4 ± 0.4	0.0	91-jae/hin (Δ)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / cm^3· mol^{-1}	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / cm^3· mol^{-1}	Ref.
203.15	0.750	6.0 ± 5.7	30-bar/het	290.00	0.250	1.7 ± 0.4	91-jae/hin
223.15	0.750	7.7 ± 7.7	30-bar/het	290.00	0.500	7.9 ± 0.4	91-jae/hin
248.15	0.750	9.7 ± 9.5	30-bar/het	290.00	0.750	12.1 ± 0.4	91-jae/hin
270.00	0.250	-1.5 ± 0.4	91-jae/hin	293.15	0.750	13.2 ± 14.8	30-bar/het
270.00	0.500	5.9 ± 0.4	91-jae/hin	310.00	0.250	4.4 ± 0.4	91-jae/hin
270.00	0.750	10.9 ± 0.4	91-jae/hin	310.00	0.500	9.6 ± 0.4	91-jae/hin
275.00	0.500	6.5 ± 0.4	91-jae/hin	310.00	0.750	13.0 ± 0.4	91-jae/hin
275.00	0.750	11.3 ± 0.4	91-jae/hin	330.00	0.250	6.8 ± 0.4	91-jae/hin

cont.

Hydrogen + Nitrogen (cont.)

Table 3. (cont.)

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
330.00	0.500	11.2 ± 0.4	91-jae/hin	350.00	0.500	12.5 ± 0.4	91-jae/hin
330.00	0.750	13.9 ± 0.4	91-jae/hin	350.00	0.750	14.6 ± 0.4	91-jae/hin
350.00	0.250	8.7 ± 0.4	91-jae/hin				

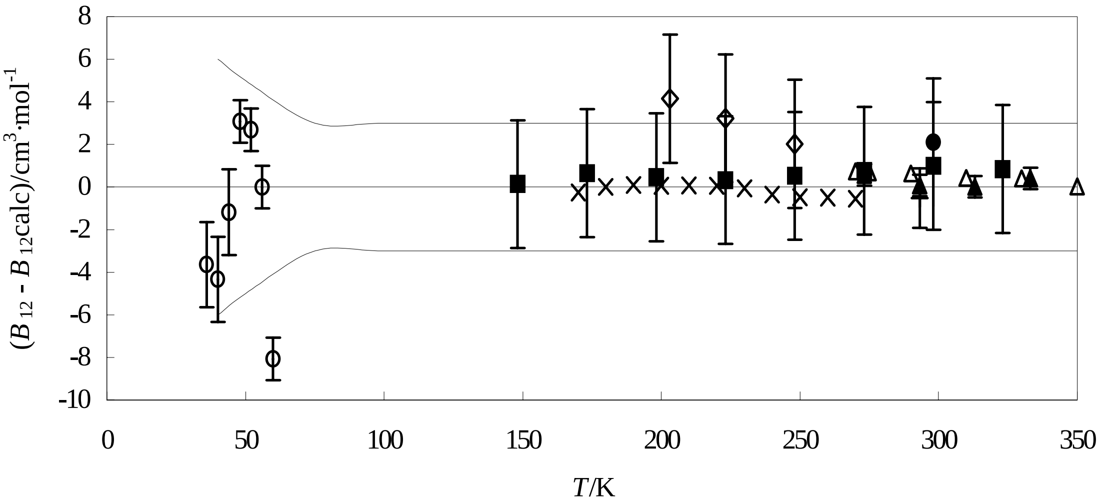

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
270.00	0.250	1.2 ± 0.1	91-jae/hin	310.00	0.500	0.8 ± 0.1	91-jae/hin
270.00	0.500	0.9 ± 0.1	91-jae/hin	310.00	0.750	0.6 ± 0.1	91-jae/hin
270.00	0.750	0.6 ± 0.1	91-jae/hin	330.00	0.250	1.1 ± 0.1	91-jae/hin
275.00	0.500	0.8 ± 0.1	91-jae/hin	330.00	0.500	0.7 ± 0.1	91-jae/hin
275.00	0.750	0.6 ± 0.1	91-jae/hin	330.00	0.750	0.6 ± 0.1	91-jae/hin
290.00	0.250	1.1 ± 0.1	91-jae/hin	350.00	0.250	1.1 ± 0.1	91-jae/hin
290.00	0.500	0.8 ± 0.1	91-jae/hin	350.00	0.500	0.8 ± 0.1	91-jae/hin
290.00	0.750	0.5 ± 0.1	91-jae/hin	350.00	0.750	0.6 ± 0.1	91-jae/hin
310.00	0.250	1.1 ± 0.1	91-jae/hin				

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
270.00	0.6 ± 0.15	91-jae/hin	275.00	0.6 ± 0.15	91-jae/hin
273.15	0.7 ± 0.10	88-jae/aud	290.00	0.6 ± 0.15	91-jae/hin

cont.

Hydrogen + Nitrogen (cont.)

Table 6. (cont.)

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
293.15	0.7 ± 0.10	88-jae/aud	330.00	0.6 ± 0.15	91-jae/hin
310.00	0.6 ± 0.15	91-jae/hin	333.15	0.6 ± 0.10	88-jae/aud
313.15	0.7 ± 0.10	88-jae/aud	350.00	0.6 ± 0.15	91-jae/hin

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
270.00	1.0 ± 0.1	91-jae/hin	310.00	1.0 ± 0.1	91-jae/hin
273.15	1.1 ± 0.1	88-jae/aud	313.15	1.0 ± 0.1	88-jae/aud
275.00	1.1 ± 0.1	91-jae/hin	330.00	1.0 ± 0.1	91-jae/hin
290.00	1.0 ± 0.1	91-jae/hin	333.15	0.9 ± 0.1	88-jae/aud
293.15	1.1 ± 0.1	88-jae/aud	350.00	0.9 ± 0.1	91-jae/hin

Hydrogen [1333-74-0] H_2 MW = 2.02 250
Neon [7440-01-9] Ne MW = 20.18

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.2959 \cdot 10 - 2.6461 \cdot 10^3/(T/K) + 4.9944 \cdot 10^4/(T/K)^2 - 4.5678 \cdot 10^5/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
150	7.4 ± 3	250	13.1 ± 3	350	15.8 ± 3
200	10.9 ± 3	300	14.7 ± 3		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
148.15	8.2 ± 3.0	1.0	69-bre/vau (☐)	248.15	13.0 ± 3.0	-0.1	69-bre/vau (☐)
173.15	10.0 ± 3.0	0.7	69-bre/vau (☐)	273.15	13.7 ± 3.0	-0.2	69-bre/vau (☐)
198.15	11.2 ± 3.0	0.4	69-bre/vau (☐)	298.15	14.2 ± 3.0	-0.4	69-bre/vau (☐)
223.15	12.3 ± 3.0	0.2	69-bre/vau (☐)	323.15	14.8 ± 3.0	-0.4	69-bre/vau (☐)

cont.

Hydrogen + Neon (cont.)

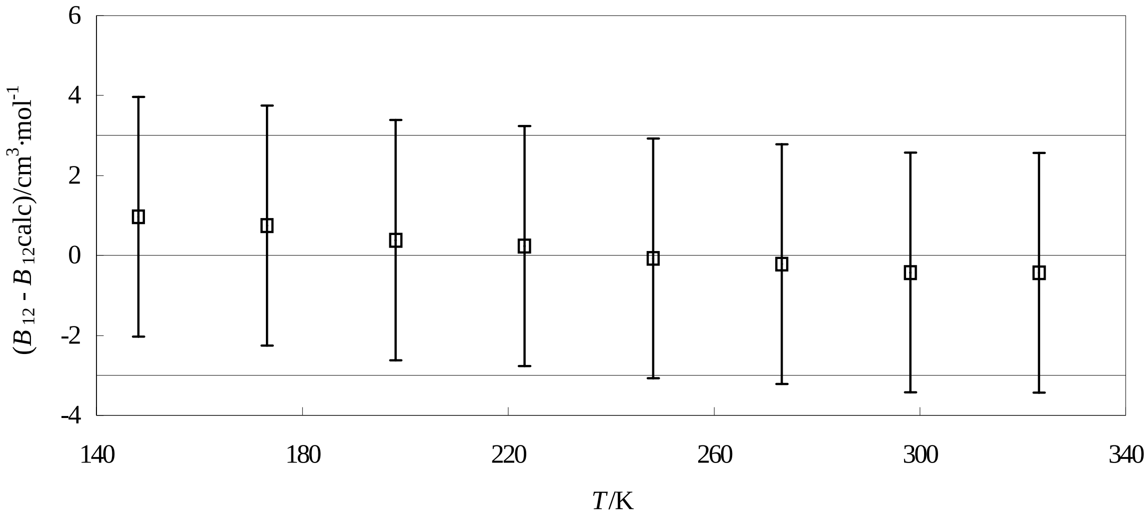

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **251**
Xenon **[7440-63-3]** **Xe** **MW = 131.29**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 2.9290 \cdot 10 - 3.8615 \cdot 10^3/(T/\text{K}) - 1.3876 \cdot 10^6/(T/\text{K})^2 + 5.8139 \cdot 10^7/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/\text{cm}^3\cdot\text{mol}^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/\text{cm}^3\cdot\text{mol}^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/\text{cm}^3\cdot\text{mol}^{-1}$
100	-89.8 ± 5	250	-4.6 ± 2	400	11.9 ± 2
150	-40.9 ± 3	300	3.2 ± 2	450	14.5 ± 2
200	-17.4 ± 3	350	8.3 ± 2	500	16.5 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $\text{cm}^3\cdot\text{mol}^{-1}$	$B_{exp} - B_{calc}$ / $\text{cm}^3\cdot\text{mol}^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $\text{cm}^3\cdot\text{mol}^{-1}$	$B_{exp} - B_{calc}$ / $\text{cm}^3\cdot\text{mol}^{-1}$	Ref. (Symbol in Fig. 1)
80.00	-125.0 ± 6.0	-2.6	77-dor/sar (☐)	198.20	-17.5 ± 2.0	0.6	67-bre (×)
85.00	-110.0 ± 6.0	3.7	77-dor/sar (☐)	200.00	-16.5 ± 5.0	1.0	80-per/sch (▲)
95.00	-96.0 ± 6.0	1.4	77-dor/sar (☐)	223.20	-11.2 ± 2.0	-0.6	67-bre (×)
105.00	-89.0 ± 6.0	-5.8	77-dor/sar (☐)	250.00	-4.6 ± 5.0	0.0	80-per/sch (▲)
115.00	-71.0 ± 6.0	0.0	77-dor/sar (☐)	273.20	-0.6 ± 1.0	0.0	67-bre (×)
125.00	-58.0 ± 6.0	2.7	77-dor/sar (☐)	300.00	2.9 ± 5.0	-0.3	80-per/sch (▲)
173.20	-29.5 ± 3.0	-1.4	67-bre (×)	323.20	5.8 ± 1.0	0.0	67-bre (×)
175.00	-25.5 ± 5.0	1.8	80-per/sch (▲)	350.00	8.0 ± 5.0	-0.3	80-per/sch (▲)

cont.

Hydrogen + Xenon (cont.)

Table 2. (cont.)

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
400.00	11.7 ± 5.0	-0.2	80-per/sch (▲)	500.00	16.5 ± 5.0	0.0	80-per/sch (▲)
450.00	14.3 ± 5.0	-0.2	80-per/sch (▲)				

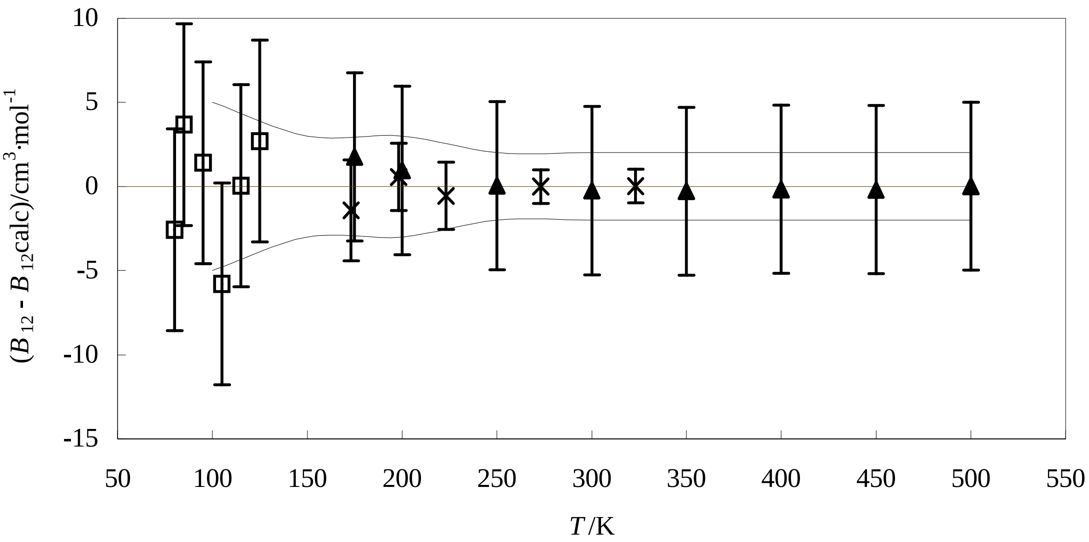

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	0.500	150.1 ± 0.2	67-bre	273.20	0.500	69.6 ± 0.2	67-bre
198.20	0.500	119.1 ± 0.2	67-bre	323.20	0.500	53.8 ± 0.2	67-bre
223.20	0.500	96.1 ± 0.2	67-bre				

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **252**
Chlorotrifluoromethane **[75-72-9]** **$CClF_3$** **MW = 104.46**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
134.97	-69.9 ± 3.0	80-shi/zie	189.97	-32.5 ± 3.0	80-shi/zie
145.02	-60.2 ± 3.0	80-shi/zie	205.03	-22.7 ± 3.0	80-shi/zie
160.02	-50.7 ± 3.0	80-shi/zie	219.99	-16.8 ± 3.0	80-shi/zie
175.02	-42.2 ± 3.0	80-shi/zie			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **253**
Tetrachloromethane **[56-23-5]** **CCl_4** **MW =153.82**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3 \cdot mol^{-1}} = 5.8322 \cdot 10^3 - 5.0461 \cdot 10^6/(T/\mathrm{K}) + 1.4589 \cdot 10^9/(T/\mathrm{K})^2 - 1.4108 \cdot 10^{11}/(T/\mathrm{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/\mathrm{cm^3 \cdot mol^{-1}}$	T/K	$(B_{12} \pm 2\sigma_{est})/\mathrm{cm^3 \cdot mol^{-1}}$	T/K	$(B_{12} \pm 2\sigma_{est})/\mathrm{cm^3 \cdot mol^{-1}}$
260	-21.4 ± 5	300	-3.3 ± 5	350	33.7 ± 5
275	-9.7 ± 5	325	8.1 ± 5		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $\mathrm{cm^3 \cdot mol^{-1}}$	$B_{exp} - B_{calc}$ / $\mathrm{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $\mathrm{cm^3 \cdot mol^{-1}}$	$B_{exp} - B_{calc}$ / $\mathrm{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
262.50	-20.0 ± 5.0	-1.5	72-gup/kin (■)	323.20	9.0 ± 5.0	2.2	72-gup/kin (■)
273.20	-8.0 ± 5.0	2.6	72-gup/kin (■)	348.15	34.9 ± 5.5	3.7	59-pra/ben (▲)
298.20	-6.0 ± 4.0	-2.2	72-gup/kin (■)	348.20	27.0 ± 5.0	-4.3	72-gup/kin (■)

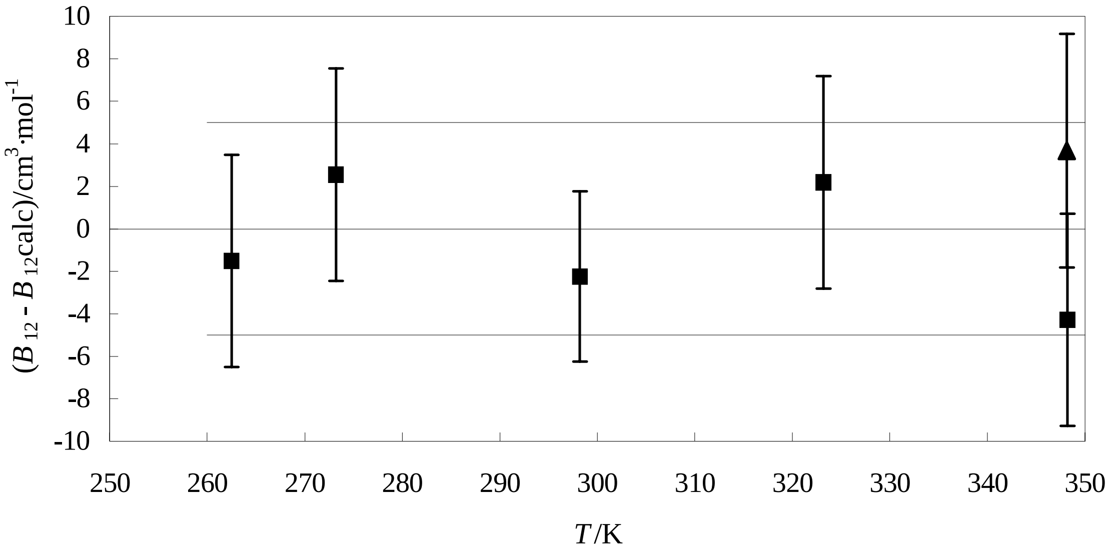

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Hydrogen	**[1333-74-0]**	H_2	**MW = 2.02**	**254**
Tetrafluoromethane	**[75-73-0]**	CF_4	**MW = 88.00**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3{\cdot}mol^{-1}} = 6.6438 \cdot 10 - 1.9787 \cdot 10^4/(T/\mathrm{K}) + 1.4512 \cdot 10^6/(T/\mathrm{K})^2 - 1.1631 \cdot 10^8/(T/\mathrm{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
100	-102.6 ± 4	200	-10.8 ± 4	300	12.3 ± 1
150	-35.4 ± 4	250	3.1 ± 1	325	15.9 ± 1

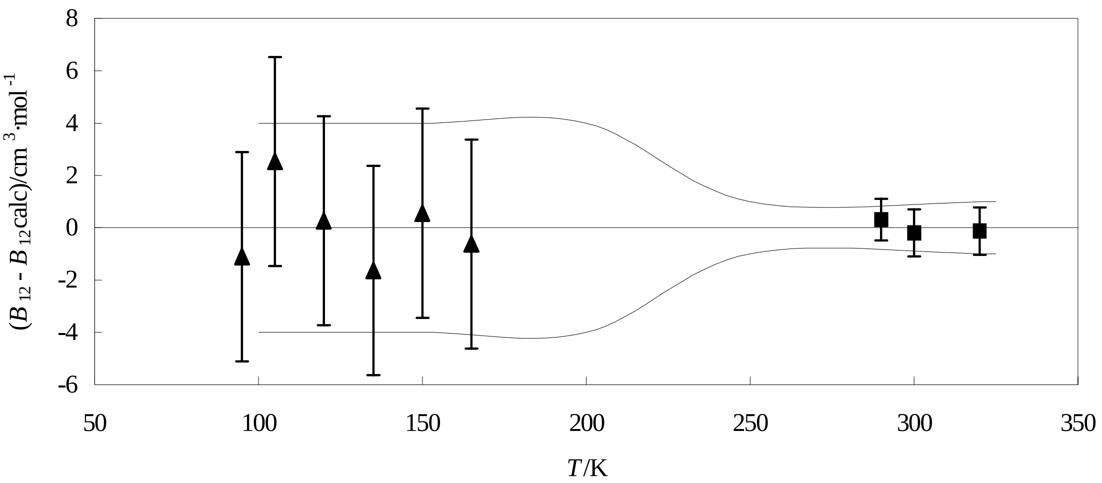

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
94.94	-118.0 ± 4.0	-1.1	80-shi/zie (▲)	165.00	-26.7 ± 4.0	-0.6	80-shi/zie (▲)
105.01	-88.3 ± 4.0	2.5	80-shi/zie (▲)	290.00	11.0 ± 0.8	0.3	86-dun/big (■)
119.94	-64.8 ± 4.0	0.3	80-shi/zie (▲)	300.00	12.1 ± 0.9	-0.2	86-dun/big (■)
135.01	-49.4 ± 4.0	-1.6	80-shi/zie (▲)	320.00	15.1 ± 0.9	-0.1	86-dun/big (■)
149.98	-34.9 ± 4.0	0.6	80-shi/zie (▲)				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / cm^3· mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / cm^3· mol^{-1}	Ref.
290.00	0.500	51.5 ± 0.4	86-dun/big	320.00	0.500	43.8 ± 0.4	86-dun/big
300.00	0.500	48.2 ± 0.4	86-dun/big				

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **255**
Chlorodifluoromethane **[75-45-6]** $CHClF_2$ **MW = 86.47**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	42.32 ± 6.0	67-bre	298.20	0.78 ± 4.0	67-bre
273.20	4.97 ± 5.0	67-bre			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	308.3 ± 0.2	67-bre	298.20	0.500	173.0 ± 0.2	67-bre
273.20	0.500	216.5 ± 0.2	67-bre				

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **256**
Methane **[74-82-8]** CH_4 **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.0011 \cdot 10^2 + 7.6037 \cdot 10^4/(T/K) - 1.2943 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
275	5.2 ± 2	300	9.5 ± 2	350	11.5 ± 1

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
273.15	3.7 ± 0.5	-1.1	88-jae/aud (●)	313.15	7.9 ± 0.5	-2.8	88-jae/aud (●)
273.20	4.0 ± 1.0	-0.8	67-bre (□)	323.15	10.2 ± 0.4	-1.0	77-mih/sag (▲)
288.70	9.2 ± 5.0	1.2	61-mas/eak (×)	323.15	10.3 ± 0.4	-0.9	77-mih/sag (▲)
293.15	5.8 ± 0.5	-2.9	88-jae/aud (●)	323.15	10.4 ± 0.4	-0.8	77-mih/sag (▲)
298.15	10.8 ± 0.4	1.5	77-mih/sag (▲)	333.15	9.9 ± 0.5	-1.6	88-jae/aud (●)
298.15	11.7 ± 0.4	2.4	77-mih/sag (▲)	348.15	11.3 ± 0.4	-0.2	77-mih/sag (▲)
298.15	11.1 ± 0.4	1.8	77-mih/sag (▲)	348.15	13.1 ± 0.4	1.6	77-mih/sag (▲)
298.15	11.7 ± 0.4	2.4	77-mih/sag (▲)	348.15	12.9 ± 0.4	1.4	77-mih/sag (▲)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.223	-21.6 ± 0.8	77-mih/sag	323.15	0.456	-2.2 ± 0.8	77-mih/sag
298.15	0.434	-5.4 ± 0.8	77-mih/sag	323.15	0.664	7.2 ± 0.8	77-mih/sag
298.15	0.579	2.5 ± 0.8	77-mih/sag	348.15	0.264	-9.7 ± 0.8	77-mih/sag
298.15	0.680	7.2 ± 0.8	77-mih/sag	348.15	0.456	1.4 ± 0.8	77-mih/sag
323.15	0.264	-13.8 ± 0.8	77-mih/sag	348.15	0.664	9.3 ± 0.8	77-mih/sag

cont.

Hydrogen + Methane (cont.)

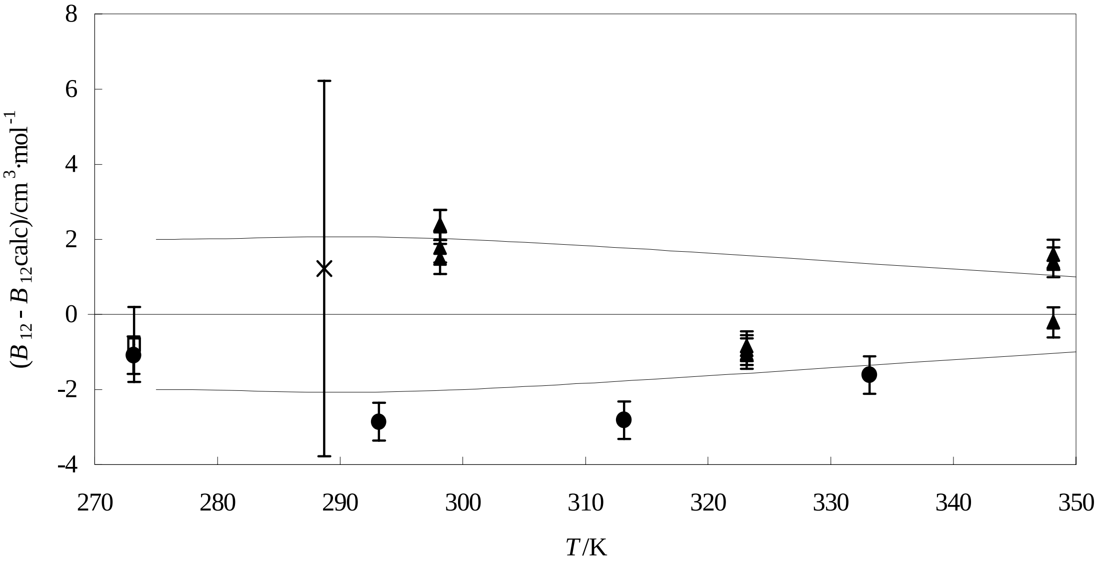

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	0.500	23.7 ± 0.2	67-bre				

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	0.6 ± 0.1	88-jae/aud	313.15	0.6 ± 0.1	88-jae/aud
293.15	0.6 ± 0.1	88-jae/aud	333.15	0.5 ± 0.1	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	1.4 ± 0.1	88-jae/aud	313.15	1.2 ± 0.1	88-jae/aud
293.15	1.3 ± 0.1	88-jae/aud	333.15	1.1 ± 0.1	88-jae/aud

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **257**
Ethene **[74-85-1]** **C_2H_4** **MW = 28.05**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	14.7 ± 5.0	61-mas/eak	298.20	-39.6 ± 3.0	42-edw/ros

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.124	-19.1 ± 1.8	80-pra/vis	373.15	0.370	-11.4 ± 1.7	80-pra/vis
298.15	0.224	-28.3 ± 1.9	80-pra/vis	373.15	0.563	-49.0 ± 2.2	80-pra/vis
298.15	0.398	-94.0 ± 2.9	80-pra/vis	373.15	0.672	-49.0 ± 2.2	80-pra/vis
298.15	0.742	-139.9 ± 3.6	80-pra/vis	373.15	0.837	-46.9 ± 2.2	80-pra/vis
323.15	0.225	-7.0 ± 1.6	80-pra/vis	398.15	0.158	-15.7 ± 1.7	80-pra/vis
323.15	0.345	-30.6 ± 2.0	80-pra/vis	398.15	0.319	-19.5 ± 1.8	80-pra/vis
323.15	0.551	-53.8 ± 2.3	80-pra/vis	398.15	0.464	-38.4 ± 2.1	80-pra/vis
323.15	0.721	-85.0 ± 2.8	80-pra/vis	398.15	0.603	-38.1 ± 2.1	80-pra/vis
348.15	0.136	-21.3 ± 1.8	80-pra/vis	398.15	0.896	-50.3 ± 2.2	80-pra/vis
348.15	0.317	-30.7 ± 2.0	80-pra/vis	423.15	0.123	-15.0 ± 1.7	80-pra/vis
348.15	0.549	-66.7 ± 2.5	80-pra/vis	423.15	0.314	-11.6 ± 1.7	80-pra/vis
348.15	0.683	-74.5 ± 2.6	80-pra/vis	423.15	0.530	-28.3 ± 1.9	80-pra/vis
348.15	0.895	-63.4 ± 2.5	80-pra/vis	423.15	0.650	-29.3 ± 1.9	80-pra/vis
373.15	0.193	-14.4 ± 1.7	80-pra/vis	423.15	0.786	-32.3 ± 2.0	80-pra/vis

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
298.15	0.124	10.0 ± 0.7	80-pra/vis	373.15	0.370	3.0 ± 0.6	80-pra/vis
298.15	0.224	6.0 ± 0.6	80-pra/vis	373.15	0.563	17.0 ± 0.8	80-pra/vis
298.15	0.398	19.0 ± 0.9	80-pra/vis	373.15	0.672	6.0 ± 0.6	80-pra/vis
298.15	0.742	25.0 ± 1.0	80-pra/vis	373.15	0.837	-8.0 ± 0.7	80-pra/vis
323.15	0.225	1.0 ± 0.5	80-pra/vis	398.15	0.158	6.0 ± 0.6	80-pra/vis
323.15	0.345	4.0 ± 0.6	80-pra/vis	398.15	0.319	3.0 ± 0.6	80-pra/vis
323.15	0.551	-2.0 ± 0.6	80-pra/vis	398.15	0.464	10.0 ± 0.7	80-pra/vis
323.15	0.721	-6.0 ± 0.7	80-pra/vis	398.15	0.603	-4.0 ± 0.6	80-pra/vis
348.15	0.136	10.0 ± 0.7	80-pra/vis	398.15	0.896	23.0 ± 1.0	80-pra/vis
348.15	0.317	5.0 ± 0.6	80-pra/vis	423.15	0.123	-1.0 ± 0.5	80-pra/vis
348.15	0.549	14.0 ± 0.8	80-pra/vis	423.15	0.314	3.0 ± 0.6	80-pra/vis
348.15	0.683	6.0 ± 0.6	80-pra/vis	423.15	0.530	6.0 ± 0.6	80-pra/vis
348.15	0.895	-15.0 ± 0.9	80-pra/vis	423.15	0.650	-1.0 ± 0.5	80-pra/vis
373.15	0.193	2.0 ± 0.5	80-pra/vis	423.15	0.786	-8.0 ± 0.7	80-pra/vis

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **258**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-3.7 ± 1.0	88-jae/aud	288.70	11.1 ± 5.0	61-mas/eak

cont.

Hydrogen + Ethane (cont.)

Table 2. (cont.)

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
293.15	0.1	±	1.0	88-jae/aud	323.15	8.6	±	0.5	77-mih/sag
298.15	5.0	±	0.5	77-mih/sag	323.15	8.0	±	0.5	77-mih/sag
298.15	5.6	±	0.5	77-mih/sag	333.15	3.9	±	1.0	88-jae/aud
298.15	5.8	±	0.5	77-mih/sag	348.15	11.5	±	0.5	77-mih/sag
313.15	2.6	±	1.0	88-jae/aud	348.15	11.9	±	0.5	77-mih/sag
323.15	7.9	±	0.5	77-mih/sag	348.15	11.1	±	0.5	77-mih/sag

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
298.15	0.231	-107.0	±	5.0	77-mih/sag	323.15	0.801	5.9	±	0.3	77-mih/sag
298.15	0.651	-14.0	±	0.7	77-mih/sag	348.15	0.280	-61.9	±	3.0	77-mih/sag
298.15	0.801	3.6	±	0.3	77-mih/sag	348.15	0.651	-4.0	±	0.2	77-mih/sag
323.15	0.221	-90.5	±	4.5	77-mih/sag	348.15	0.801	8.2	±	0.4	77-mih/sag
323.15	0.651	-8.7	±	0.5	77-mih/sag						

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
273.15	0.6	±	0.1	88-jae/aud	313.15	0.6	±	0.1	88-jae/aud
293.15	0.5	±	0.1	88-jae/aud	333.15	1.0	±	0.1	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
273.15	4.0	±	0.4	88-jae/aud	313.15	3.9	±	0.4	88-jae/aud
293.15	3.9	±	0.4	88-jae/aud	333.15	3.8	±	0.4	88-jae/aud

Hydrogen [1333-74-0] H_2 MW = 2.02 259
Ethanol [64-17-5] C_2H_6O MW = 46.07

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
298.15	5	±	5	73-gup/les	348.15	5	±	2	73-gup/les
323.15	6	±	4	73-gup/les					

Hydrogen [1333-74-0] H_2 MW = 2.02 260
Propene [115-07-1] C_3H_6 MW = 42.08

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
288.70	14.5	±	5.0	61-mas/eak					

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **261**
Propane **[74-98-6]** **C_3H_8** **MW = 44.10**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	2.3 ± 1.0	67-bre	298.20	5.1 ± 1.0	67-bre
273.20	1.3 ± 1.0	67-bre	323.15	4.9 ± 0.5	77-mih/sag
277.60	12.0 ± 10.0	80-mal-1	323.15	3.5 ± 0.5	77-mih/sag
288.70	5.7 ± 5.0	61-mas/eak	348.15	6.9 ± 0.5	77-mih/sag
298.15	5.0 ± 0.5	77-mih/sag	348.15	5.7 ± 0.5	77-mih/sag

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.839	1.4 ± 0.5	77-mih/sag	348.15	0.734	-8.7 ± 0.5	77-mih/sag
323.15	0.734	-13.1 ± 0.5	77-mih/sag	348.15	0.801	0.8 ± 0.5	77-mih/sag
323.15	0.801	-2.6 ± 0.5	77-mih/sag				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	285.3 ± 0.2	67-bre	298.20	0.500	191.8 ± 0.2	67-bre
273.20	0.500	228.3 ± 0.2	67-bre				

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **262**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	9.2 ± 5.0	61-mas/eak			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **263**
Cyclopentane **[287-92-3]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	5 ± 10	62-des/gol			

Hydrogen	**[1333-74-0]**	**H_2**	**MW = 2.02**	**264**
1-Pentene	**[109-67-1]**	**C_5H_{10}**	**MW = 70.13**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-19 ± 9	68-cru/gai			

Hydrogen	**[1333-74-0]**	**H_2**	**MW = 2.02**	**265**
Pentane	**[109-66-0]**	**C_5H_{12}**	**MW = 72.15**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	9.7 ± 5	61-mas/eak	298.20	3.0 ± 3	65-eve
298.20	7.0 ± 10	62-des/gol	298.20	2.0 ± 6	66-cru/win

Hydrogen	**[1333-74-0]**	**H_2**	**MW = 2.02**	**266**
2-Methylbutane	**[78-78-4]**	**C_5H_{12}**	**MW = 72.15**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	26 ± 30	62-des/gol			

Hydrogen	**[1333-74-0]**	**H_2**	**MW = 2.02**	**267**
Benzene	**[71-43-2]**	**C_6H_6**	**MW = 78.11**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 7.1836 \cdot 10 - 2.5863 \cdot 10^4/(T/K)$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
320	-9.0 ± 1	420	10.3 ± 2	525	22.6 ± 3
375	2.9 ± 1	475	17.4 ± 3	575	26.9 ± 3

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
323.15	-7.9 ± 1.0	0.3	61-con (▲)	513.15	21.0 ± 3.5	-0.4	61-con (▲)
323.15	-7.2 ± 1.0	1.0	61-con (▲)	533.15	23.0 ± 3.5	-0.3	61-con (▲)
373.15	1.6 ± 0.6	-0.9	61-con (▲)	553.15	25.0 ± 3.5	-0.1	61-con (▲)
473.15	16.0 ± 3.0	-1.2	61-con (▲)	573.15	27.0 ± 3.5	0.3	61-con (▲)
493.15	19.0 ± 3.5	-0.4	61-con (▲)				

cont.

Hydrogen + Benzene (cont.)

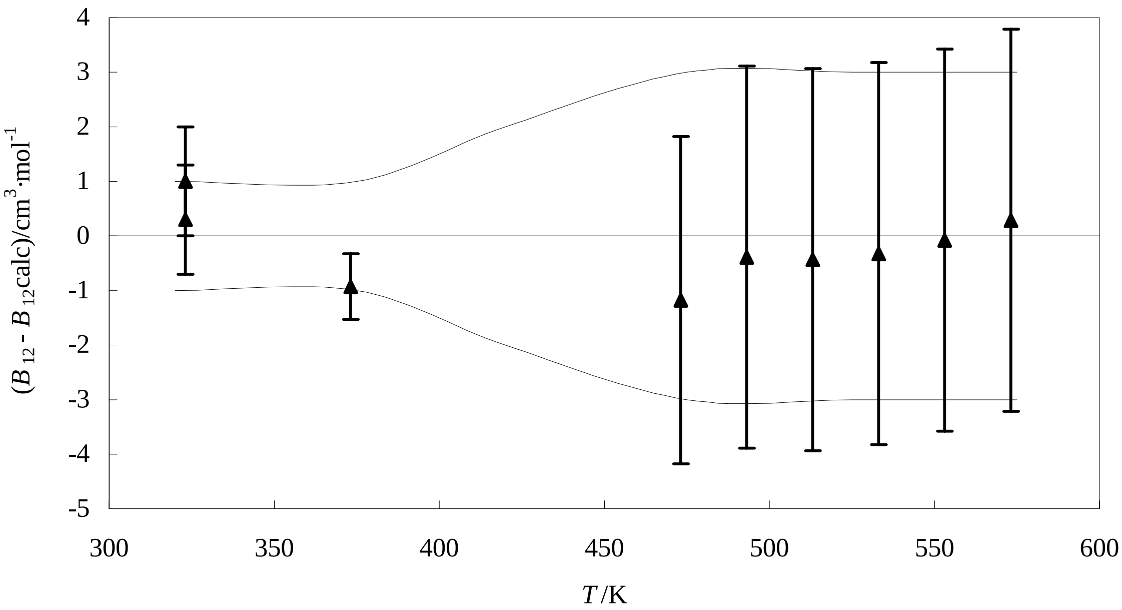

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 6. Experimental C_{112} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
493.20	1.0 ± 0.5	61-con	573.20	1.0 ± 0.5	61-con
533.20	1.0 ± 0.5	61-con			

Table 7. Experimental C_{122} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
493.20	8.0 ± 3.0	61-con	573.20	8.0 ± 3.0	61-con
533.20	8.0 ± 3.0	61-con			

Hydrogen [1333-74-0] H_2 MW = 2.02 268
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-18 ± 30	62-des/gol			

Hydrogen [1333-74-0] H_2 MW = 2.02 269
Methylcyclopentane [96-37-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-12 ± 30	62-des/gol			

Hydrogen [1333-74-0] H_2 MW = 2.02 270
1-Hexene [592-41-6] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-13 ± 9	68-cru/gai			

Hydrogen [1333-74-0] H_2 MW = 2.02 271
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	0 ± 10	62-des/gol	298.20	6 ± 6	66-cru/win

Hydrogen [1333-74-0] H_2 MW = 2.02 272
2-Methylpentane [107-83-5] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-7 ± 10	62-des/gol			

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **273**
3-Methylpentane **[96-14-0]** C_6H_{14} **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	3 ± 10	62-des/gol			

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **274**
2,2-Dimethylbutane **[75-83-2]** C_6H_{14} **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	26 ± 20	62-des/gol	298.20	9 ± 6	66-cru/win

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **275**
2,3-Dimethylbutane **[79-29-8]** C_6H_{14} **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	9 ± 10	62-des/gol			

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **276**
Toluene **[108-88-3]** C_7H_8 **MW = 92.14**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	19.0 ± 5.9	59-pra/ben	348.15	37.2 ± 6.0	59-pra/ben

Hydrogen **[1333-74-0]** H_2 **MW = 2.02** **277**
1-Heptene **[592-76-7]** C_7H_{14} **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-2 ± 9	68-cru/gai			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **278**
Heptane **[142-82-5]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-2 ± 9	68-cru/gai			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **279**
2-Methylhexane **[591-76-4]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-35 ± 30	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **280**
3-Methylhexane **[589-34-4]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-32 ± 30	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **281**
3-Ethylpentane **[617-78-7]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-36 ± 30	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **282**
2,2-Dimethylpentane **[590-35-2]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-14 ± 30	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **283**
2,3-Dimethylpentane **[565-59-3]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-6 ± 30	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **284**
2,4-Dimethylpentane **[108-08-7]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-5 ± 10	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **285**
3,3-Dimethylpentane **[562-49-2]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-12 ± 30	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **286**
2,2,3-Trimethylbutane **[464-06-2]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-6 ± 30	62-des/gol			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **287**
Octane **[111-65-9]** **C_8H_{18}** **MW = 114.23**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 1.0789 \cdot 10^2 - 3.2428 \cdot 10^4/(T/K)$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-0.2 ± 10	400	26.8 ± 8	500	43.0 ± 6
350	15.2 ± 10	450	35.8 ± 8	575	51.5 ± 6

cont.

Hydrogen + Octane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
313.15	9.0 ± 8.0	4.7	68-eve/gai (▲)	493.15	42.0 ± 6.0	-0.1	61-con (□)
338.20	22.0 ± 8.0	10.0	68-eve/gai (▲)	513.15	46.0 ± 6.0	1.3	61-con (□)
373.10	17.7 ± 5.0	-3.3	61-con (□)	533.15	48.0 ± 6.0	0.9	61-con (□)
373.10	18.2 ± 5.0	-2.8	61-con (□)	553.15	50.0 ± 6.0	0.7	61-con (□)
373.10	18.4 ± 5.0	-2.6	60-con (□)	573.15	51.0 ± 6.0	-0.3	61-con (□)
473.15	41.0 ± 6.0	1.6	61-con (□)				

Table 6. Experimental C_{112} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
493.15	2.0 ± 1.0	61-con	573.15	2.0 ± 1.0	61-con
533.15	2.0 ± 1.0	61-con			

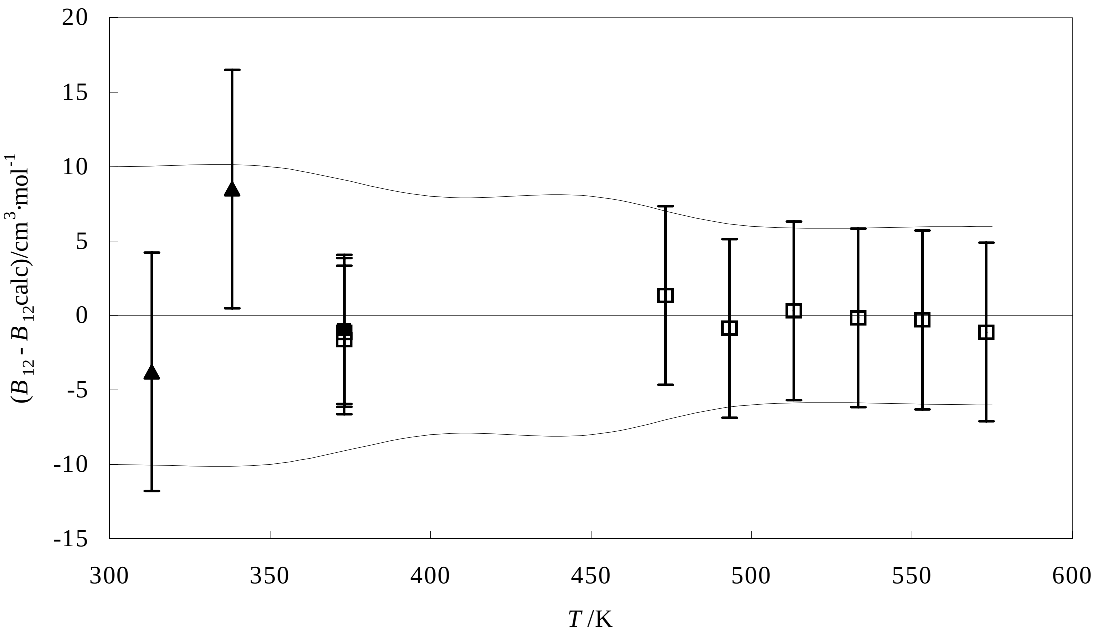

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 7. Experimental C_{122} values with uncertainty.

$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.	$\frac{T}{K}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot cm^6 \cdot mol^{-2}}$	Ref.
493.15	20.0 ± 10.0	61-con	573.15	20.0 ± 10.0	61-con
533.15	20.0 ± 10.0	61-con			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **288**
2,2,4-Trimethylpentane **[540-84-1]** **C_8H_{18}** **MW = 114.23**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.15	4.0 ± 8.0	68-eve/gai	348.15	55.7 ± 6.0	59-pra/ben
323.15	37.6 ± 5.9	59-pra/ben	348.15	19.0 ± 2.0	61-con
338.20	6.0 ± 8.0	68-eve/gai	348.15	18.4 ± 2.0	61-con

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
348.15	20.0 ± 10.0	61-con			

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
348.15	2.0 ± 1.0	61-con			

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **289**
Naphthalene **[91-20-3]** **$C_{10}H_8$** **MW = 128.17**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
295.20	-25.0 ± 3.7	62-kin/rob	343.20	-12.5 ± 1.4	62-kin/rob

Hydrogen **[1333-74-0]** **H_2** **MW = 2.02** **290**
Decane **[124-18-5]** **$C_{10}H_{22}$** **MW = 142.28**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	81.2 ± 6.9	59-pra/ben	348.15	95.3 ± 7.0	59-pra/ben

Deuterium hydride **[13983-20-5]** **DH** **MW = 3.02** **291**
Helium **[7440-59-7]** **He** **MW = 4.00**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
16.00	-30 ± 3	59-var/bee	20.00	-19 ± 2	59-var/bee
17.00	-27 ± 3	59-var/bee	20.40	-18 ± 1	59-bee/var
18.00	-24 ± 2	59-var/bee	21.00	-17 ± 2	59-var/bee
19.00	-21 ± 2	59-var/bee			

cont.

Deuterium hydride + Helium (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
20.40	0.500	60.6 ± 2.0	60-kna/kno				

Deuterium [7782-39-0] D_2 MW = 4.03 **292**
Helium [7440-59-7] He MW = 4.00

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
18.00	-25 ± 3	59-var/bee	20.40	-19 ± 1	59-bee/var
19.00	-23 ± 2	59-var/bee	21.00	-18 ± 2	59-var/bee
20.00	-20 ± 2	59-var/bee			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
20.40	0.500	65 ± 2	60-kna/kno				

Water [7732-18-5] H_2O MW = 18.02 **293**
Helium [7440-59-7] He MW = 4.00

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
473.15	-17 ± 4	79-skr	523.15	-5 ± 3	79-skr
498.15	-8 ± 3	79-skr			

Water [7732-18-5] H_2O MW = 18.02 **294**
Nitrogen [7727-37-9] N_2 MW = 28.01

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3{\cdot}mol^{-1} = 2.1501 \cdot 10^2 - 2.1529 \cdot 10^5/(T/K) + 7.2238 \cdot 10^7/(T/K)^2 - 9.0135 \cdot 10^9/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-33.8 ± 6	450	-5.6 ± 4	550	8.2 ± 8
400	-12.6 ± 6	500	1.3 ± 4	600	15.1 ± 10

cont.

Water + Nitrogen (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.00	-30.0 ± 1.4	4.6	80-wor/col (✶)	390.15	-13.0 ± 3.0	1.0	81-ric/wor (Δ)
298.15	-40.0 ± 6.0	-5.5	68-rig/pra (+)	390.20	-20.0 ± 3.0	-6.0	88-wor/lan (▲)
298.15	-31.0 ± 10	3.5	94-hal/igl (☐)	400.15	-16.0 ± 3.0	-3.5	81-ric/wor (Δ)
323.00	-23.0 ± 1.3	3.6	80-wor/col (✶)	400.20	-20.0 ± 3.0	-7.5	88-wor/lan (▲)
323.15	-28.0 ± 5.0	-1.4	68-rig/pra (+)	410.15	-12.0 ± 4.0	-0.9	81-ric/wor (Δ)
323.15	-25.0 ± 8.0	1.6	94-hal/igl (☐)	410.20	-10.0 ± 4.0	1.1	88-wor/lan (▲)
348.00	-18.0 ± 1.3	3.0	80-wor/col (✶)	420.15	-12.0 ± 4.0	-2.3	81-ric/wor (Δ)
348.15	-20.0 ± 4.0	1.0	68-rig/pra (+)	423.00	-6.0 ± 1.1	3.3	80-wor/col (✶)
348.15	-20.0 ± 6.0	1.0	94-hal/igl (☐)	423.20	-8.0 ± 4.0	1.3	88-wor/lan (▲)
373.00	-13.0 ± 1.2	3.6	80-wor/col (✶)	473.00	0.0 ± 1.0	2.4	80-wor/col (✶)
373.15	-15.5 ± 3.0	1.1	68-rig/pra (+)	473.15	-35.0 ± 10	-32.6	79-skr [1]
373.15	-15.0 ± 3.0	1.6	81-ric/wor (Δ)	498.15	-25.0 ± 10	-26.0	79-skr [1]
373.15	-15.5 ± 5.0	1.1	94-hal/igl (☐)	523.15	3.0 ± 0.2	-1.5	96-abd/baz (×)
373.20	-17.0 ± 3.0	-0.4	88-wor/lan (▲)	573.15	3.3 ± 0.2	-8.1	96-abd/baz (×)
380.15	-14.0 ± 3.0	1.5	81-ric/wor (Δ)	663.15	6.5 ± 0.2	-17.2	96-abd/baz (×)
380.20	-24.0 ± 3.0	-8.5	88-wor/lan (▲)				

[1] Not included in Figure 1.

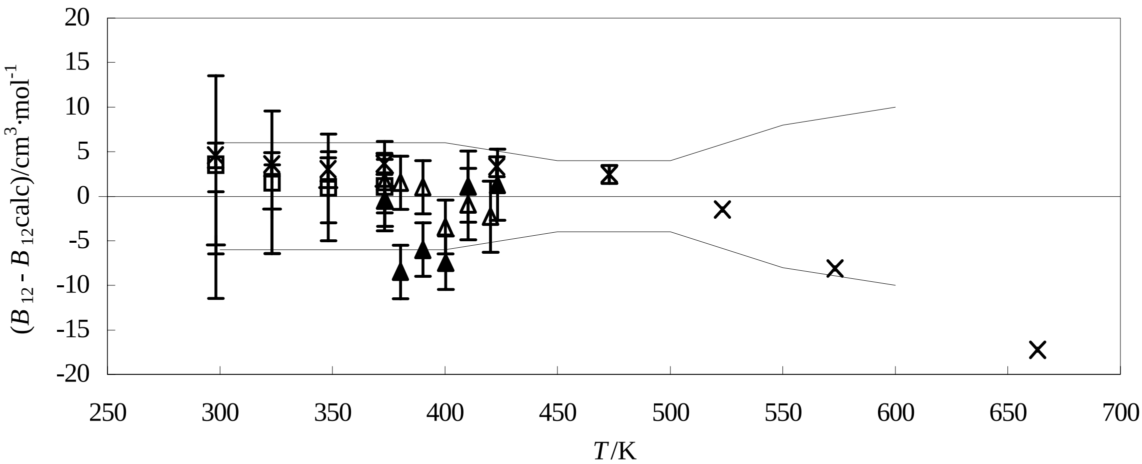

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
523.15	0.000	149.1 ± 0.6	96-abd/baz	523.15	0.942	-39.7 ± 1.2	96-abd/baz
523.15	0.268	-87.6 ± 1.2	96-abd/baz	573.15	0.000	115.9 ± 0.6	96-abd/baz
523.15	0.566	-0.3 ± 0.8	96-abd/baz	573.15	0.117	-94.3 ± 0.6	96-abd/baz
523.15	0.852	387.5 ± 1.5	96-abd/baz	573.15	0.222	-86.6 ± 0.6	96-abd/baz

cont.

Water + Nitrogen (cont.)

Table 3. (cont.)

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
573.15	0.476	-32.0	±	0.7	96-abd/baz	663.15	0.065	-65.7	±	1.0	96-abd/baz
573.15	0.746	-3.1	±	0.6	96-abd/baz	663.15	0.189	-49.8	±	0.3	96-abd/baz
573.15	0.882	4.3	±	0.5	96-abd/baz	663.15	0.334	-24.3	±	0.6	96-abd/baz
663.15	0.000	70.0	±	3.0	96-abd/baz	663.15	0.546	0.0	±	0.0	96-abd/baz

Table 5. Experimental C_m values with uncertainty.

T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
523.15	0.000	-8.8	±	0.2	96-abd/baz	573.15	0.746	8.6	±	0.1	96-abd/baz
523.15	0.268	-10.2	±	1.6	96-abd/baz	573.15	0.882	2.4	±	0.1	96-abd/baz
523.15	0.566	-42.0	±	0.2	96-abd/baz	663.15	0.000	1.0	±	0.1	96-abd/baz
523.15	0.852	-475.0	±	2.0	96-abd/baz	663.15	0.065	1.7	±	0.1	96-abd/baz
523.15	0.942	25.4	±	0.7	96-abd/baz	663.15	0.189	1.5	±	0.1	96-abd/baz
573.15	0.000	-0.6	±	0.2	96-abd/baz	663.15	0.334	1.1	±	0.1	96-abd/baz
573.15	0.117	3.5	±	0.5	96-abd/baz	663.15	0.546	0.5	±	0.1	96-abd/baz
573.15	0.222	10.0	±	0.5	96-abd/baz						

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot m^6 \cdot mol^{-2}$			Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
523.15	-854.2	±	5.0	96-abd/baz	623.15	-6.2	±	0.1	96-abd/baz
573.15	7.1		0.1	96-abd/baz					

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
523.15	502.1	±	8.0	96-abd/baz	623.15	7.4	±	0.1	96-abd/baz
573.15	17.6	±	0.2	96-abd/baz					

Water [7732-18-5] H_2O MW = 18.02 295
Nitrous oxide [10024-97-2] N_2O MW = 44.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
298.15	-188	±	9	71-coa/kin	348.15	-119	±	6	71-coa/kin
323.15	-152	±	9	71-coa/kin	373.15	-94	±	7	71-coa/kin

Water **[7732-18-5]** **H_2O** **MW = 18.02** **296**
Neon **[7440-01-9]** **Ne** **MW = 20.18**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
473.15	-4.5 ± 1	79-skr	498.15	-2.5 ± 1	79-skr

Water **[7732-18-5]** **H_2O** **MW = 18.02** **297**
Oxygen **[7782-44-7]** **O_2** **MW = 32.00**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 3.6866 \cdot 10 - 1.0140 \cdot 10^4/(T/K) - 3.3711 \cdot 10^6/(T/K)^2 + 2.1458 \cdot 10^8/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
200	-71.3 ± 9	300	-26.4 ± 4	400	-6.2 ± 4
250	-43.9 ± 5	350	-14.6 ± 4	450	0.0 ± 4

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
173.16	-93.8 ± 13.6	-1.0	96-wyl/fis (■)	328.16	-19.5 ± 1.5	-0.2	96-wyl/fis (■)
183.16	-84.3 ± 11.8	-0.2	96-wyl/fis (■)	333.16	-18.4 ± 1.6	-0.3	96-wyl/fis (■)
193.16	-76.0 ± 10.2	0.2	96-wyl/fis (■)	338.16	-17.4 ± 1.8	-0.3	96-wyl/fis (■)
203.16	-68.7 ± 8.9	0.4	96-wyl/fis (■)	343.16	-16.3 ± 1.9	-0.3	96-wyl/fis (■)
213.16	-62.2 ± 7.6	0.5	96-wyl/fis (■)	348.15	-11.5 ± 2.5	3.5	94-hal/igl (▲)
223.16	-56.4 ± 6.5	0.6	96-wyl/fis (■)	348.16	-15.3 ± 2.1	-0.3	96-wyl/fis (■)
233.16	-51.2 ± 5.5	0.5	96-wyl/fis (■)	353.16	-14.4 ± 2.3	-0.4	96-wyl/fis (■)
243.16	-46.5 ± 4.6	0.4	96-wyl/fis (■)	358.16	-13.4 ± 2.4	-0.3	96-wyl/fis (■)
253.16	-42.2 ± 3.8	0.4	96-wyl/fis (■)	363.16	-12.5 ± 2.6	-0.4	96-wyl/fis (■)
263.16	-38.3 ± 3.1	0.3	96-wyl/fis (■)	368.16	-11.7 ± 2.8	-0.5	96-wyl/fis (■)
273.16	-34.7 ± 2.5	0.2	96-wyl/fis (■)	373.15	-7.1 ± 2.0	3.3	94-hal/igl (▲)
278.16	-33.1 ± 2.2	0.1	96-wyl/fis (■)	373.16	-10.8 ± 2.9	-0.4	96-wyl/fis (■)
283.16	-31.4 ± 1.9	0.1	96-wyl/fis (■)	383.16	-9.2 ± 3.2	-0.5	96-wyl/fis (■)
288.16	-29.9 ± 1.7	0.1	96-wyl/fis (■)	393.16	-7.7 ± 3.5	-0.5	96-wyl/fis (■)
293.16	-28.4 ± 1.5	0.0	96-wyl/fis (■)	403.16	-6.3 ± 3.8	-0.5	96-wyl/fis (■)
298.15	-23.4 ± 9.0	3.6	94-hal/igl (▲)	413.16	-4.9 ± 4.0	-0.5	96-wyl/fis (■)
298.16	-27.0 ± 1.3	0.0	96-wyl/fis (■)	423.16	-3.6 ± 4.3	-0.5	96-wyl/fis (■)
303.16	-25.6 ± 1.2	0.0	96-wyl/fis (■)	433.16	-2.4 ± 4.5	-0.5	96-wyl/fis (■)
308.16	-24.3 ± 1.2	-0.1	96-wyl/fis (■)	443.16	-1.2 ± 4.8	-0.5	96-wyl/fis (■)
313.16	-23.1 ± 1.2	-0.2	96-wyl/fis (■)	453.16	-0.2 ± 5.0	-0.6	96-wyl/fis (■)
318.16	-21.8 ± 1.3	-0.2	96-wyl/fis (■)	463.16	0.9 ± 5.2	-0.5	96-wyl/fis (■)
323.15	-17.2 ± 5.0	3.2	94-hal/igl (▲)	473.16	1.9 ± 5.4	-0.5	96-wyl/fis (■)
323.16	-20.6 ± 1.4	-0.2	96-wyl/fis (■)				

Water + Oxygen (cont.)

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.16	1.4 ± 0.4	96-wyl/fis	333.16	1.1 ± 0.2	96-wyl/fis
283.16	1.4 ± 0.3	96-wyl/fis	343.16	1.1 ± 0.2	96-wyl/fis
293.16	1.3 ± 0.3	96-wyl/fis	353.16	1.0 ± 0.3	96-wyl/fis
303.16	1.3 ± 0.2	96-wyl/fis	363.16	1.0 ± 0.3	96-wyl/fis
313.16	1.2 ± 0.2	96-wyl/fis	373.16	0.9 ± 0.4	96-wyl/fis
323.16	1.2 ± 0.2	96-wyl/fis			

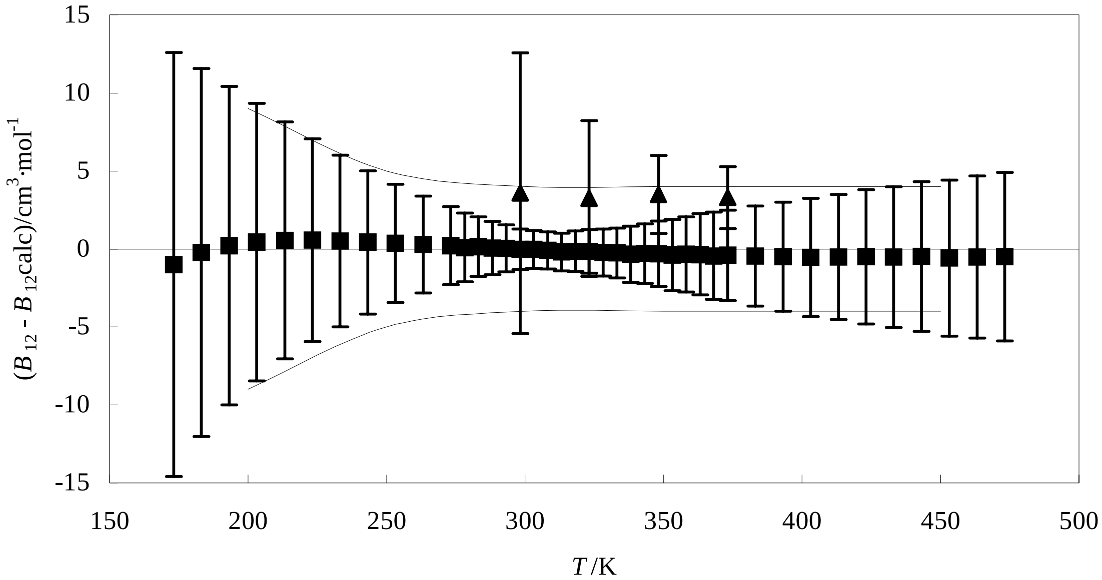

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water **[7732-18-5]** **H_2O** **MW = 18.02** **298**
Trichloromethane **[67-66-3]** **$CHCl_3$** **MW = 119.38**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-371 ± 20	81-lan/wor-1	393.20	-259 ± 15	81-lan/wor-1
373.20	-302 ± 20	81-lan/wor-1	403.20	-235 ± 15	81-lan/wor-1
383.20	-279 ± 15	81-lan/wor-1			

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**299**
Chloromethane	**[74-87-3]**	**CH_3Cl**	**MW = 50.49**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
363.20	-202 ± 6	88-wor/lan	403.20	-157 ± 4	88-wor/lan
373.20	-190 ± 4	88-wor/lan	413.20	-146 ± 3	88-wor/lan
383.20	-180 ± 7	88-wor/lan	423.20	-139 ± 4	88-wor/lan
393.20	-168 ± 4	88-wor/lan			

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**300**
Methane	**[74-82-8]**	**CH_4**	**MW = 16.04**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 6.7399 · 10 – 3.5456 · 10^4/(T/K)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
300	-50.8 ± 12	450	-11.4 ± 11	600	8.3 ± 10
350	-33.9 ± 12	500	-3.5 ± 10	650	12.9 ± 10
400	-21.2 ± 11	550	2.9 ± 10		

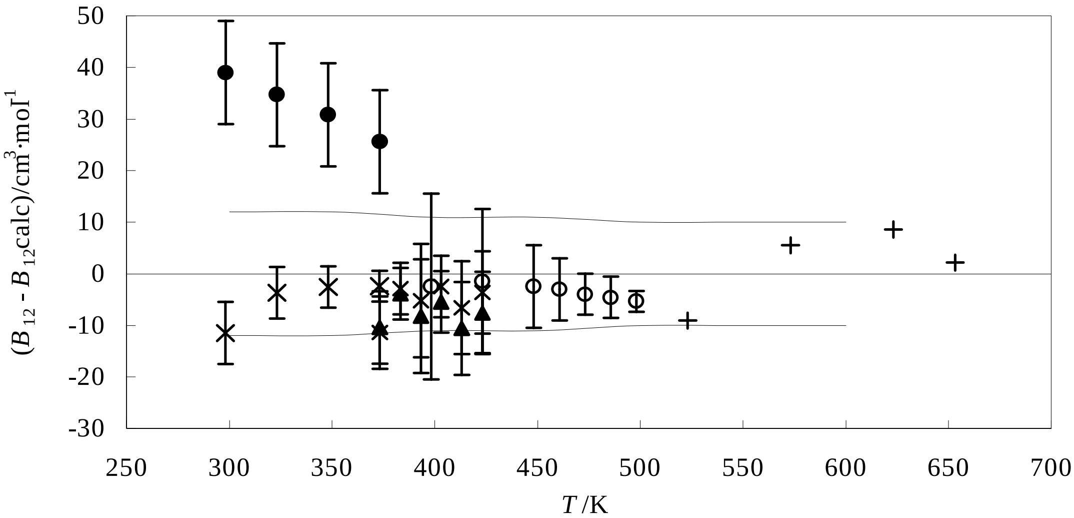

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Water + Methane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)
298.15	-63.0 ± 6.0	-11.5	68-rig/pra (×)	413.20	-29.0 ± 9.0	-10.6	83-smi/sel (▲)
298.20	-12.5 ± 10.0	39.0	90-woo/zen (●)	413.20	-25.0 ± 9.0	-6.6	88-wor/lan (✶)
323.15	-46.0 ± 5.0	-3.7	68-rig/pra (×)	423.15	-17.8 ± 14.0	-1.4	88-jof/eub (O)
323.20	-7.6 ± 5.0	34.7	90-woo/zen (●)	423.20	-24.0 ± 8.0	-7.6	83-smi/sel (▲)
348.15	-37.0 ± 4.0	-2.6	68-rig/pra (×)	423.20	-20.0 ± 8.0	-3.6	88-wor/lan (✶)
348.20	-3.6 ± 3.0	30.8	90-woo/zen (●)	448.15	-14.2 ± 8.0	-2.5	88-jof/eub (O)
373.15	-30.0 ± 3.0	-2.4	68-rig/pra (×)	460.65	-12.6 ± 6.0	-3.0	88-jof/eub (O)
373.20	-38.0 ± 7.0	-10.4	83-smi/sel (▲)	473.15	-11.5 ± 4.0	-4.0	88-jof/eub (O)
373.20	-39.0 ± 7.0	-11.4	88-wor/lan (✶)	473.15	-100.0 ± 50.0	-92.5	79-skr [1]
373.20	-2.0 ± 2.0	25.6	90-woo/zen (●)	485.65	-10.2 ± 4.0	-4.6	88-jof/eub (O)
383.20	-29.0 ± 5.0	-3.9	83-smi/sel (▲)	498.15	-9.1 ± 2.0	-5.3	88-jof/eub (O)
383.20	-28.0 ± 5.0	-2.9	88-wor/lan (✶)	498.15	-16.0 ± 8.0	-12.2	79-skr [1]
393.20	-31.0 ± 11.0	-8.2	83-smi/sel (▲)	523.15	-9.4 ± 0.1	-9.0	96-abd/baz (+)
393.20	-28.0 ± 11.0	-5.2	88-wor/lan (✶)	523.15	11.0 ± 5.0	11.4	79-skr [1]
398.15	-24.1 ± 18.0	-2.4	88-jof/eub (O)	573.15	11.1 ± 0.2	5.6	96-abd/baz (+)
403.20	-26.0 ± 6.0	-5.5	83-smi/sel (▲)	623.15	19.1 ± 0.2	8.6	96-abd/baz (+)
403.20	-23.0 ± 6.0	-2.5	88-wor/lan (✶)	653.15	15.3 ± 0.1	2.2	96-abd/baz (+)

[1] Not included in Figure 1.

Table 3. Experimental B_m values with uncertainty.

$\frac{T}{\text{K}}$	x_1	$\frac{B_m \pm \delta B_m}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.	$\frac{T}{\text{K}}$	x_1	$\frac{B_m \pm \delta B_m}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.
398.15	0.100	-20.6 ± 2.4	88-jof/eub	473.15	0.250	-18.9 ± 0.9	88-jof/eub
398.15	0.250	-39.6 ± 3.0	88-jof/eub	473.15	0.500	-57.8 ± 0.9	88-jof/eub
398.15	0.500	-106.0 ± 3.6	88-jof/eub	473.15	0.100	-7.2 ± 1.0	89-jof/eub
398.15	0.100	-20.5 ± 1.0	89-jof/eub	473.15	0.250	-18.7 ± 1.0	89-jof/eub
398.15	0.250	-40.1 ± 2.0	89-jof/eub	473.15	0.500	-58.3 ± 3.0	89-jof/eub
398.15	0.500	-103.9 ± 5.0	89-jof/eub	485.65	0.100	-5.8 ± 0.9	88-jof/eub
423.15	0.100	-15.2 ± 2.1	88-jof/eub	485.65	0.250	-16.7 ± 0.9	88-jof/eub
423.15	0.250	-31.1 ± 2.4	88-jof/eub	485.65	0.500	-53.0 ± 0.6	88-jof/eub
423.15	0.500	-83.4 ± 2.7	88-jof/eub	485.65	0.250	-16.7 ± 1.0	89-jof/eub
423.15	0.100	-15.2 ± 1.0	89-jof/eub	485.65	0.500	-53.2 ± 3.0	89-jof/eub
423.15	0.250	-31.1 ± 1.0	89-jof/eub	498.15	0.100	-4.3 ± 0.6	88-jof/eub
423.15	0.500	-85.7 ± 4.0	89-jof/eub	498.15	0.250	-14.7 ± 0.6	88-jof/eub
448.15	0.100	-11.0 ± 1.5	88-jof/eub	498.15	0.500	-48.5 ± 0.6	88-jof/eub
448.15	0.250	-24.2 ± 1.5	88-jof/eub	498.15	0.100	-4.5 ± 1.0	89-jof/eub
448.15	0.500	-69.4 ± 1.8	88-jof/eub	498.15	0.250	-4.7 ± 1.0	89-jof/eub
448.15	0.100	-11.3 ± 1.0	89-jof/eub	498.15	0.500	-49.2 ± 3.0	88-jof/eub
448.15	0.250	-24.5 ± 1.0	89-jof/eub	523.15	0.000	2.2 ± 0.8	93-abd/baz
448.15	0.500	-68.5 ± 3.0	89-jof/eub	523.15	0.536	-51.6 ± 1.7	93-abd/baz
460.65	0.100	-9.1 ± 1.2	88-jof/eub	523.15	0.678	-69.0 ± 1.6	93-abd/baz
460.65	0.250	-21.4 ± 1.2	88-jof/eub	523.15	0.790	-101.5 ± 1.2	93-abd/baz
460.65	0.500	-63.3 ± 1.5	88-jof/eub	523.15	1.000	-149.8 ± 0.4	93-abd/baz
460.65	0.250	-21.3 ± 1.0	89-jof/eub	523.15	0.000	-149.1 ± 0.3	96-abd/baz
460.65	0.500	-62.6 ± 3.0	89-jof/eub	523.15	0.210	-113.1 ± 0.3	96-abd/baz
473.15	0.100	-7.4 ± 0.9	88-jof/eub	523.15	0.322	-79.5 ± 0.3	96-abd/baz

cont.

Water + Methane (cont.)

Table 3. (cont.)

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
523.15	0.464	-46.9 ± 0.7	96-abd/baz	623.15	0.000	-912.7 ± 0.1	96-abd/baz
523.15	1.000	2.1 ± 0.1	96-abd/baz	623.15	0.188	-396.5 ± 0.1	96-abd/baz
573.15	0.000	5.8 ± 0.5	93-abd/baz	623.15	0.491	-190.4 ± 0.1	96-abd/baz
573.15	0.230	-7.2 ± 0.7	93-abd/baz	623.15	0.624	2.5 ± 0.3	96-abd/baz
573.15	0.433	-22.6 ± 0.2	93-abd/baz	623.15	0.847	6.9 ± 0.3	96-abd/baz
573.15	0.457	-24.7 ± 0.2	93-abd/baz	623.15	1.000	9.3 ± 0.2	96-abd/baz
573.15	0.656	-57.4 ± 0.1	93-abd/baz	653.15	0.000	11.4 ± 0.2	93-abd/baz
573.15	0.816	-86.3 ± 0.1	93-abd/baz	653.15	0.344	-3.5 ± 0.1	93-abd/baz
573.15	1.000	-115.8 ± 0.6	93-abd/baz	653.15	0.463	-14.8 ± 0.1	93-abd/baz
573.15	0.000	115.9 ± 0.3	96-abd/baz	653.15	0.770	-48.5 ± 0.1	93-abd/baz
573.15	0.184	-85.7 ± 0.2	96-abd/baz	653.15	0.826	-49.4 ± 0.2	93-abd/baz
573.15	0.344	-43.2 ± 0.7	96-abd/baz	653.15	0.950	-76.9 ± 0.2	93-abd/baz
573.15	0.543	-18.5 ± 0.2	96-abd/baz	653.15	1.000	-82.8 ± 2.2	93-abd/baz
573.15	0.567	-5.9 ± 0.2	96-abd/baz	653.15	0.000	-823.9 ± 0.5	96-abd/baz
573.15	1.000	6.2 ± 0.1	96-abd/baz	653.15	0.050	-728.6 ± 0.1	96-abd/baz
623.15	0.000	9.5 ± 0.2	93-abd/baz	653.15	0.173	-551.2 ± 0.1	96-abd/baz
623.15	0.153	7.3 ± 0.1	93-abd/baz	653.15	0.230	-481.2 ± 0.1	96-abd/baz
623.15	0.376	-14.9 ± 0.2	93-abd/baz	653.15	0.538	-2.0 ± 0.1	96-abd/baz
623.15	0.559	-30.0 ± 0.1	93-abd/baz	653.15	0.656	2.5 ± 0.2	96-abd/baz
623.15	0.813	-58.7 ± 0.0	93-abd/baz	653.15	1.000	119.1 ± 0.1	96-abd/baz
623.15	1.000	-90.2 ± 2.2	93-abd/baz				

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
398.15	0.100	1.3 ± 1.7	88-jof/eub	523.15	0.000	-8.8 ± 0.1	96-abd/baz
398.15	0.250	-4.0 ± 5.4	88-jof/eub	523.15	0.210	-1.1 ± 0.1	96-abd/baz
398.15	0.500	-29.0 ± 5.6	88-jof/eub	523.15	0.322	27.8 ± 0.1	96-abd/baz
423.15	0.100	1.4 ± 1.1	88-jof/eub	523.15	0.464	2.3 ± 0.1	96-abd/baz
423.15	0.250	-1.7 ± 2.4	88-jof/eub	523.15	1.000	1.2 ± 0.1	96-abd/baz
423.15	0.500	-14.9 ± 3.9	88-jof/eub	523.15	0.000	-1.3 ± 0.1	93-abd/baz-1
448.15	0.100	1.4 ± 0.7	88-jof/eub	523.15	0.536	-17.2 ± 6.6	93-abd/baz-1
448.15	0.250	0.1 ± 1.3	88-jof/eub	523.15	0.678	-14.9 ± 5.1	93-abd/baz-1
448.15	0.500	-6.2 ± 2.5	88-jof/eub	523.15	0.790	-9.1 ± 0.2	93-abd/baz-1
460.65	0.100	1.4 ± 0.6	88-jof/eub	523.15	1.000	-10.2 ± 0.1	93-abd/baz-1
460.65	0.250	0.4 ± 0.8	88-jof/eub	573.15	0.000	1.3 ± 0.1	93-abd/baz-1
460.65	0.500	-4.3 ± 1.8	88-jof/eub	573.15	0.230	8.3 ± 0.3	93-abd/baz-1
473.15	0.100	1.5 ± 0.5	88-jof/eub	573.15	0.433	1.9 ± 0.2	93-abd/baz-1
473.15	0.250	0.6 ± 0.4	88-jof/eub	573.15	0.457	-2.6 ± 0.2	93-abd/baz-1
473.15	0.500	-2.8 ± 1.3	88-jof/eub	573.15	0.656	0.7 ± 0.1	93-abd/baz-1
485.65	0.100	1.5 ± 0.4	88-jof/eub	573.15	0.816	0.9 ± 0.1	93-abd/baz-1
485.65	0.250	0.8 ± 0.2	88-jof/eub	573.15	1.000	-3.5 ± 0.2	93-abd/baz-1
485.65	0.500	-1.6 ± 0.1	88-jof/eub	573.15	0.000	-5.5 ± 0.1	96-abd/baz
498.15	0.100	1.5 ± 0.4	88-jof/eub	573.15	0.184	4.2 ± 0.1	96-abd/baz
498.15	0.250	0.9 ± 0.1	88-jof/eub	573.15	0.344	-3.8 ± 0.1	96-abd/baz
498.15	0.500	-1.0 ± 0.1	88-jof/eub	573.15	0.543	-1.6 ± 0.1	96-abd/baz

cont.

Water + Methane (cont.)

Table 5. (cont.)

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
573.15	0.567	-1.1 ± 0.1	96-abd/baz	653.15	0.000	1.2 ± 0.1	93-abd/baz-1
573.15	1.000	1.5 ± 0.1	96-abd/baz	653.15	0.344	1.3 ± 0.1	93-abd/baz-1
623.15	0.000	1.3 ± 0.1	93-abd/baz-1	653.15	0.462	1.1 ± 0.1	93-abd/baz-1
623.15	0.153	-1.1 ± 0.1	93-abd/baz-1	653.15	0.770	1.4 ± 0.1	93-abd/baz-1
623.15	0.376	2.1 ± 0.1	93-abd/baz-1	653.15	0.826	1.9 ± 0.1	93-abd/baz-1
623.15	0.559	1.7 ± 0.1	93-abd/baz-1	653.15	0.950	2.4 ± 0.1	93-abd/baz-1
623.15	0.812	2.6 ± 0.1	93-abd/baz-1	653.15	0.000	2.2 ± 0.1	96-abd/baz
623.15	1.000	-0.5 ± 0.1	93-abd/baz-1	653.15	0.050	2.0 ± 0.1	96-abd/baz
623.15	0.000	0.6 ± 0.1	96-abd/baz	653.15	0.173	1.6 ± 0.1	96-abd/baz
623.15	0.188	-6.5 ± 0.1	96-abd/baz	653.15	0.230	1.6 ± 0.1	96-abd/baz
623.15	0.491	-0.5 ± 0.1	96-abd/baz	653.15	0.537	-0.4 ± 0.1	96-abd/baz
623.15	0.624	-2.8 ± 0.1	96-abd/baz	653.15	0.656	0.6 ± 0.1	96-abd/baz
623.15	0.847	1.0 ± 0.1	96-abd/baz	653.15	1.000	1.2 ± 0.1	96-abd/baz
623.15	1.000	1.6 ± 0.1	96-abd/baz				

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
398.15	-22.6 ± 3.4	88-jof/eub	498.15	0.6 ± 0.1	88-jof/eub
423.15	-12.8 ± 1.9	88-jof/eub	523.15	410.4 ± 5.0	96-abd/baz
448.15	-3.3 ± 0.5	88-jof/eub	573.15	-9.7 ± 0.1	96-abd/baz
460.65	-2.0 ± 0.3	88-jof/eub	623.15	5.0 ± 0.1	96-abd/baz
473.15	-1.0 ± 0.2	88-jof/eub	653.15	-1.3 ± 0.1	96-abd/baz
485.65	-0.2 ± 0.0	88-jof/eub			

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
398.15	3.3 ± 0.7	88-jof/eub	498.15	1.2 ± 0.5	88-jof/eub
423.15	2.6 ± 0.7	88-jof/eub	523.15	-317.9 ± 5.0	96-abd/baz
448.15	1.7 ± 0.6	88-jof/eub	573.15	5.0 ± 0.1	96-abd/baz
460.65	1.6 ± 0.6	88-jof/eub	623.15	-14.6 ± 0.2	96-abd/baz
473.15	1.6 ± 0.6	88-jof/eub	653.15	1.1 ± 0.1	96-abd/baz
485.65	1.3 ± 0.5	88-jof/eub			

Water **[7732-18-5]** **H_2O** **MW = 18.02** **301**
Methanol **[67-56-1]** **CH_4O** **MW = 32.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 2.7643 \cdot 10^3 - 3.7597 \cdot 10^6/(T/\text{K}) + 1.7211 \cdot 10^9/(T/\text{K})^2 - 2.8931 \cdot 10^{11}/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
375	-508.8 ± 20	450	-266.2 ± 20	550	-120.8 ± 20
400	-398.5 ± 20	500	-185.2 ± 20		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
373.02	-516.0 ± 17.6	3.6	97-bic/hen (▲)	450.00	-267.0 ± 40.0	-0.8	81-nop/ram (×)
382.73	-456.2 ± 14.3	13.8	97-bic/hen (▲)	468.15	-218.8 ± 12.9	14.6	97-bic/hen (▲)
395.83	-407.5 ± 12.7	6.6	97-bic/hen (▲)	475.00	-228.0 ± 40.0	-5.8	81-nop/ram (×)
400.00	-420.0 ± 40.0	-21.5	81-nop/ram (×)	478.66	-207.4 ± 10.5	9.0	97-bic/hen (▲)
410.18	-355.6 ± 12.3	8.7	97-bic/hen (▲)	496.46	-183.7 ± 10.2	6.4	97-bic/hen (▲)
425.00	-326.0 ± 40.0	-3.8	81-nop/ram (×)	500.00	-201.0 ± 40.0	-15.8	81-nop/ram (×)
431.10	-293.0 ± 11.7	14.1	97-bic/hen (▲)	525.00	-181.0 ± 40.0	-29.0	81-nop/ram (×)
448.12	-280.8 ± 16.5	-10.9	97-bic/hen (▲)	527.00	-139.7 ± 11.4	9.8	97-bic/hen (▲)

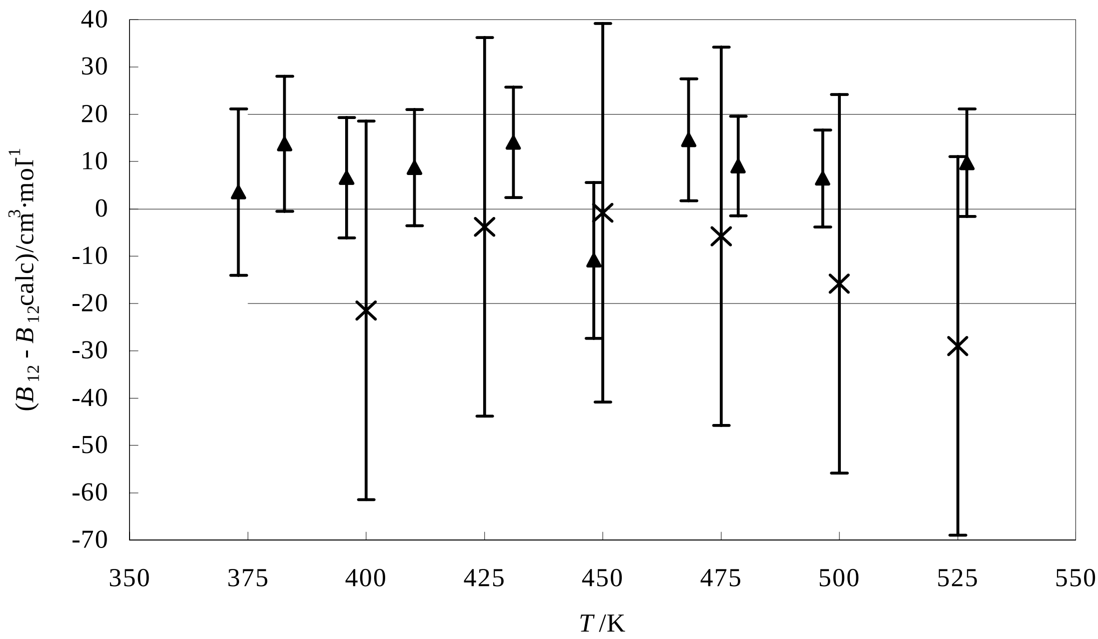

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water [7732-18-5] H_2O MW = 18.02 **302**
Ethene [74-85-1] C_2H_4 MW = 28.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-94 ± 6	85-lan/wor	383.20	-79 ± 4	85-lan/wor
363.20	-99 ± 8	88-wor/lan	383.20	-81 ± 7	88-wor/lan
373.60	-80 ± 4	85-lan/wor	393.30	-79 ± 5	88-wor/lan
373.60	-81 ± 5	88-wor/lan	393.40	-80 ± 4	85-lan/wor

Water [7732-18-5] H_2O MW = 18.02 **303**
Chloroethane [75-00-3] C_2H_5Cl MW = 64.51

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-221 ± 6	88-wor/lan	403.20	-198 ± 7	88-wor/lan
373.20	-234 ± 5	88-wor/lan	413.20	-178 ± 5	88-wor/lan
383.20	-222 ± 3	88-wor/lan	423.20	-175 ± 7	88-wor/lan
393.20	-208 ± 7	88-wor/lan			

Water [7732-18-5] H_2O MW = 18.02 **304**
Ethane [74-84-0] C_2H_6 MW = 30.07

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -2.9694 \cdot 10 + 2.9111 \cdot 10^4/(T/K) - 1.5954 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-109.9 ± 12	400	-56.6 ± 8	500	-35.3 ± 4
350	-76.8 ± 10	450	-43.8 ± 6		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / c $m^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.00	-110 ± 5.3	1.7	80-wor/col (▲)	373.15	-73 ± 40.0	-6.7	80-mal-1 (□)
298.15	-125 ± 6.0	-13.5	71-coa/kin (×)	373.60	-62 ± 10.0	4.1	85-lan/wor (●)
323.00	-94 ± 4.8	-1.5	80-wor/col (▲)	373.60	-59 ± 15.0	7.1	88-wor/lan (O)
323.15	-94 ± 3.0	-1.6	71-coa/kin (×)	383.20	-62 ± 10.0	0.4	85-lan/wor (●)
348.00	-82 ± 4.5	-4.2	80-wor/col (▲)	383.20	-59 ± 9.0	3.4	88-wor/lan (O)
348.15	-78 ± 5.0	-0.3	71-coa/kin (×)	393.30	-50 ± 9.0	8.8	88-wor/lan (O)
363.20	-63 ± 7.0	7.5	85-lan/wor (●)	393.40	-57 ± 8.0	1.8	85-lan/wor (●)
363.20	-61 ± 10.0	9.5	88-wor/lan (O)	423.00	-53 ± 3.6	-3.0	80-wor/col (▲)
373.00	-72 ± 4.2	-5.7	80-wor/col(▲)	473.00	-41 ± 3.2	-1.5	80-wor/col (▲)
373.15	-72 ± 2.0	-5.7	71-coa/kin (×)				

cont.

Water + Ethane (cont.)

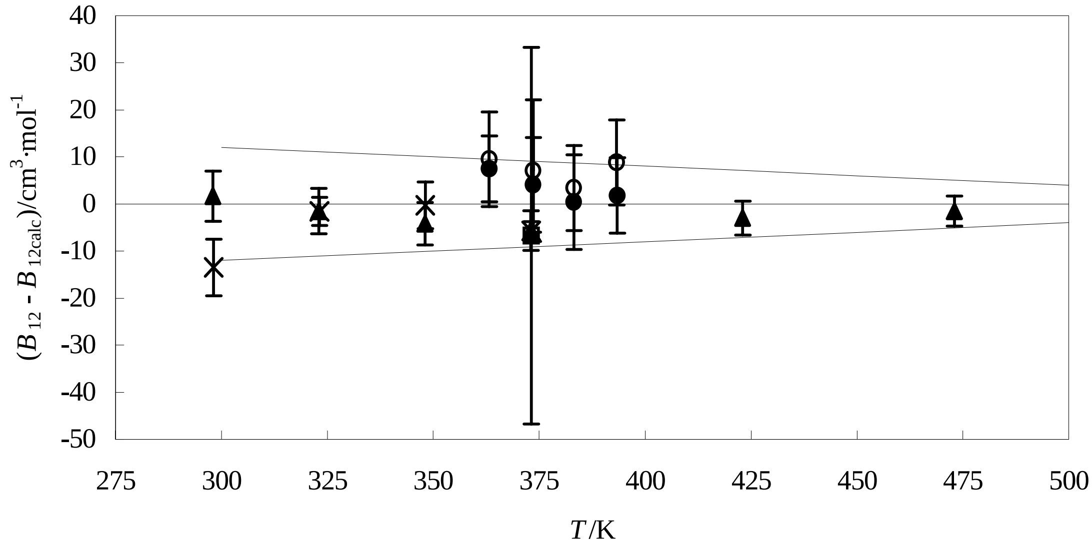

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**305**
Ethanol	**[64-17-5]**	**C_2H_6O**	**MW = 46.07**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = -1.6626 \cdot 10^3 + 1.6933 \cdot 10^6/(T/\text{K}) - 4.7847 \cdot 10^8/(T/\text{K})^2$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
400	-419.8 ± 20	500	-189.9 ± 14		
450	-262.5 ± 16	550	-165.6 ± 12		

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3\cdot\text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3\cdot\text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3\cdot\text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3\cdot\text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)
400.00	-422 ± 22.0	-2.2	81-nop/ram (▲)	475.00	-220 ± 13	-1.6	81-nop/ram (▲)
425.00	-325 ± 17.0	2.3	81-nop/ram (▲)	500.00	-191 ± 14	-1.1	81-nop/ram (▲)
450.00	-261 ± 15.0	1.5	81-nop/ram (▲)	525.00	-172 ± 13	1.2	81-nop/ram (▲)

cont.

Water + Ethanol (cont.)

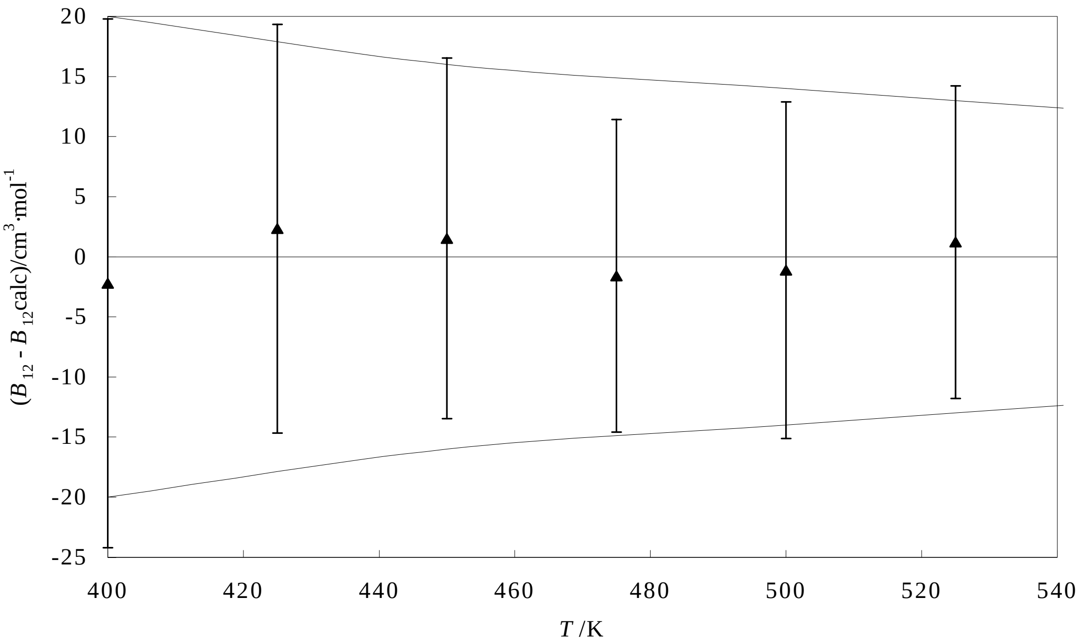

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**306**
Propene	**[115-07-1]**	**C_3H_6**	**MW = 42.08**	

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-122 ± 7	86-lan/wor	383.20	-113 ± 6	86-lan/wor
373.20	-116 ± 7	86-lan/wor	393.20	-105 ± 5	86-lan/wor
363.20	-127 ± 8	88-wor/lan	383.20	-115 ± 7	88-wor/lan
373.20	-120 ± 8	88-wor/lan	393.20	-105 ± 6	88-wor/lan

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**307**
Propane	**[74-98-6]**	**C_3H_8**	**MW = 44.10**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 1.9447 \cdot 10^2 - 1.0179 \cdot 10^5/(T/K)$

cont.

Water + Propane (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
350	-96.4 ± 10	400	-60.0 ± 10		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
363.20	-83.0 ± 8.0	2.8	86-lan/wor (▲)	383.20	-67.0 ± 7.0	4.2	88-wor/lan (■)
363.20	-90.0 ± 10.0	-4.2	88-wor/lan (■)	393.20	-68.0 ± 8.0	-3.6	86-lan/wor (▲)
373.20	-79.0 ± 10.0	-0.7	86-lan/wor (▲)	393.30	-68.0 ± 9.0	-3.6	88-wor/lan (■)
373.60	-82.0 ± 11.0	-4.0	88-wor/lan (■)	473.15	-80.0 ± 40.0	-59.3	79-skr [1]
377.60	-72.0 ± 40.0	3.1	80-mal-1 (□)	498.15	-45.0 ± 20.0	-35.1	79-skr [1]
383.20	-65.0 ± 6.0	6.2	86-lan/wor (▲)	523.15	-41.0 ± 20.0	-40.9	79-skr [1]

[1] Not included in Figure 1.

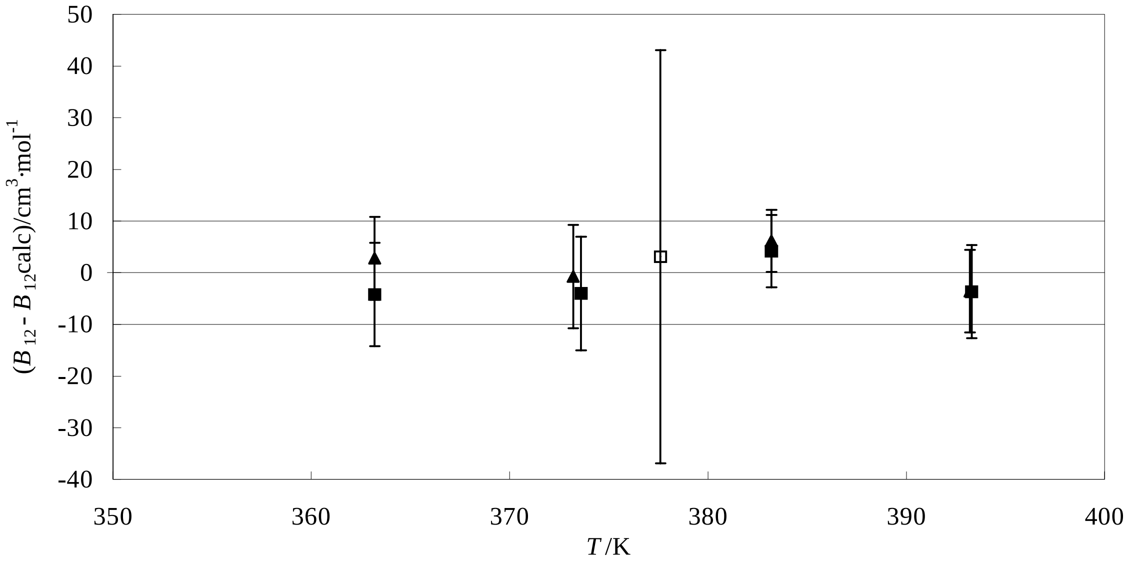

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water [7732-18-5] H_2O MW = 18.02 308
Tetrahydrofuran [109-99-9] C_4H_8O MW = 72.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-8800 ± 30	73-tre/boc	301.95	-5060 ± 30	73-tre/boc
298.25	-8670 ± 30	73-tre/boc	302.55	-4580 ± 30	73-tre/boc
299.05	-7800 ± 30	73-tre/boc	303.65	-4160 ± 30	73-tre/boc
299.25	-7350 ± 30	73-tre/boc	304.45	-4010 ± 30	73-tre/boc
299.75	-6850 ± 30	73-tre/boc	304.58	-3670 ± 30	73-tre/boc
300.65	-6070 ± 30	73-tre/boc			

Water [7732-18-5] H_2O MW = 18.02 309
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-95 ± 8	86-lan/wor	383.20	-97 ± 3	86-lan/wor
363.20	-107 ± 9	88-wor/lan	383.30	-104 ± 3	88-wor/lan
373.20	-94 ± 10	86-lan/wor	393.20	-91 ± 6	86-lan/wor
373.20	-105 ± 11	88-wor/lan	393.30	-96 ± 7	88-wor/lan

Water [7732-18-5] H_2O MW = 18.02 310
Pentane [109-66-0] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-121 ± 19	88-wor/lan	393.20	-107 ± 19	88-wor/lan
373.20	-123 ± 15	88-wor/lan	423.20	-86 ± 8	88-wor/lan
383.20	-113 ± 17	88-wor/lan			

Water [7732-18-5] H_2O MW = 18.02 311
Fluorobenzene [462-06-6] C_6H_5F MW = 96.10

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -8.1996 \cdot 10^2 + 7.8141 \cdot 10^5/(T/K) - 2.1661 \cdot 10^8/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
400	-220.2 ± 40	450	-153.2 ± 40	500	-123.6 ± 35
425	-180.6 ± 40	475	-134.9 ± 40	525	-117.4 ± 30

cont.

Water + Fluorobenzene (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
400.00	-221 ± 40	-0.8	81-nop/ram (▲)	475.00	-136 ± 40	-1.1	81-nop/ram (▲)
425.00	-179 ± 40	1.6	81-nop/ram (▲)	500.00	-124 ± 35	-0.4	81-nop/ram (▲)
450.00	-153 ± 40	0.2	81-nop/ram (▲)	525.00	-117 ± 30	0.4	81-nop/ram (▲)

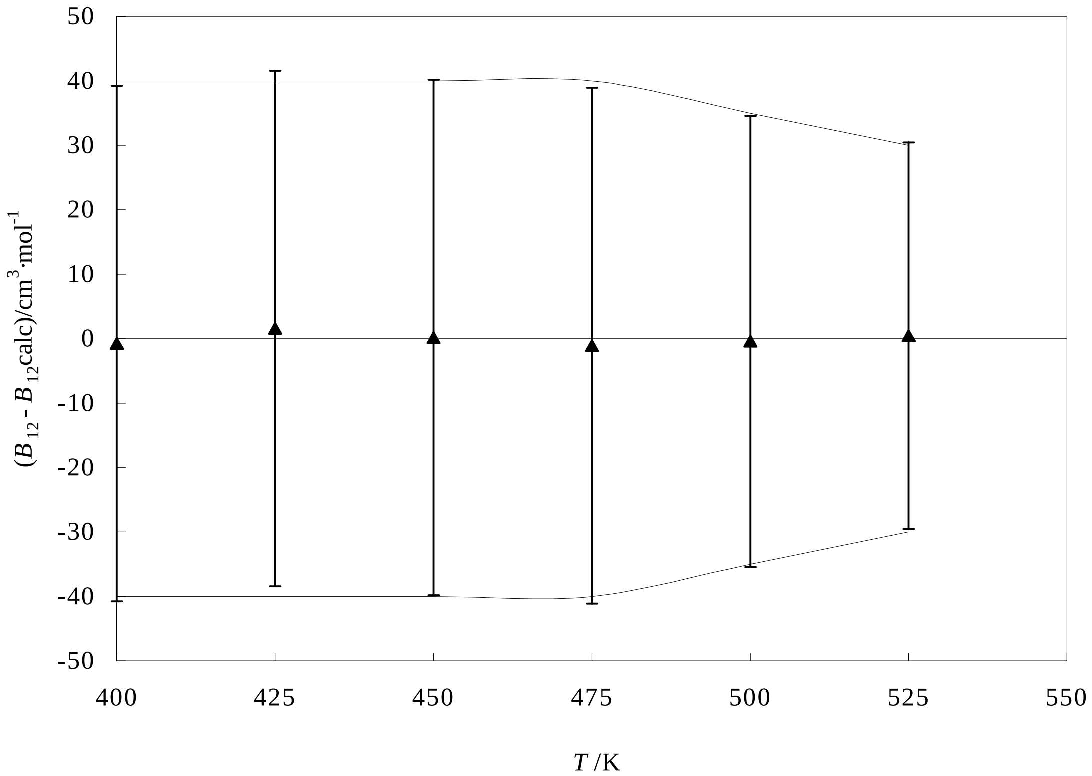

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**312**
Benzene	**[71-43-2]**	**C_6H_6**	**MW = 78.11**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-276.0 ± 8.0	85-wor/lan	383.20	-249.0 ± 11.0	88-wor/lan
363.20	-285.0 ± 7.0	88-wor/lan	393.20	-240.0 ± 6.0	85-wor/lan
373.20	-261.0 ± 8.0	85-wor/lan	393.20	-242.0 ± 7.0	88-wor/lan
373.20	-267.0 ± 6.0	88-wor/lan	403.20	-232.0 ± 7.0	97-wor/lan
383.20	-245.0 ± 10.0	85-wor/lan	413.20	-217.0 ± 10.0	97-wor/lan

cont.

Water + Benzene (cont.)

Table 2. (cont.)

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
423.20	-214.0 ± 7.0	97-wor/lan	623.15	-24.9 ± 0.8	96-abd/baz
433.20	-204.0 ± 7.0	97-wor/lan			

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
623.15	0.000	-91.3 ± 2.0	96-abd/baz	623.15	0.832	-186.1 ± 0.8	96-abd/baz
623.15	0.276	-52.9 ± 1.6	96-abd/baz	623.15	0.931	-236.8 ± 2.6	96-abd/baz
623.15	0.639	-145.2 ± 1.8	96-abd/baz	623.15	1.000	-254.4 ± 2.5	96-abd/baz

Table 5. Experimental C_m values with uncertainty.

T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
623.15	0.000	0.6 ± 0.1	96-abd/baz	623.15	0.832	17.3 ± 0.1	96-abd/baz
623.15	0.276	-5.2 ± 0.3	96-abd/baz	623.15	0.931	29.7 ± 0.2	96-abd/baz
623.15	0.639	12.3 ± 0.1	96-abd/baz	623.15	1.000	27.7 ± 0.4	96-abd/baz

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
623.15	18.4 ± 0.8	96-abd/baz			

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
623.15	-19.7 ± 0.8	96-abd/baz			

Water [7732-18-5] H_2O MW = 18.02 313
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-129.0 ± 12.0	85-wor/lan	393.20	-116.0 ± 26.0	85-wor/lan
363.20	-143.0 ± 6.0	88-wor/lan	393.30	-118.0 ± 1.3	88-wor/lan
373.20	-116.0 ± 12.0	85-wor/lan	403.20	-126.0 ± 10.0	97-wor/lan
373.20	-125.0 ± 7.0	88-wor/lan	413.20	-122.0 ± 12.0	97-wor/lan
382.80	-126.0 ± 9.0	88-wor/lan	423.20	-119.0 ± 12.0	97-wor/lan
383.20	-121.0 ± 16.0	85-wor/lan	433.20	-105.0 ± 9.0	97-wor/lan

Water **[7732-18-5]** **H_2O** **MW = 18.02** **314**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 1.6413 · 10^2 – 1.0807 · 10^5/(T/K)

T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}
350	-144.6 ± 15	450	-76.0 ± 10	550	-32.4 ± 10
400	-106.0 ± 10	500	-52.0 ± 10	600	-16.0 ± 10

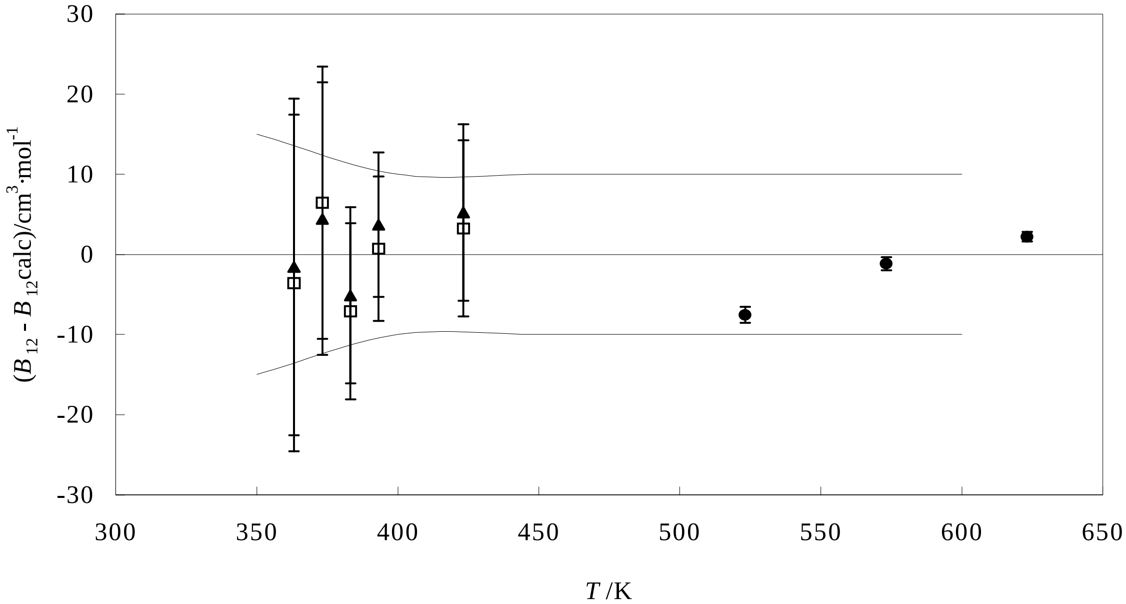

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
363.20	-137.0 ± 21.0	-3.6	84-smi/fah (□)	383.20	-123.0 ± 11.0	-5.1	88-wor/lan (▲)
363.20	-135.0 ± 21.0	-1.6	88-wor/lan (▲)	393.20	-110.0 ± 9.0	0.7	84-smi/fah (□)
373.20	-119.0 ± 17.0	6.4	84-smi/fah (□)	393.20	-107.0 ± 9.0	3.7	88-wor/lan (▲)
373.20	-121.0 ± 17.0	4.4	88-wor/lan (▲)	423.20	-88.0 ± 11.0	3.2	84-smi/fah (□)
383.20	-125.0 ± 11.0	-7.1	84-smi/fah (□)	423.20	-86.0 ± 11.0	5.2	88-wor/lan (▲)

cont.

Water + Hexane (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
473.15	-85.0 ± 30.0	-20.7	79-skr [1]	523.15	-50.0 ± 1.0	-7.6	96-abd/baz (●)
498.15	-89.0 ± 30.0	-36.2	79-skr [1]	573.15	-25.6 ± 0.8	-1.2	96-abd/baz (●)
523.15	-85.0 ± 30.0	-42.6	79-skr [1]	623.15	-7.1 ± 0.6	2.2	96-abd/baz (●)

[1] Not included in Figure 1.

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
523.15	0.013	-409.6 ± 0.4	92-abd/baz	573.15	0.081	-302.0 ± 2.0	96-abd/baz
523.15	0.048	-382.7 ± 0.2	92-abd/baz	573.15	0.156	-267.7 ± 1.5	96-abd/baz
523.15	0.141	-237.4 ± 1.1	92-abd/baz	573.15	0.410	-165.0 ± 1.1	96-abd/baz
523.15	0.353	-303.6 ± 0.2	92-abd/baz	573.15	0.700	-87.0 ± 0.7	96-abd/baz
523.15	0.000	-448.6 ± 3.7	96-abd/baz	573.15	1.000	-115.9 ± 0.3	96-abd/baz
523.15	0.060	-371.3 ± 1.5	96-abd/baz	623.15	0.025	-250.4 ± 1.3	92-abd/baz
523.15	0.193	-335.7 ± 1.2	96-abd/baz	623.15	0.069	-202.7 ± 1.3	92-abd/baz
523.15	0.440	-239.5 ± 1.5	96-abd/baz	623.15	0.183	-135.3 ± 0.6	92-abd/baz
523.15	0.723	-203.0 ± 0.7	96-abd/baz	623.15	0.461	-129.7 ± 0.1	92-abd/baz
523.15	1.000	-149.1 ± 0.3	96-abd/baz	623.15	0.000	-293.1 ± 3.0	96-abd/baz
573.15	0.018	-318.9 ± 0.5	92-abd/baz	623.15	0.107	-231.6 ± 0.8	96-abd/baz
573.15	0.037	-296.0 ± 0.6	92-abd/baz	623.15	0.262	-169.4 ± 0.3	96-abd/baz
573.15	0.127	-220.1 ± 0.5	92-abd/baz	623.15	0.517	-94.3 ± 0.2	96-abd/baz
573.15	0.328	-144.9 ± 0.3	92-abd/baz	623.15	0.803	-74.8 ± 0.8	96-abd/baz
573.15	0.000	-354.4 ± 3.0	96-abd/baz	623.15	1.000	-91.3 ± 0.1	96-abd/baz

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
523.15	0.013	60.8 ± 0.1	92-abd/baz	573.15	0.156	41.0 ± 0.2	96-abd/baz
523.15	0.048	75.8 ± 0.1	92-abd/baz	573.15	0.410	18.9 ± 0.1	96-abd/baz
523.15	0.141	105.7 ± 0.2	92-abd/baz	573.15	0.700	-4.0 ± 0.1	96-abd/baz
523.15	0.353	24.3 ± 0.5	92-abd/baz	573.15	1.000	-0.5 ± 0.1	96-abd/baz
523.15	0.000	69.6 ± 0.3	96-abd/baz	623.15	0.025	45.9 ± 0.4	92-abd/baz
523.15	0.060	50.4 ± 0.2	96-abd/baz	623.15	0.069	35.8 ± 0.4	92-abd/baz
523.15	0.193	58.5 ± 0.3	96-abd/baz	623.15	0.183	14.5 ± 0.4	92-abd/baz
523.15	0.440	58.3 ± 0.2	96-abd/baz	623.15	0.461	9.1 ± 0.1	92-abd/baz
523.15	0.723	56.7 ± 0.1	96-abd/baz	623.15	0.000	55.3 ± 0.2	96-abd/baz
523.15	1.000	-8.8 ± 0.1	96-abd/baz	623.15	0.107	39.1 ± 0.2	96-abd/baz
573.15	0.018	52.3 ± 0.2	92-abd/baz	623.15	0.262	25.0 ± 0.1	96-abd/baz
573.15	0.037	49.8 ± 0.2	92-abd/baz	623.15	0.517	7.5 ± 0.1	96-abd/baz
573.15	0.127	33.8 ± 0.0	92-abd/baz	623.15	0.803	1.4 ± 0.2	96-abd/baz
573.15	0.328	-9.0 ± 0.2	92-abd/baz	623.15	1.000	0.6 ± 0.1	96-abd/baz
573.15	0.081	49.6 ± 0.2	96-abd/baz				

cont.

Water + Hexane (cont.)

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
523.15	9.3 ± 0.1	96-abd/baz	623.15	4.2 ± 0.1	96-abd/baz
573.15	24.9 ± 0.2	96-abd/baz			

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
523.15	132.9 ± 1.0	96-abd/baz	623.15	0.3 ± 0.1	96-abd/baz
573.15	-19.7 ± 0.2	96-abd/baz			

Water **[7732-18-5]** **H_2O** **MW = 18.02** **315**
Toluene **[108-88-3]** **C_7H_8** **MW = 92.14**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 5.6094 \cdot 10^3 - 8.2825 \cdot 10^6/(T/K) + 4.0104 \cdot 10^9/(T/K)^2 - 6.5703 \cdot 10^{11}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
400	-297.9 ± 60	450	-201.9 ± 30	500	-170.2 ± 30
425	-234.8 ± 40	475	-183.4 ± 30	525	-157.1 ± 30

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
400.00	-304 ± 60.0	-6.1	81-nop/ram (×)	475.00	-183 ± 30	0.4	81-nop/ram (×)
425.00	-224 ± 40.0	10.8	81-nop/ram (×)	500.00	-168 ± 30	2.2	81-nop/ram (×)
450.00	-208 ± 30.0	-6.1	81-nop/ram (×)	525.00	-159 ± 30	-1.9	81-nop/ram (×)

cont.

Water + Toluene (cont.)

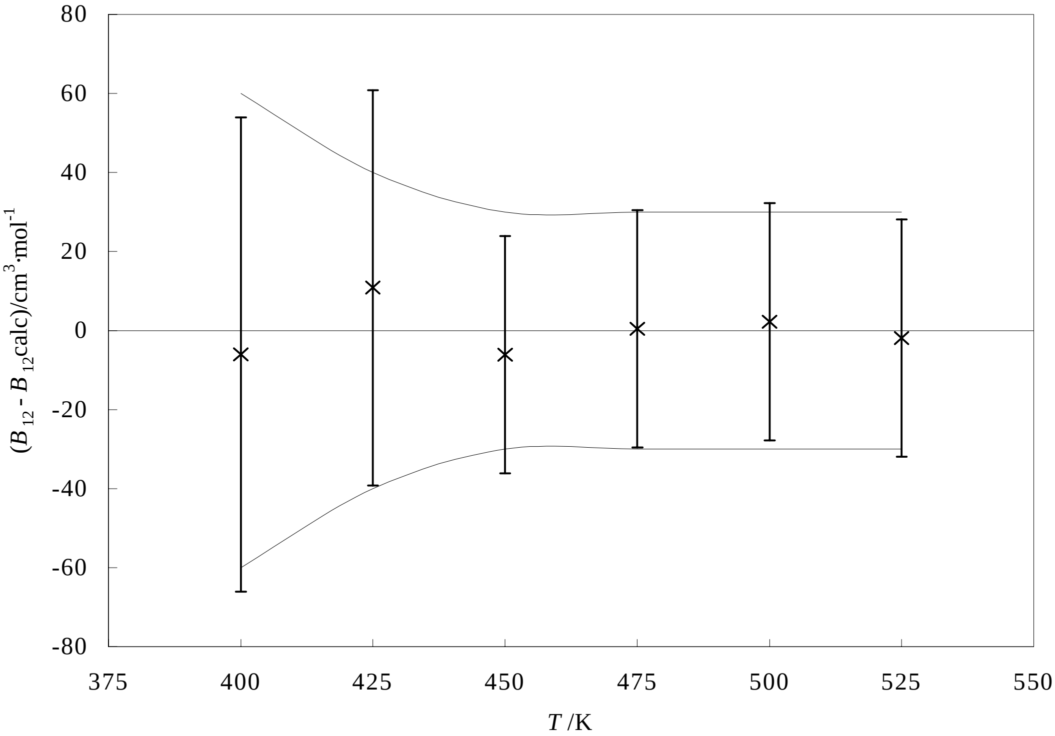

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**316**
Heptane	**[142-82-5]**	**C_7H_{16}**	**MW = 100.20**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = – 5.7138 · 10^2 + 4.7670 · 10^5/(T/K) – 1.2224 · 10^8/(T/K)^2

T/K	($B_{12} \pm 2\sigma_{est}$)/cm^3· mol^{-1}	T/K	($B_{12} \pm 2\sigma_{est}$)/cm^3· mol^{-1}	T/K	($B_{12} \pm 2\sigma_{est}$)/cm^3· mol^{-1}
300	-340.6 ± 30	400	-143.6 ± 30	500	-106.9 ± 30
350	-207.3 ± 30	450	-115.7 ± 30		

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp}-B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp}-B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
298.00	-336.0 ± 15.1	12.2	80-wor/col (×)	348.00	-242.0 ± 12.3	-31.1	80-wor/col (×)
323.00	-284.0 ± 13.5	-16.8	80-wor/col (×)	363.20	-137.0 ± 21.0	48.5	84-smi/fah (▲)

cont.

Water + Heptane (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$			$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$			$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
363.20	-158.0	±	21.0	27.5	88-wor/lan (■)	393.20	-122.0	±	13.0	27.7	88-wor/lan (■)
373.00	-207.0	±	11.2	-35.0	80-wor/col (×)	398.15	-185.0	±	15.0	-39.8	81-ric/wor (□)
373.15	-206.0	±	20.0	-34.2	81-ric/wor (□)	423.00	-154.0	±	9.6	-26.4	80-wor/col (×)
373.20	-119.0	±	24.0	52.7	84-smi/fah (▲)	423.15	-170.0	±	17.0	-42.5	81-ric/wor (□)
373.20	-144.0	±	24.0	27.7	88-wor/lan (■)	423.20	-96.0	±	13.0	31.5	84-smi/fah (▲)
383.20	-143.0	±	22.0	16.8	84-smi/fah (▲)	423.20	-101.0	±	13.0	26.5	88-wor/lan (■)
383.20	-156.0	±	22.0	3.8	88-wor/lan (■)	473.00	-116.0	±	8.5	-6.1	80-wor/col (×)
393.20	-113.0	±	13.0	36.7	84-smi/fah (▲)						

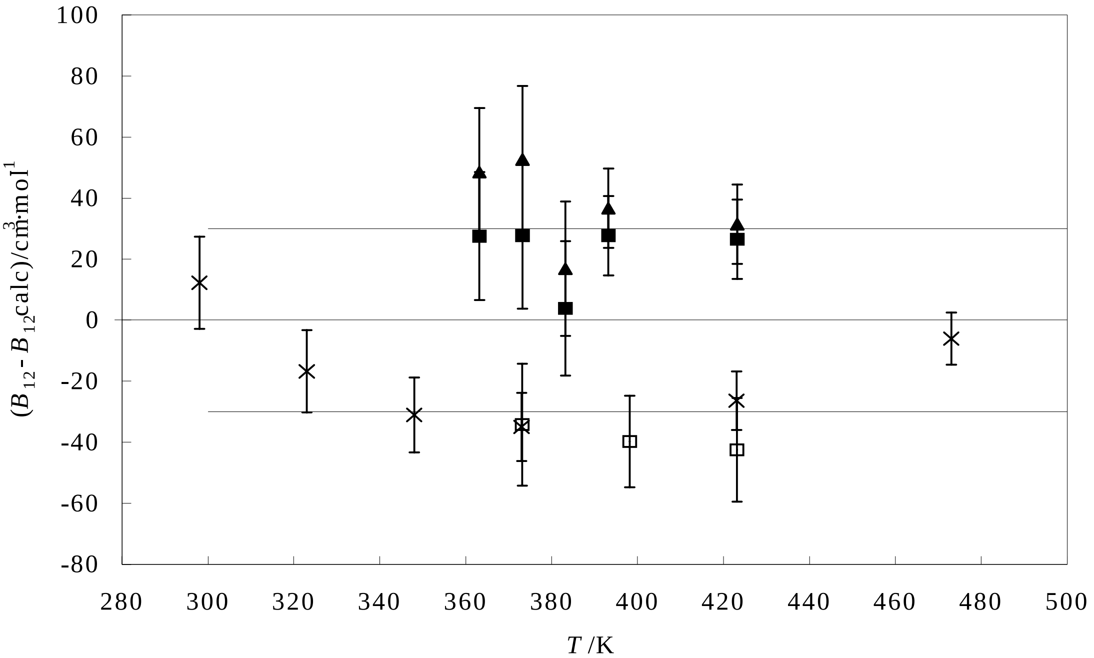

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Water	**[7732-18-5]**	**H_2O**	**MW = 18.02**	**317**
Octane	**[111-65-9]**	**C_8H_{18}**	**MW = 114.23**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 1.7899 \cdot 10^2 - 1.2172 \cdot 10^5/(T/K)$

cont.

Water + Octane (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
350	-168.8 ± 15	450	-91.5 ± 10	550	-42.3 ± 10
400	-125.3 ± 15	500	-64.5 ± 10	600	-23.9 ± 10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
363.20	-145.0 ± 22.0	11.1	84-smi/fah (□)	393.20	-115.0 ± 12.0	15.6	84-smi/fah (□)
363.20	-150.0 ± 22.0	6.1	88-wor/lan (▲)	393.20	-134.0 ± 12.0	-3.4	88-wor/lan (▲)
373.20	-137.0 ± 16.0	10.2	84-smi/fah (□)	423.20	-103.0 ± 10.0	5.6	84-smi/fah (□)
373.20	-141.0 ± 16.0	6.2	88-wor/lan (▲)	423.20	-123.0 ± 10.0	-14.4	88-wor/lan (▲)
383.20	-131.0 ± 13.0	7.7	84-smi/fah (□)	523.15	-90.0 ± 40.0	-36.3	79-skr (×)
383.20	-147.0 ± 13.0	-8.3	88-wor/lan (▲)	623.15	-16.3 ± 0.8	0.0	96-abd/baz (■)

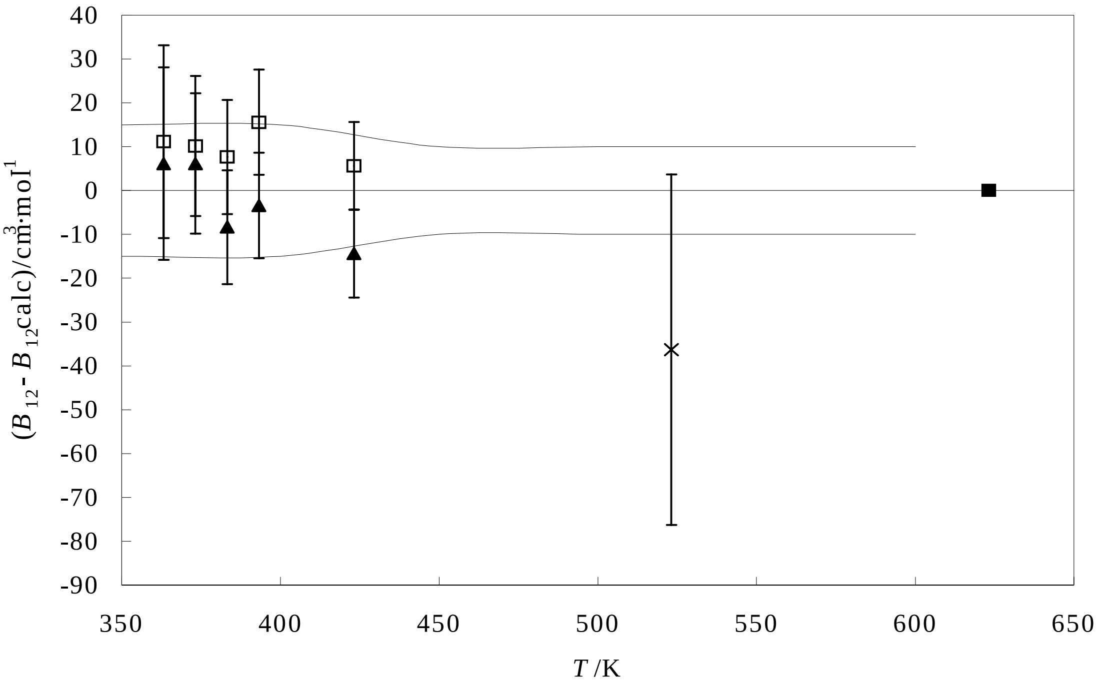

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Water + Octane (cont.)

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
623.15	0.000	-91.3 ± 0.1	96-abd/baz	623.15	0.715	-274.1 ± 0.1	96-abd/baz
623.15	0.232	-89.1 ± 1.0	96-abd/baz	623.15	0.847	-359.3 ± 1.2	96-abd/baz
623.15	0.545	-185.1 ± 0.7	96-abd/baz	623.15	1.000	-517.8 ± 2.0	96-abd/baz

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
623.15	0.000	0.6 ± 0.1	96-abd/baz	623.15	0.715	45.2 ± 0.1	96-abd/baz
623.15	0.232	3.2 ± 0.1	96-abd/baz	623.15	0.847	66.1 ± 0.1	96-abd/baz
623.15	0.545	24.6 ± 0.1	96-abd/baz	623.15	1.000	115.0 ± 0.5	96-abd/baz

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
623.15	2.3 ± 0.1	96-abd/baz			

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
623.15	8.0 ± 0.2	96-abd/baz			

Water [7732-18-5] H_2O MW = 18.02 318
1,2-Diphenoxyethane [104-66-5] $C_{14}H_{14}O_2$ MW = 214.26

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.20	-102 ± 19	84-smi/fah	393.20	-97 ± 19	84-smi/fah
373.20	-106 ± 15	84-smi/fah	423.20	-78 ± 80	84-smi/fah
383.20	-99 ± 17	84-smi/fah			

Hydrogen sulfide [7783-06-4] H_2S MW = 34.08 319
Nitrogen [7727-37-9] N_2 MW = 28.01

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
292.80	0.090	-9.5 ± 0.5	75-rob/ham	333.10	0.220	-18.0 ± 0.9	75-rob/ham
292.80	0.220	-26.4 ± 1.3	75-rob/ham	352.90	0.090	-0.3 ± 0.0	75-rob/ham
317.30	0.090	-4.9 ± 0.2	75-rob/ham	352.90	0.220	-13.3 ± 0.7	75-rob/ham
317.30	0.220	-21.5 ± 1.0	75-rob/ham	372.10	0.090	1.9 ± 0.1	75-rob/ham
333.10	0.090	-2.6 ± 0.1	75-rob/ham	372.10	0.220	-8.8 ± 0.4	75-rob/ham

Hydrogen sulfide **[7783-06-4]** **H_2S** **MW = 34.08** **320**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 5.4062 · 10 – 2.1818 · 10^4/(T/K) – 2.1814 · 10^6/(T/K)^2

T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ±2σ_{est})/cm^3· mol^{-1}
300	-42.9 ± 20	400	-14.1 ± 10	500	1.7 ± 2
350	-26.1 ± 15	450	-5.2 ± 5		

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
300.00	-42.9 ± 20	0.00	90-woo/zen (▲)	450.00	-5.2 ± 5	-0.01	90-woo/zen (▲)
350.00	-26.1 ± 15	-0.02	90-woo/zen (▲)	500.00	1.7 ± 2	0.00	90-woo/zen (▲)
400.00	-14.1 ± 10	0.02	90-woo/zen (▲)				

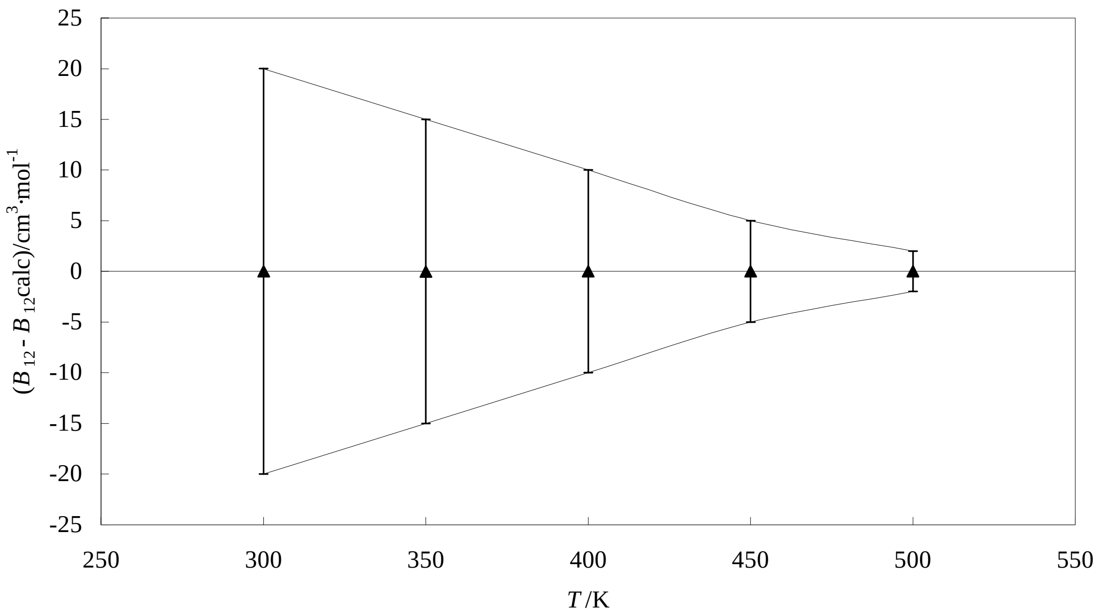

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Hydrogen sulfide **[7783-06-4]** **H_2S** **MW = 34.08** **321**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-128.5 ± 2.4	71-kho/rob	373.15	-95.2 ± 1.8	71-kho/rob
348.15	-110.4 ± 2.1	71-kho/rob	398.15	-79.3 ± 1.5	71-kho/rob

Ammonia **[7664-41-7]** **H_3N** **MW = 17.03** **322**
Helium **[7440-59-7]** **He** **MW = 4.00**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 3.6769 \cdot 10 - 8.1190 \cdot 10^3/(T/K)$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
240	2.9 ± 5	350	13.6 ± 4	450	18.7 ± 3
300	9.7 ± 5	400	16.5 ± 3		

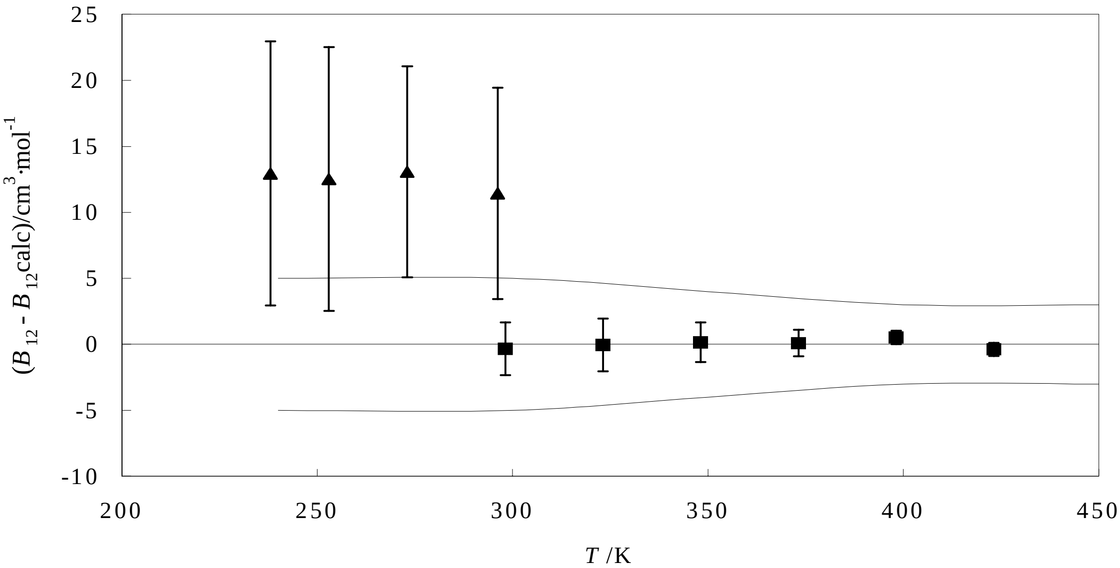

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Ammonia + Helium (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
238.00	15.6 ± 10.0	12.9	86-eli/hoa (▲)	323.15	11.6 ± 2.0	0.0	92-glo (■)
253.00	17.2 ± 10.0	12.5	86-eli/hoa (▲)	348.15	13.6 ± 1.5	0.2	92-glo (■)
273.00	20.1 ± 8.0	13.1	86-eli/hoa (▲)	373.15	15.1 ± 1.0	0.1	92-glo (■)
296.20	20.8 ± 8.0	11.4	86-eli/hoa (▲)	398.15	16.9 ± 0.5	0.5	92-glo (■)
298.15	9.2 ± 2.0	-0.3	92-glo (■)	423.15	17.2 ± 0.5	-0.4	92-glo (■)

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
298.15	12.6 ± 0.1	92-glo	373.15	2.2 ± 0.1	92-glo
323.15	6.5 ± 0.1	92-glo	398.15	1.4 ± 0.1	92-glo
348.15	3.7 ± 0.1	92-glo	423.15	1.3 ± 0.1	92-glo

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
298.15	-0.7 ± 0.1	92-glo	373.15	-0.5 ± 0.1	92-glo
323.15	-0.4 ± 0.1	92-glo	398.15	-0.5 ± 0.1	92-glo
348.15	-0.4 ± 0.1	92-glo	423.15	-0.4 ± 0.1	92-glo

Ammonia [7664-41-7] H_3N MW = 17.03 323
Nitrogen [7727-37-9] N_2 MW = 28.01

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = - 1.4663 \cdot 10 + 2.5143 \cdot 10^4/(T/K) - 9.6702 \cdot 10^6/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-38.3 ± 3	400	-12.2 ± 3		
350	-21.8 ± 3	450	-6.5 ± 3		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.15	-39.3 ± 3.0	-0.2	92-glo (▲)	373.15	-16.6 ± 3.0	0.1	92-glo (▲)
323.15	-29.0 ± 3.0	0.5	92-glo (▲)	398.15	-12.9 ± 3.0	-0.4	92-glo (▲)
348.15	-22.5 ± 3.0	-0.3	92-glo (▲)	423.15	-9.0 ± 3.0	0.3	92-glo (▲)

cont.

Ammonia + Nitrogen (cont.)

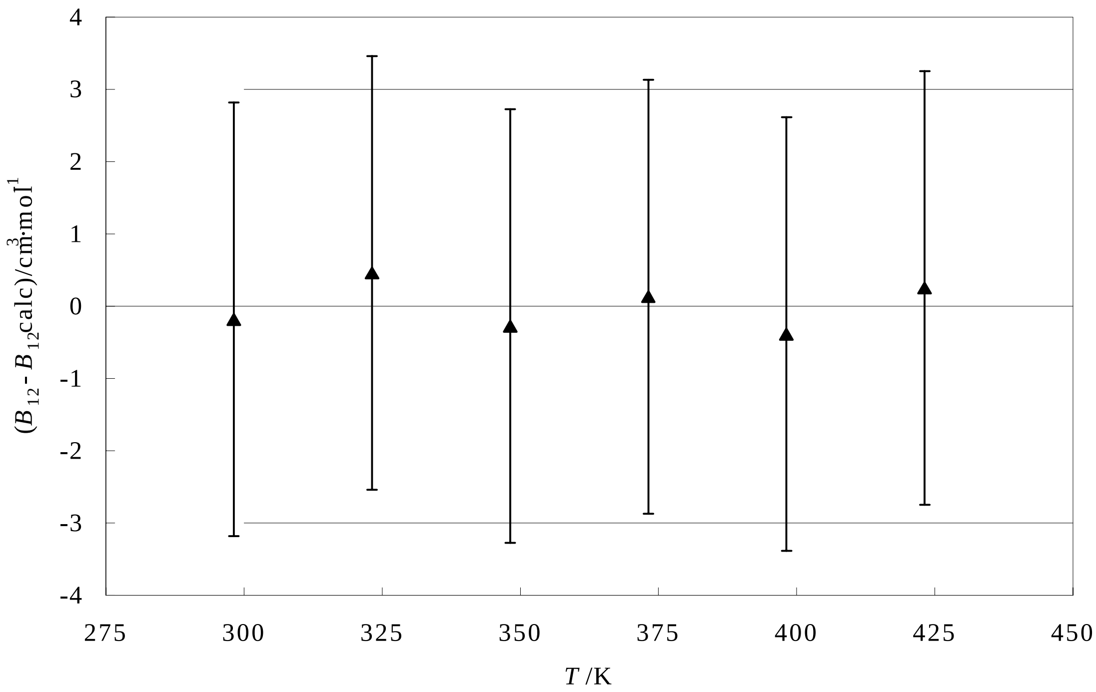

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 6. Experimental C_{112} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot \text{cm}^6 \cdot \text{mol}^{-2}}$	Ref.	$\frac{T}{\text{K}}$	$\frac{C_{112} \pm \delta C_{112}}{10^3 \cdot \text{cm}^6 \cdot \text{mol}^{-2}}$	Ref.
298.15	18.1 ± 0.1	92-glo	373.15	4.5 ± 0.1	92-glo
323.15	10.0 ± 0.1	92-glo	398.15	2.9 ± 0.1	92-glo
348.15	6.6 ± 0.1	92-glo	423.15	1.5 ± 0.1	92-glo

Table 7. Experimental C_{122} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot \text{cm}^6 \cdot \text{mol}^{-2}}$	Ref.	$\frac{T}{\text{K}}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot \text{cm}^6 \cdot \text{mol}^{-2}}$	Ref.
298.15	-3.5 ± 0.1	92-glo	373.15	-0.5 ± 0.1	92-glo
323.15	-2.5 ± 0.1	92-glo	398.15	0.6 ± 0.1	92-glo
348.15	-1.5 ± 0.1	92-glo	423.15	1.6 ± 0.1	92-glo

Ammonia **[7664-41-7]** **H_3N** **MW = 17.03** **324**
Neon **[7440-01-9]** **Ne** **MW = 20.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.00	14 ± 5	78-myr/tra	323.00	14 ± 5	78-myr/tra

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
298.00	0.1 ± 0.1	78-myr/tra	323.00	1.0 ± 0.1	78-myr/tra

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
298.00	0.2 ± 0.1	78-myr/tra	323.00	0.1 ± 0.1	78-myr/tra

Ammonia **[7664-41-7]** **H_3N** **MW = 17.03** **325**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -7.5406 \cdot 10 + 6.6052 \cdot 10^4/(T/K) - 1.8725 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-63.3 ± 4	400	-27.3 ± 1		
350	-39.5 ± 2	450	-21.1 ± 1		

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.15	-66.0 ± 4.0	-1.5	92-glo (▲)	373.15	-33.3 ± 1.5	-0.4	92-glo (▲)
323.15	-49.5 ± 3.0	0.8	92-glo (▲)	398.15	-28.0 ± 1.0	-0.4	92-glo (▲)
348.15	-39.0 ± 2.0	1.2	92-glo (▲)	423.15	-23.6 ± 1.0	0.3	92-glo (▲)

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
298.15	18.2 ± 0.1	92-glo	373.15	7.0 ± 0.1	92-glo
323.15	12.4 ± 0.1	92-glo	398.15	5.5 ± 0.1	92-glo
348.15	8.8 ± 0.1	92-glo	423.15	4.2 ± 0.1	92-glo

cont.

Ammonia + Methane (cont.)

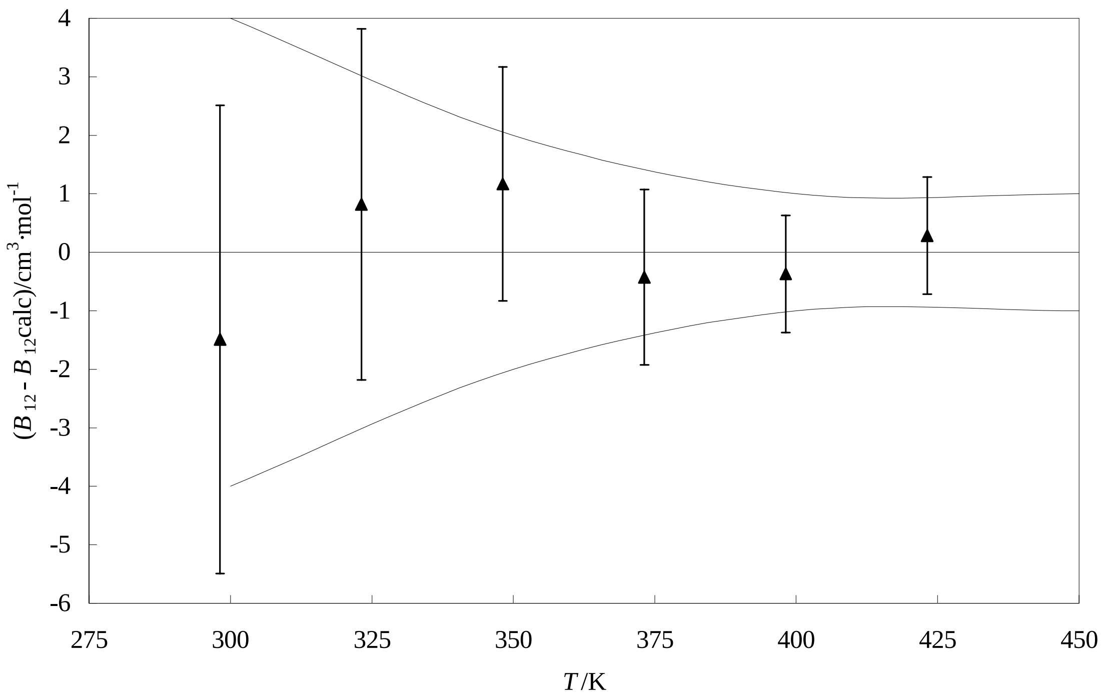

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 7. Experimental C_{122} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot \text{cm}^6 \cdot \text{mol}^{-2}}$	Ref.	$\frac{T}{\text{K}}$	$\frac{C_{122} \pm \delta C_{122}}{10^3 \cdot \text{cm}^6 \cdot \text{mol}^{-2}}$	Ref.
298.15	-10.0 ± 0.1	92-glo	373.15	-4.9 ± 0.1	92-glo
323.15	-8.0 ± 0.1	92-glo	398.15	-3.3 ± 0.1	92-glo
348.15	-6.5 ± 0.1	92-glo	423.15	-1.8 ± 0.1	92-glo

Ammonia	**[7664-41-7]**	**H_3N**	**MW = 17.03**	**326**
Ethene	**[74-85-1]**	**C_2H_4**	**MW = 28.05**	

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{12} \pm \delta B_{12}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.	$\frac{T}{\text{K}}$	$\frac{B_{12} \pm \delta B_{12}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.
302.84	-221.0 ± 6.6	71-rae/fre	313.84	-195.0 ± 5.9	71-rae/fre

Ammonia **[7664-41-7]** **H_3N** **MW 17.03** **327**
3,7-Dihydro-1,3,7-trimethyl-1*H*-purine-2,6-dione
[58-08-2] **$C_8H_{10}N_4O_2$** **MW = 194.19**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
346.45	-1750 ± 100	88-kim/len	456.95	-435 ± 40	88-kim/len
396.65	-930 ± 80	88-kim/len	497.15	-302 ± 40	88-kim/len
416.65	-749 ± 50	88-kim/len			

Helium **[7440-59-7]** **He** **MW = 4.00** **328**
Krypton **[7439-90-9]** **Kr** **MW = 83.80**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3\ mol^{-1}} = 2.2445 \cdot 10 + 1.2894 \cdot 10^3/(T/\mathrm{K}) - 5.1960 \cdot 10^5/(T/\mathrm{K})^2 + 2.1073 \cdot 10^7/(T/\mathrm{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
100	4.5 ± 1	200	18.5 ± 1	300	21.8 ± 1
150	14.2 ± 1	250	20.6 ± 1	350	22.4 ± 1

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
90.00	1.7 ± 0.6	0.2	73-kat/rob (□)	198.20	17.7 ± 2.0	-0.7	67-bre (×)
95.00	3.0 ± 1.1	0.0	73-kat/rob (□)	223.00	19.7 ± 0.3	0.0	78-dil/wax (▲)
100.00	4.1 ± 1.0	-0.4	73-kat/rob (□)	223.20	18.3 ± 2.0	-1.4	67-bre (×)
105.00	5.7 ± 1.0	-0.1	73-kat/rob (□)	273.00	21.2 ± 0.3	0.0	78-dil/wax (▲)
110.00	7.0 ± 1.3	-0.1	73-kat/rob (□)	273.20	18.3 ± 2.0	-2.9	67-bre (×)
115.00	8.5 ± 0.7	0.3	73-kat/rob (□)	323.00	22.1 ± 0.3	0.0	78-dil/wax (▲)
148.20	15.3 ± 2.0	1.3	67-bre (×)	323.20	21.0 ± 2.0	-1.1	67-bre (×)
173.20	16.1 ± 2.0	-0.5	67-bre (×)				

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
223.00	0.000	-93.0 ± 0.1	78-dil/wax	273.00	0.746	10.7 ± 0.1	78-dil/wax
223.00	0.497	-10.7 ± 0.1	78-dil/wax	273.00	1.000	11.9 ± 0.1	78-dil/wax
223.00	0.746	8.2 ± 0.1	78-dil/wax	323.00	0.000	-41.7 ± 0.1	78-dil/wax
223.00	1.000	12.0 ± 0.1	78-dil/wax	323.00	0.248	-14.7 ± 0.1	78-dil/wax
273.00	0.000	-61.5 ± 0.1	78-dil/wax	323.00	0.497	3.4 ± 0.1	78-dil/wax
273.00	0.248	-26.2 ± 0.1	78-dil/wax	323.00	0.746	12.2 ± 0.1	78-dil/wax
273.00	0.497	-2.0 ± 0.1	78-dil/wax	323.00	1.000	11.7 ± 0.1	78-dil/wax

cont.

Helium + Krypton (cont.)

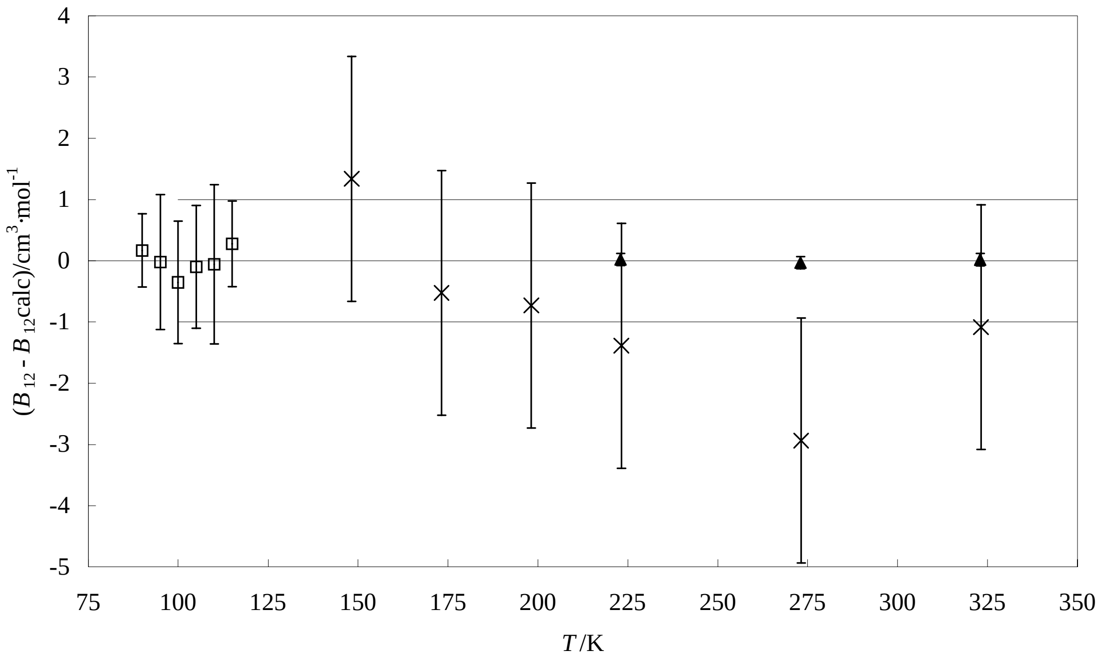

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_2	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
223.00	0.238	60.2 ± 0.2	78-dil/wax	323.00	0.736	37.1 ± 0.3	78-dil/wax
273.00	0.487	46.0 ± 0.3	78-dil/wax				

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
223.00	0.000	3.1 ± 0	78-dil/wax	273.00	0.746	0.4 ± 0	78-dil/wax
223.00	0.497	0.9 ± 0	78-dil/wax	273.00	1.000	0.1 ± 0	78-dil/wax
223.00	0.746	0.4 ± 0	78-dil/wax	323.00	0.000	2.1 ± 0	78-dil/wax
223.00	1.000	0.1 ± 0	78-dil/wax	323.00	0.248	1.3 ± 0	78-dil/wax
273.00	0.000	2.5 ± 0	78-dil/wax	323.00	0.497	0.7 ± 0	78-dil/wax
273.00	0.248	1.4 ± 0	78-dil/wax	323.00	0.746	0.3 ± 0	78-dil/wax
273.00	0.497	0.8 ± 0	78-dil/wax	323.00	1.000	0.1 ± 0	78-dil/wax

Table 6. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
90.00	0.6 ± 0.1	73-kat/rob	95.00	0.6 ± 0.1	73-kat/rob

cont.

Helium + Krypton (cont.)

Table 6. (cont.)

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
100.00	0.6 ± 0.1	73-kat/rob	110.00	0.4 ± 0.1	73-kat/rob
105.00	0.5 ± 0.1	73-kat/rob	115.00	0.6 ± 0.1	73-kat/rob

Helium **[7440-59-7]** **He** **MW = 4.00** **329**
Nitric oxide **[10102-43-9]** **NO** **MW = 30.01**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 2.5168 \cdot 10 - 4.8809 \cdot 10^2/(T/K) - 2.3549 \cdot 10^5/(T/K)^2$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
125	6.2 ± 6	200	16.8 ± 5	300	20.9 ± 4
150	11.4 ± 5	250	19.4 ± 5		

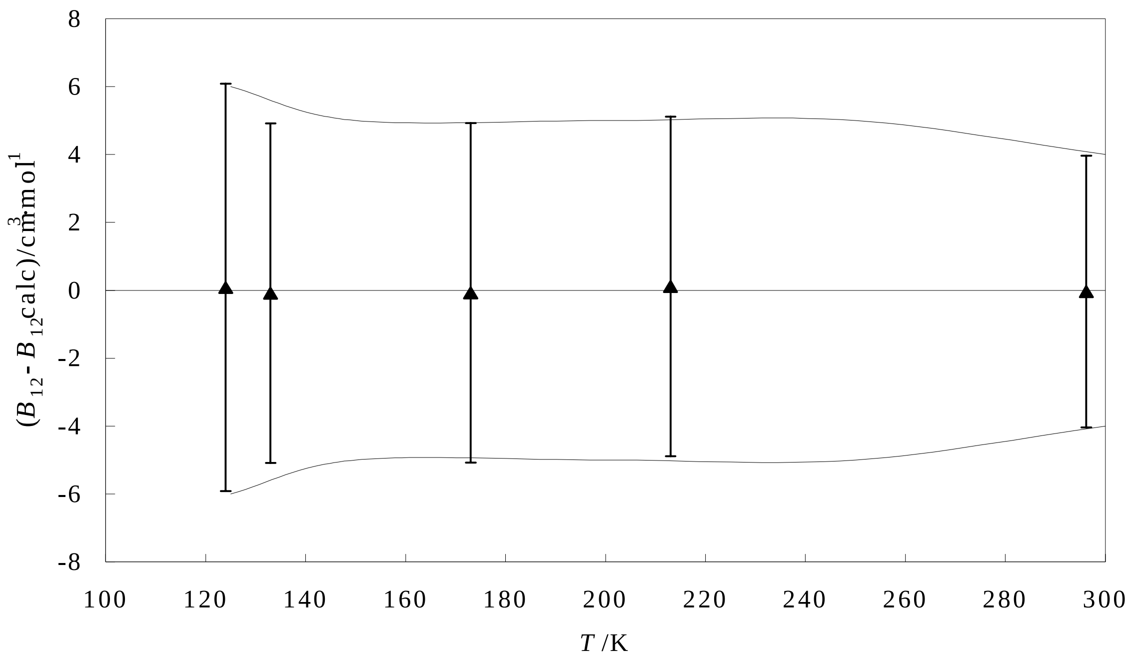

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Helium + Nitric oxide (cont.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)
124.00	6.0 ± 6.0	0.1	86-eli/hoa (▲)	213.00	17.8 ± 5.0	0.1	86-eli/hoa (▲)
133.00	8.1 ± 5.0	-0.1	86-eli/hoa (▲)	296.20	20.8 ± 4.0	0.0	86-eli/hoa (▲)
173.00	14.4 ± 5.0	-0.1	86-eli/hoa (▲)				

Helium [7440-59-7] He MW = 4.00 330
Nitrogen [7727-37-9] N_2 MW = 28.01

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3 \cdot \text{mol}^{-1} = 1.8417 \cdot 10 + 3.0450 \cdot 10^3/(T/\text{K}) - 7.3264 \cdot 10^5/(T/\text{K})^2 + 3.6364 \cdot 10^7/(T/\text{K})^3 - 6.3776 \cdot 10^8/(T/\text{K})^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/\text{cm}^3 \cdot \text{mol}^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/\text{cm}^3 \cdot \text{mol}^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/\text{cm}^3 \cdot \text{mol}^{-1}$
50	-24.9 ± 5	200	19.5 ± 2	500	21.8 ± 1
100	5.6 ± 3	300	21.7 ± 1	750	21.3 ± 1

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{\text{K}}$	$\frac{B_{exp} \pm \delta B}{\text{cm}^3 \cdot \text{mol}^{-1}}$	$\frac{B_{exp} - B_{calc}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref. (Symbol in Fig. 1)
40.00	-39.0 ± 3.5	5.3	83-dor/kus (■)	273.15	21.7 ± 5.2	0.3	63-can/lel (Δ)
45.00	-32.5 ± 1.3	-0.3	83-dor/kus (■)	273.15	20.2 ± 3.0	-1.2	69-bre/vau (✶)
50.00	-26.9 ± 2.1	-2.0	83-dor/kus (■)	290.00	22.3 ± 0.7	0.7	82-mar/tre (▪)
60.00	-12.8 ± 1.5	2.4	83-dor/kus (■)	290.00	20.8 ± 0.5	-0.8	92-zha/sch (▪)
77.30	-10.4 ± 6.0	-6.5	83-sch/buc (O)	290.00	21.3 ± 0.5	-0.3	92-zha/sch (▪)
87.20	-4.1 ± 6.0	-4.9	83-sch/buc (O)	290.00	21.8 ± 0.5	0.2	92-zha/sch (▪)
90.00	12.4 ± 3.0	10.4	59-kno/bee (●)	292.90	21.8 ± 1.0	0.2	81-bel/dun (♦)
103.15	6.3 ± 1.0	-0.3	70-hal/can (–)	298.15	21.2 ± 3.0	-0.5	69-bre/vau (✶)
113.15	10.4 ± 1.0	1.1	70-hal/can (–)	298.15	22.1 ± 0.5	0.4	92-zha/sch (▪)
133.15	13.8 ± 5.1	0.5	63-can/lel (Δ)	298.15	20.9 ± 0.5	-0.8	92-zha/sch (▪)
143.14	15.3 ± 5.2	0.5	63-can/lel (Δ)	298.20	12.5 ± 3.0	-9.2	42-edw/ros (×)
148.15	15.3 ± 3.0	-0.1	69-bre/vau (✶)	300.00	22.1 ± 0.6	0.4	82-mar/tre (▪)
158.15	16.5 ± 5.2	-0.1	63-can/lel (Δ)	303.15	21.8 ± 0.3	0.1	57-kra/mil (◊)
173.15	17.3 ± 3.0	-0.6	69-bre/vau (✶)	303.20	21.0 ± 0.0	-0.7	55-pfe/gof (□)
183.15	17.9 ± 5.2	-0.7	63-can/lel (Δ)	303.20	21.8 ± 1.0	0.1	81-bel/dun (♦)
198.15	17.8 ± 3.0	-1.6	69-bre/vau (✶)	310.00	22.0 ± 0.5	0.2	92-zha/sch (▪)
223.13	20.2 ± 5.2	-0.2	63-can/lel (Δ)	310.00	20.7 ± 0.5	-1.1	92-zha/sch (▪)
223.15	18.7 ± 3.0	-1.7	69-bre/vau (✶)	310.00	22.2 ± 0.5	0.4	92-zha/sch (▪)
248.15	19.9 ± 3.0	-1.1	69-bre/vau (✶)	311.70	22.0 ± 1.1	0.2	67-ku/dod (+)
270.00	21.1 ± 0.5	-0.3	92-zha/sch (▪)	315.00	21.7 ± 1.0	-0.1	81-bel/dun (♦)
270.00	21.5 ± 0.5	0.1	92-zha/sch (▪)	320.00	21.5 ± 0.6	-0.3	82-mar/tre (▪)
270.00	21.4 ± 0.5	0.0	92-zha/sch (▪)	321.70	21.7 ± 1.0	-0.1	81-bel/dun (♦)

cont.

Helium + Nitrogen (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 2)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 2)
323.15	21.6 ± 3.0	-0.2	69-bre/vau (✶)	373.20	22.2 ± 1.1	0.2	67-ku/dod (+)
330.00	21.9 ± 0.5	0.0	92-zha/sch (■)	448.15	22.9 ± 0.4	0.9	63-wit/mil (▲)
330.00	21.3 ± 0.5	-0.6	92-zha/sch (■)	523.15	22.4 ± 0.2	0.6	63-wit/mil (▲)
330.00	22.3 ± 0.5	0.4	92-zha/sch (■)	598.15	21.7 ± 0.4	0.1	63-wit/mil (▲)
350.00	22.3 ± 0.5	0.4	92-zha/sch (■)	673.15	21.2 ± 0.3	-0.2	63-wit/mil (▲)
350.00	22.4 ± 0.5	0.5	92-zha/sch (■)	748.15	20.3 ± 0.3	-1.0	63-wit/mil (▲)

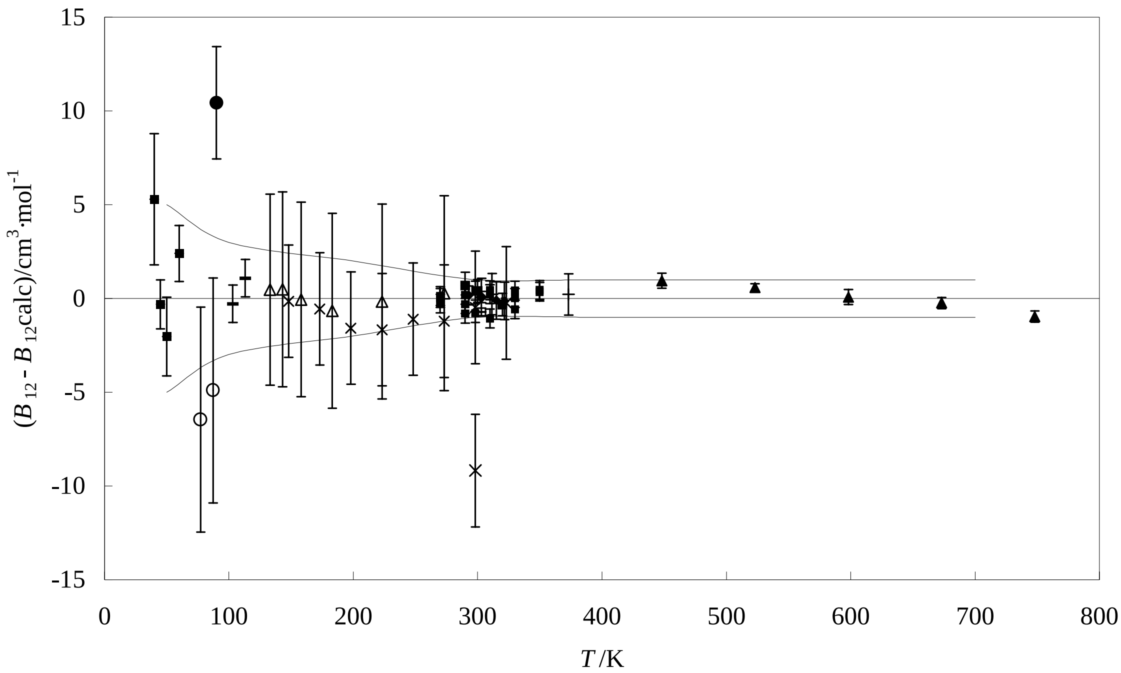

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
83.15	0.878	5.8 ± 0.4	70-hal/can	113.15	0.446	-31.9 ± 0.1	70-hal/can
83.15	0.753	-6.8 ± 0.1	70-hal/can	113.15	0.301	-57.0 ± 0.2	70-hal/can
103.15	0.878	8.4 ± 0.1	70-hal/can	270.00	0.249	2.6 ± 0.4	92-zha/sch
103.15	0.753	0.1 ± 0.1	70-hal/can	270.00	0.500	10.9 ± 0.4	92-zha/sch
103.15	0.446	-40.6 ± 0.8	70-hal/can	270.00	0.749	13.9 ± 0.4	92-zha/sch
103.15	0.301	-69.8 ± 0.9	70-hal/can	290.00	0.249	5.2 ± 0.4	92-zha/sch
113.15	0.878	9.1 ± 0.1	70-hal/can	290.00	0.500	11.7 ± 0.4	92-zha/sch
113.15	0.753	3.0 ± 0.1	70-hal/can	290.00	0.749	14.2 ± 0.4	92-zha/sch

cont.

Helium + Nitrogen (cont.)

Table 3. (cont.)

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.249	5.8 ± 0.4	92-zha/sch	330.00	0.249	9.5 ± 0.4	92-zha/sch
298.15	0.749	14.6 ± 0.4	92-zha/sch	330.00	0.500	13.8 ± 0.4	92-zha/sch
310.00	0.249	7.6 ± 0.4	92-zha/sch	330.00	0.749	14.8 ± 0.4	92-zha/sch
310.00	0.500	12.7 ± 0.4	92-zha/sch	350.00	0.249	11.1 ± 0.4	92-zha/sch
310.00	0.749	14.7 ± 0.4	92-zha/sch	350.00	0.749	15.1 ± 0.4	92-zha/sch

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	18.4 ± 0.2	82-mar/tre	315.00	0.500	17.0 ± 0.3	81-bel/dun
290.00	0.500	19.2 ± 0.2	82-mar/tre	320.00	0.500	16.7 ± 0.2	82-mar/tre
292.90	0.500	18.9 ± 0.3	81-bel/dun	321.70	0.500	16.6 ± 0.3	81-bel/dun
303.20	0.500	18.0 ± 0.3	81-bel/dun				

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
83.15	0.878	0.2 ± 0.1	70-hal/can	290.00	0.500	0.6 ± 0.1	92-zha/sch
103.15	0.878	0.3 ± 0.1	70-hal/can	290.00	0.749	0.3 ± 0.1	92-zha/sch
103.15	0.753	0.5 ± 0.1	70-hal/can	298.15	0.249	1.0 ± 0.1	92-zha/sch
103.15	0.446	1.3 ± 0.2	70-hal/can	298.15	0.749	0.3 ± 0.1	92-zha/sch
103.15	0.301	1.6 ± 0.3	70-hal/can	310.00	0.249	0.8 ± 0.1	92-zha/sch
113.15	0.878	0.3 ± 0.1	70-hal/can	310.00	0.500	0.6 ± 0.1	92-zha/sch
113.15	0.753	0.4 ± 0.1	70-hal/can	310.00	0.749	0.3 ± 0.1	92-zha/sch
113.15	0.446	1.2 ± 0.1	70-hal/can	330.00	0.249	0.8 ± 0.1	92-zha/sch
113.15	0.301	1.8 ± 0.1	70-hal/can	330.00	0.500	0.6 ± 0.1	92-zha/sch
270.00	0.249	0.9 ± 0.1	92-zha/sch	330.00	0.749	0.3 ± 0.1	92-zha/sch
270.00	0.500	0.5 ± 0.1	92-zha/sch	350.00	0.249	0.8 ± 0.1	92-zha/sch
270.00	0.749	0.3 ± 0.1	92-zha/sch	350.00	0.749	0.3 ± 0.1	92-zha/sch
290.00	0.249	0.9 ± 0.1	92-zha/sch				

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
40.00	1.1 ± 0.2	83-dor/kus	158.15	0.5 ± 0.0	63-can/lel
45.00	0.9 ± 0.1	83-dor/kus	183.15	0.4 ± 0.0	63-can/lel
50.00	0.9 ± 0.2	83-dor/kus	223.13	0.3 ± 0.0	63-can/lel
60.00	0.7 ± 0.1	83-dor/kus	273.15	0.1 ± 0.0	63-can/lel
133.15	0.3 ± 0.0	63-can/lel	303.15	0.1 ± 0.0	57-kra/mil
143.14	0.4 ± 0.0	63-can/lel			

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
133.15	1.0 ± 0.4	63-can/lel	143.14	0.8 ± 0.4	63-can/lel

cont.

Helium + Nitrogen (cont.)

Table 7. (cont.)

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
158.15	0.6 ± 0.4	63-can/lel	273.15	0.7 ± 0.4	63-can/lel
183.15	0.8 ± 0.4	63-can/lel	303.15	0.3 ± 0.0	57-kra/mil
223.13	0.8 ± 0.4	63-can/lel			

Helium **[7440-59-7]** **He** **MW = 4.00** **331**
Nitrous oxide **[10024-97-2]** **N_2O** **MW = 44.01**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 4.4476 · 10 – 9.8008 · 10^3/(T/K) + 7.9041 · 10^5/(T/K)^2

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
275	19.3 ± 0.6	325	21.8 ± 0.6		
300	20.6 ± 0.6	350	22.9 ± 0.6		

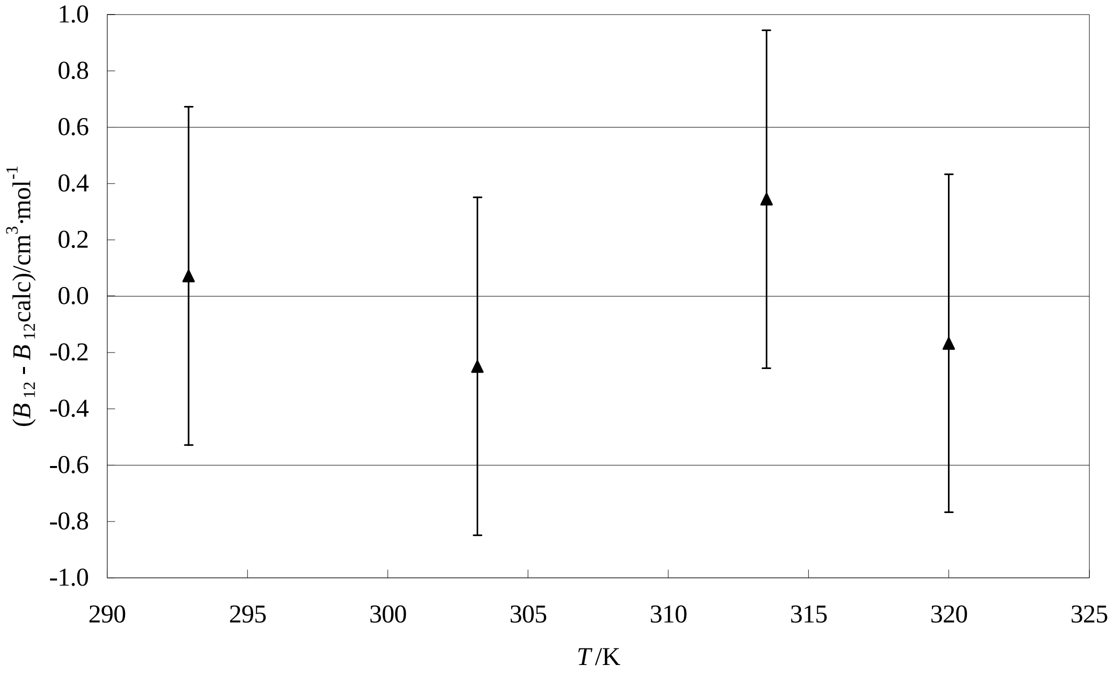

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Helium + Nitrous oxide (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
292.90	20.3 ± 0.6	0.1	81-bel/dun (▲)	313.50	21.6 ± 0.6	0.3	81-bel/dun (▲)
303.20	20.5 ± 0.6	-0.2	81-bel/dun (▲)	320.00	21.4 ± 0.6	-0.2	81-bel/dun (▲)

Helium [7440-59-7] He MW = 4.00 332
Neon [7440-01-9] Ne MW = 20.18

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.3558 \cdot 10 - 2.5654 \cdot 10^2/(T/K) - 2.8502 \cdot 10^4/(T/K)^2 + 2.2060 \cdot 10^5/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
15	-64.9 ± 4	150	10.6 ± 3	300	12.4 ± 3
50	-1.2 ± 3	200	11.6 ± 3	350	12.6 ± 3
100	8.4 ± 3	250	12.1 ± 3		

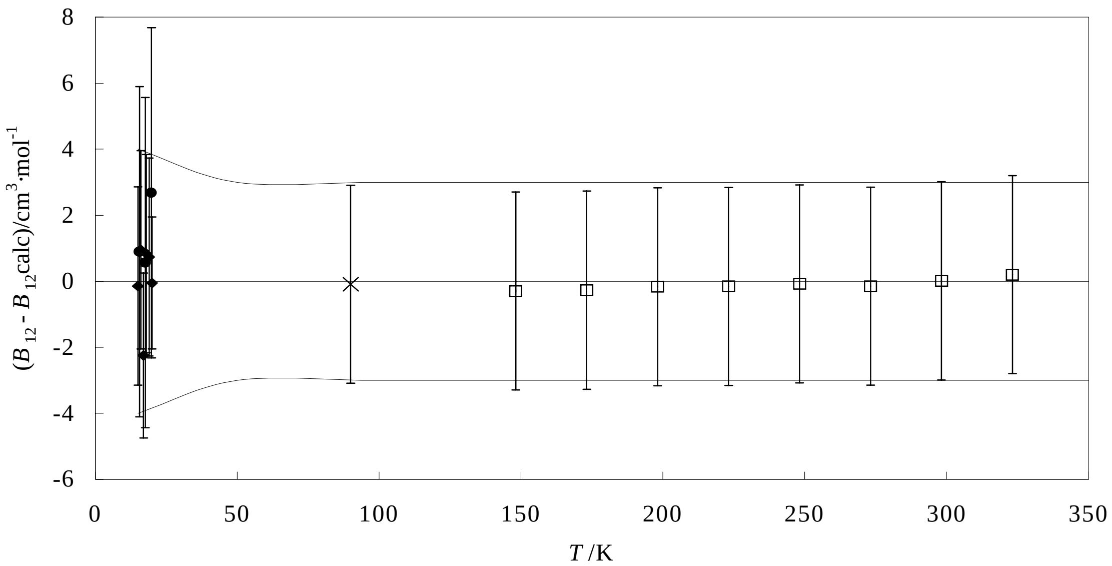

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Helium + Neon (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
15.00	-65.0 ± 3.0	-0.1	77-iom/dor (♦)	90.00	7.4 ± 3.0	-0.1	59-kno/bee (×)
15.60	-61.0 ± 5.0	0.9	79-ber/cha (●)	148.15	10.3 ± 3.0	-0.3	69-bre/vau (☐)
16.00	-59.0 ± 3.0	1.0	77-iom/dor (♦)	173.15	10.9 ± 3.0	-0.3	69-bre/vau (☐)
17.00	-57.5 ± 2.5	-2.2	77-iom/dor (♦)	198.15	11.4 ± 3.0	-0.2	69-bre/vau (☐)
17.60	-52.0 ± 5.0	0.6	79-ber/cha (●)	223.15	11.7 ± 3.0	-0.2	69-bre/vau (☐)
18.00	-50.0 ± 3.0	0.8	77-iom/dor (♦)	248.15	12.0 ± 3.0	-0.1	69-bre/vau (☐)
19.00	-46.0 ± 3.0	0.7	77-iom/dor (♦)	273.15	12.1 ± 3.0	-0.1	69-bre/vau (☐)
19.80	-41.0 ± 5.0	2.7	79-ber/cha (●)	298.15	12.4 ± 3.0	0.0	69-bre/vau (☐)
20.00	-43.0 ± 2.0	-0.1	77-iom/dor (♦)	323.15	12.7 ± 3.0	0.2	69-bre/vau (☐)

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
15.00	0.6 ± 0.1	77-iom/dor	18.00	0.6 ± 0.1	77-iom/dor
16.00	0.6 ± 0.1	77-iom/dor	19.00	0.6 ± 0.1	77-iom/dor
17.00	0.6 ± 0.1	77-iom/dor	20.00	0.5 ± 0.1	77-iom/dor

Helium [7440-59-7] He MW = 4.00 333
Oxygen [7782-44-7] O_2 MW = 32.00

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.6501 \cdot 10 - 2.5239 \cdot 10^3/(T/K) - 1.9725 \cdot 10^4/(T/K)^2 - 2.9539 \cdot 10^4/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
50	-32.1 ± 5	150	8.8 ± 5	250	16.1 ± 5
100	-0.7 ± 5	200	13.4 ± 5	300	17.9 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
38.00	-54.6 ± 0.8	-0.5	82-dor/kus (☐)	173.00	12.5 ± 5.0	1.3	86-eli/hoa (▲)
40.00	-49.5 ± 0.8	-0.1	82-dor/kus (☐)	198.00	14.7 ± 5.0	1.5	86-eli/hoa (▲)
42.00	-44.3 ± 0.8	0.9	82-dor/kus (☐)	233.00	17.9 ± 5.0	2.6	86-eli/hoa (▲)
45.00	-41.5 ± 3.0	-1.8	82-dor/kus (☐)	263.00	19.6 ± 5.0	3.0	86-eli/hoa (▲)
50.00	-31.3 ± 1.0	0.8	82-dor/kus (☐)	273.20	15.9 ± 1.0	-1.1	67-bre (♦)
54.00	-29.5 ± 1.2	-2.3	82-dor/kus (☐)	290.00	17.8 ± 0.6	0.2	82-mar/tre (Δ)
77.30	-13.4 ± 8.0	-3.9	86-eli/hoa (▲)	296.20	19.4 ± 4.0	1.6	86-eli/hoa (▲)
87.20	-7.0 ± 7.0	-1.9	86-eli/hoa (▲)	300.00	18.2 ± 0.6	0.3	82-mar/tre (Δ)
90.00	-4.4 ± 3.0	-0.4	59-kno/bee (×)	320.00	17.6 ± 0.6	-0.8	82-mar/tre (Δ)
90.10	-4.4 ± 7.0	-0.4	86-eli/hoa (▲)				

cont.

Helium + Oxygen (cont.)

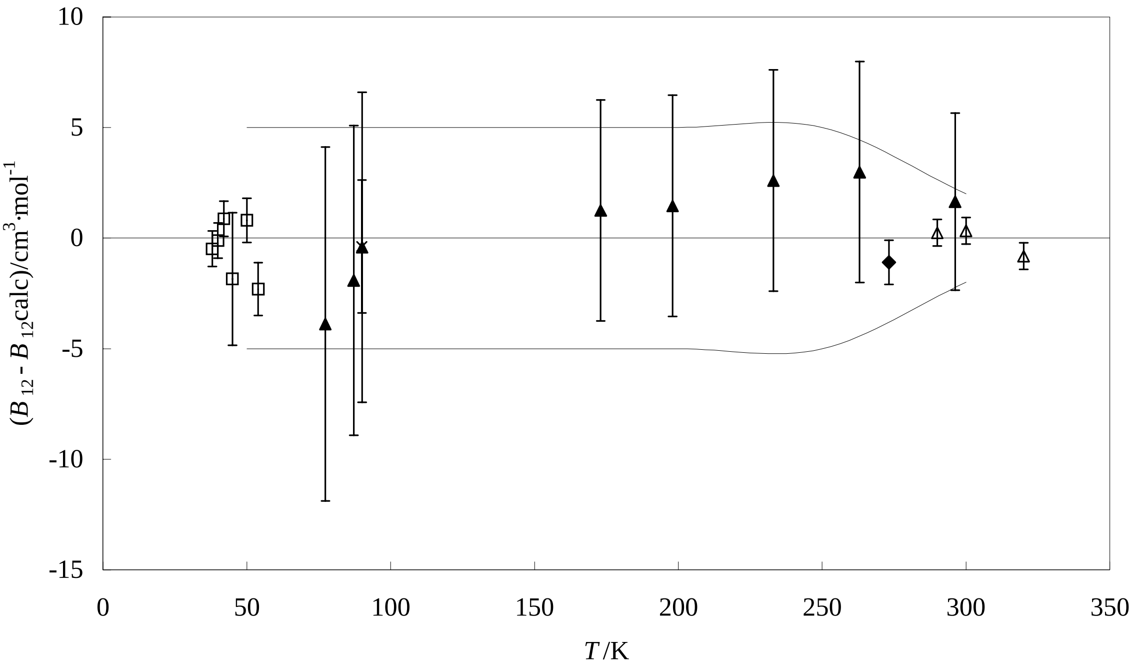

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	0.500	21.0 ± 0.2	67-bre	300.00	0.500	20.1 ± 0.2	82-mar/tre
290.00	0.500	20.6 ± 0.2	82-mar/tre	320.00	0.500	18.0 ± 0.2	82-mar/tre

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
38.00	0.9 ± 0.1	82-dor/kus	45.00	0.9 ± 0.2	82-dor/kus
40.00	0.9 ± 0.1	82-dor/kus	50.00	0.7 ± 0.1	82-dor/kus
42.00	0.8 ± 0.1	82-dor/kus	54.00	0.8 ± 0.1	82-dor/kus

Helium **[7440-59-7]** **He** **MW = 4.00** **334**
Xenon **[7440-63-3]** **Xe** **MW = 131.29**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 2.2759 \cdot 10 + 3.5574 \cdot 10^3/(T/\text{K}) - 5.8539 \cdot 10^5/(T/\text{K})^2 - 4.5983 \cdot 10^6/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
120	9.1 ± 1	200	25.3 ± 2	300	27.9 ± 2
150	19.1 ± 1	250	27.3 ± 2	350	28.0 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp}-B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp}-B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
120.00	9.4 ± 1.0	0.3	73-kat/rob (×)	198.20	25.9 ± 2.0	0.7	67-bre (☐)
130.00	13.1 ± 0.8	-0.3	73-kat/rob (×)	223.20	25.4 ± 2.0	-1.1	67-bre (☐)
140.00	16.4 ± 0.8	-0.2	73-kat/rob (×)	273.20	26.9 ± 2.0	-0.8	67-bre (☐)
155.00	20.5 ± 0.8	0.4	73-kat/rob (×)	323.20	28.8 ± 2.0	0.8	67-bre (☐)
173.20	23.2 ± 3.0	0.3	67-bre (☐)				

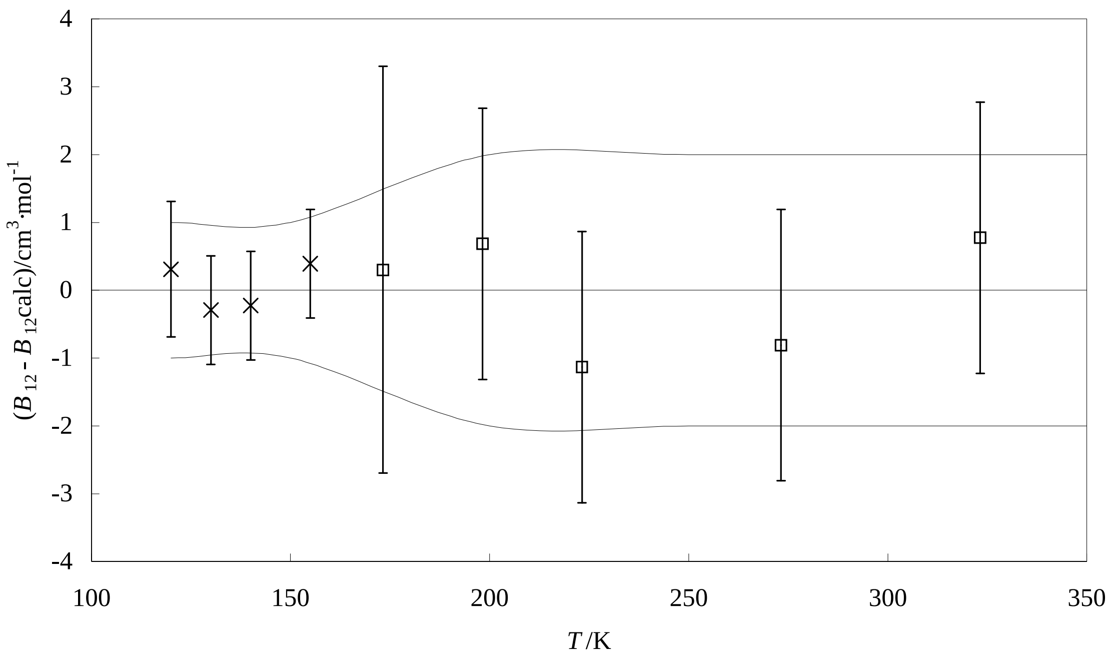

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Helium + Xenon (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	0.500	201.5 ± 0.2	67-bre	273.20	0.500	98.1 ± 0.2	67-bre
198.20	0.500	161.9 ± 0.2	67-bre	323.20	0.500	78.5 ± 0.2	67-bre
223.20	0.500	132.8 ± 0.2	67-bre				

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
120.00	0.5 ± 0.1	73-kat/rob-1	140.00	0.7 ± 0.1	73-kat/rob-1
130.00	0.6 ± 0.1	73-kat/rob-1	155.00	0.3 ± 0.1	73-kat/rob-1

Helium [7440-59-7] He MW = 4.00 335
Tetrachloromethane [56-23-5] CCl_4 MW = 153.82

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
262.50	37.0 ± 5.0	72-gup/kin	323.20	56.0 ± 2.0	72-gup/kin
273.20	46.0 ± 4.0	72-gup/kin	348.20	59.0 ± 2.0	72-gup/kin
298.20	61.0 ± 4.0	72-gup/kin			

Helium [7440-59-7] He MW = 4.00 336
Tetrafluoromethane [75-73-0] CF_4 MW = 88.00

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 7.6369 \cdot 10 - 3.6626 \cdot 10^4/(T/K) + 9.6817 \cdot 10^6/(T/K)^2 - 9.1723 \cdot 10^8/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
175	12.1 ± 6	300	27.9 ± 1	550	36.3 ± 1
200	20.7 ± 5	400	31.0 ± 1	750	42.6 ± 1

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
173.00	14.9 ± 6.0	3.9	86-eli/hoa (▲)	296.20	25.1 ± 4.0	-2.7	86-eli/hoa (▲)
183.00	16.3 ± 6.0	0.6	86-eli/hoa (▲)	300.00	28.4 ± 1.4	0.5	86-dun/big (■)
203.00	19.2 ± 5.0	-2.0	86-eli/hoa (▲)	300.00	29.7 ± 1.4	1.8	93-big/dun (O)
223.00	21.4 ± 5.0	-2.7	86-eli/hoa (▲)	303.15	26.5 ± 0.8	-1.5	67-kal/mil (×)
253.00	23.8 ± 5.0	-2.4	86-eli/hoa (▲)	303.20	28.2 ± 1.3	0.2	81-bel/dun (□)
290.00	28.1 ± 1.3	0.5	86-dun/big (■)	310.00	29.6 ± 1.4	1.4	93-big/dun (O)
290.00	28.5 ± 1.4	0.9	93-big/dun (O)	320.00	29.7 ± 1.4	1.2	86-dun/big (■)

cont.

Helium + Tetrafluoromethane (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
373.15	30.2 ± 0.9	0.1	67-kal/mil (×)	673.15	40.5 ± 0.4	0.2	67-kal/mil (×)
473.15	33.2 ± 0.5	-0.3	67-kal/mil (×)	773.15	43.1 ± 0.4	-0.1	67-kal/mil (×)
573.15	37.4 ± 0.8	0.3	67-kal/mil (×)				

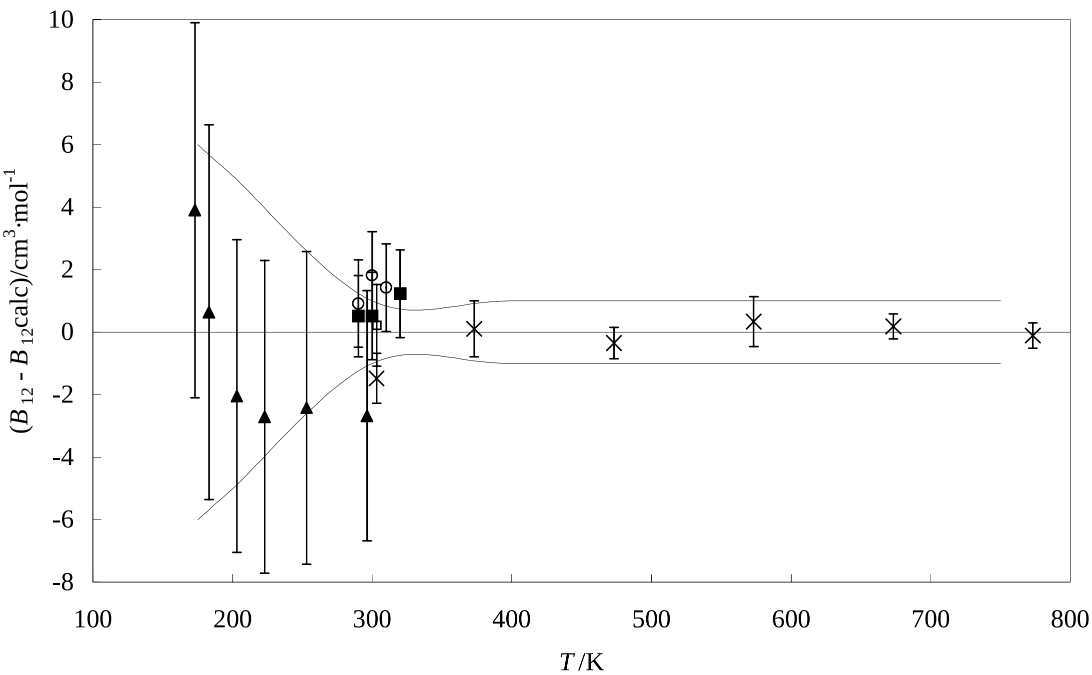

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	70.1 ± 0.4	86-dun/big	303.20	0.500	64.6 ± 0.3	81-bel/dun
290.00	0.500	71.6 ± 1.0	93-big/dun	310.00	0.500	65.1 ± 1.0	93-big/dun
300.00	0.500	66.0 ± 0.4	86-dun/big	320.00	0.500	60.3 ± 0.4	86-dun/big
300.00	0.500	68.6 ± 1.0	93-big/dun				

Helium [7440-59-7] He MW = 4.00 337
Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	85.2 ± 6.0	67-bre	298.20	34.0 ± 4.0	67-bre
273.20	42.7 ± 5.0	67-bre			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	351.7 ± 0.2	67-bre	298.20	0.500	207.6 ± 0.2	67-bre
273.20	0.500	255.3 ± 0.2	67-bre				

Helium [7440-59-7] He MW = 4.00 338
Trifluoromethane [75-46-7] CHF_3 MW = 70.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	27.2 ± 4.0	93-big/dun	310.00	28.9 ± 4.0	93-big/dun
300.00	28.5 ± 4.0	93-big/dun			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	123.8 ± 1.0	93-big/dun	310.00	0.500	109.2 ± 1.0	93-big/dun
300.00	0.500	116.8 ± 1.0	93-big/dun				

Helium [7440-59-7] He MW = 4.00 339
Difluoromethane [75-10-5] CH_2F_2 MW = 52.02

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	30.0 ± 6.0	93-big/dun	310.00	32.0 ± 5.0	93-big/dun
300.00	29.9 ± 6.0	93-big/dun			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	181.9 ± 24.0	93-big/dun	310.00	0.500	158.5 ± 24.0	93-big/dun
300.00	0.500	170.4 ± 24.0	93-big/dun				

Helium **[7440-59-7]** **He** **MW = 4.00** **340**
Fluoromethane **[593-53-3]** **CH_3F** **MW = 34.03**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	25.2 ± 4.0	93-big/dun	310.00	27.3 ± 4.0	93-big/dun
300.00	25.8 ± 4.0	93-big/dun			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	129.5 ± 1.0	93-big/dun	310.00	0.500	111.8 ± 1.0	93-big/dun
300.00	0.500	120.9 ± 1.0	93-big/dun				

Helium **[7440-59-7]** **He** **MW = 4.00** **341**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.9872 \cdot 10 - 9.6196 \cdot 10^2/(T/K) - 2.3581 \cdot 10^5/(T/K)^2 + 1.7281 \cdot 10^7/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
100	14.0 ± 5	200	21.3 ± 2	300	24.7 ± 1
150	18.1 ± 3	250	23.4 ± 1	350	25.6 ± 1

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
90.10	3.9 ± 10.0	-9.9	86-eli/hoa (Δ)	263.00	24.5 ± 5.0	0.7	86-eli/hoa (Δ)
95.00	26.0 ± 10.0	12.2	80-mal-1(□)	273.20	23.3 ± 1.0	-0.7	67-bre (×)
123.20	15.7 ± 1.0	-0.1	67-bre (×)	290.00	24.6 ± 0.7	0.1	82-mar/tre (●)
124.00	11.3 ± 6.0	-4.5	86-eli/hoa (Δ)	292.90	24.6 ± 0.3	0.1	81-bel/dun (▲)
143.00	15.4 ± 5.0	-2.1	86-eli/hoa (Δ)	296.20	24.9 ± 4.0	0.3	86-eli/hoa (Δ)
148.20	18.1 ± 1.0	0.1	67-bre (×)	300.00	24.7 ± 0.7	0.0	82-mar/tre (●)
173.00	18.6 ± 5.0	-1.2	86-eli/hoa (Δ)	303.20	24.9 ± 0.3	0.1	81-bel/dun (▲)
173.20	19.8 ± 1.0	0.0	67-bre (×)	320.00	25.0 ± 0.3	-0.1	81-bel/dun (▲)
213.00	21.8 ± 5.0	-0.1	86-eli/hoa (Δ)	320.00	24.7 ± 0.7	-0.4	82-mar/tre (●)
223.20	22.0 ± 1.0	-0.4	67-bre (×)				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
123.20	0.500	142.2 ± 0.2	67-bre	273.20	0.500	44.4 ± 0.2	67-bre
148.20	0.500	105.1 ± 0.2	67-bre	290.00	0.500	41.9 ± 0.2	82-mar/tre
173.20	0.500	83.2 ± 0.2	67-bre	290.00	0.000	42.5 ± 6.0	93-big/dun
223.20	0.500	57.9 ± 0.2	67-bre	292.90	0.000	41.2 ± 0.3	81-bel/dun

cont.

Helium + Methane (cont.)

Table 4. (cont.)

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
300.00	0.500	39.8 ± 0.2	82-mar/tre	310.00	0.500	35.9 ± 6.0	93-big/dun
300.00	0.500	30.3 ± 6.0	93-big/dun	320.00	0.500	36.4 ± 0.3	81-bel/dun
303.20	0.500	39.2 ± 0.3	81-bel/dun	320.00	0.500	36.5 ± 0.2	82-mar/tre

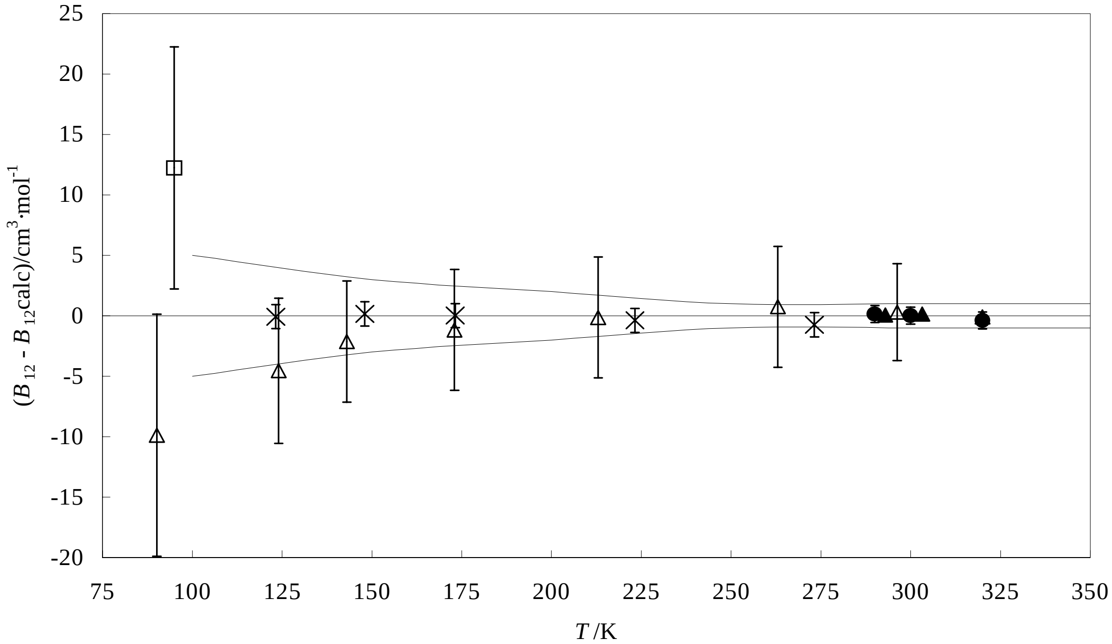

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Helium [7440-59-7] He MW = 4.00 342
Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	41.1 ± 4.0	92-bel/big	310.00	44.3 ± 4.0	92-bel/big
300.00	43.9 ± 4.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	174.5 ± 1.0	92-bel/big	310.00	0.500	157.1 ± 1.0	92-bel/big
300.00	0.500	167.5 ± 1.0	92-bel/big				

Helium [7440-59-7] He MW = 4.00 343
Pentafluoroethane [354-33-6] C_2HF_5 MW = 120.02

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	41.0 ± 4.0	93-big/dun-1	310.00	41.0 ± 4.0	93-big/dun-1
300.00	43.4 ± 4.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	232.7 ± 1.0	93-big/dun-1	310.00	0.500	202.8 ± 1.0	93-big/dun-1
300.00	0.500	219.1 ± 1.0	93-big/dun-1				

Helium [7440-59-7] He MW = 4.00 344
1,1,1,2-Tetrafluoroethane [811-97-2] $C_2H_2F_4$ MW = 102.03

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	39.8 ± 6.0	93-big/dun-1	310.00	39.2 ± 6.0	93-big/dun-1
300.00	44.1 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	302.2 ± 1.0	93-big/dun-1	310.00	0.500	254.9 ± 1.0	93-big/dun-1
300.00	0.500	281.0 ± 1.0	93-big/dun-1				

Helium [7440-59-7] He MW = 4.00 345
1,1,2,2-Tetrafluoroethane [359-35-3] $C_2H_2F_4$ MW = 102.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	43.9 ± 6.0	93-big/dun-1	310.00	45.3 ± 6.0	93-big/dun-1
300.00	46.0 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	293.7 ± 1.0	93-big/dun-1	310.00	0.500	253.4 ± 1.0	93-big/dun-1
300.00	0.500	274.4 ± 1.0	93-big/dun-1				

Helium [7440-59-7] He MW = 4.00 346
1,1,1-Trifluoroethane [420-46-2] $C_2H_3F_3$ MW = 84.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	36.5 ± 6.0	93-big/dun-1	310.00	43.1 ± 6.0	93-big/dun-1
300.00	40.8 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	249.5 ± 1.0	93-big/dun-1	310.00	0.500	220.4 ± 1.0	93-big/dun-1
300.00	0.500	235.4 ± 1.0	93-big/dun-1				

Helium [7440-59-7] He MW = 4.00 347
1,1,2-Trifluoroethane [430-66-0] $C_2H_3F_3$ MW = 84.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	47.0 ± 6.0	93-big/dun-1	310.00	49.0 ± 6.0	93-big/dun-1
300.00	50.8 ± 6.0	93-big/dun-1			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	363.3 ± 1.0	93-big/dun-1	310.00	0.500	312.0 ± 1.0	93-big/dun-1
300.00	0.500	344.9 ± 1.0	93-big/dun-1				

Helium [7440-59-7] He MW = 4.00 **348**
Ethene [74-85-1] C_2H_4 MW = 28.05

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	30.2 ± 3.0	77-lin/rod	373.20	28.7 ± 3.0	77-lin/rod

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot m^6 \cdot mol^{-2}$	Ref.
323.20	2.1 ± 0.2	77-lin/rod	373.20	1.9 ± 0.2	77-lin/rod

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
323.20	0.4 ± 0.0	77-lin/rod	373.20	0.5 ± 0.1	77-lin/rod

Helium [7440-59-7] He MW = 4.00 **349**
1,1-Difluoroethane [75-37-6] $C_2H_4F_2$ MW = 66.05

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	34.2 ± 3.0	92-bel/big	300.00	46.0 ± 2.0	93-big/dun-1
290.00	45.6 ± 2.0	93-big/dun-1	310.00	38.9 ± 3.0	92-bel/big
300.00	38.3 ± 3.0	92-bel/big	310.00	45.0 ± 2.0	93-big/dun-1

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	308.1 ± 1.0	92-bel/big	300.00	0.500	286.5 ± 1.0	93-big/dun-1
290.00	0.500	311.5 ± 1.0	93-big/dun-1	310.00	0.500	262.2 ± 1.0	92-bel/big
300.00	0.500	285.3 ± 1.0	92-bel/big	310.00	0.500	264.6 ± 1.0	93-big/dun-1

Helium [7440-59-7] He MW = 4.00 **350**
Fluoroethane [353-36-6] C_2H_5F MW = 48.06

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	44.1 ± 4.0	93-big/dun-1	310.00	39.2 ± 4.0	93-big/dun-1
300.00	42.0 ± 4.0	93-big/dun-1			

cont.

Helium + Fluoroethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	238.8 ± 1.0	93-big/dun-1	310.00	0.500	203.8 ± 1.0	93-big/dun-1
300.00	0.500	221.5 ± 1.0	93-big/dun-1				

Helium **[7440-59-7]** **He** **MW = 4.00** **351**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	31.5 ± 6.0	92-bel/big	310.00	32.9 ± 6.0	92-bel/big
300.00	32.0 ± 6.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	123.4 ± 1.0	92-bel/big	310.00	0.500	111.6 ± 1.0	92-bel/big
300.00	0.500	117.5 ± 1.0	92-bel/big				

Helium **[7440-59-7]** **He** **MW = 4.00** **352**
Ethanol **[64-17-5]** **C_2H_6O** **MW = 46.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	32.0 ± 6.0	73-gup/les	348.15	42.0 ± 6.0	73-gup/les
323.15	41.0 ± 2.0	73-gup/les			

Helium **[7440-59-7]** **He** **MW = 4.00** **353**
Propene **[115-07-1]** **C_3H_6** **MW = 42.08**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
393.20	44.2 ± 2.9	78-war/ste	423.01	39.6 ± 2.8	78-war/ste
407.40	40.1 ± 2.8	78-war/ste	423.02	36.6 ± 2.7	78-war/ste
407.48	39.8 ± 2.8	78-war/ste	423.03	34.9 ± 2.7	78-war/ste
407.50	35.8 ± 2.7	78-war/ste			

cont.

Helium + Propene (cont.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
393.20	0.561	-37.3 ± 1.9	78-war/ste	407.50	0.713	-74.1 ± 2.9	78-war/ste
393.20	0.567	-36.3 ± 1.9	78-war/ste	407.50	0.713	-74.1 ± 2.9	78-war/ste
407.40	0.565	-34.4 ± 1.9	78-war/ste	423.01	0.931	-135.5 ± 4.4	78-war/ste
407.40	0.565	-34.3 ± 1.9	78-war/ste	423.02	0.857	-109.9 ± 3.8	78-war/ste
407.48	0.567	-35.9 ± 1.9	78-war/ste	423.03	0.652	-48.6 ± 2.2	78-war/ste
407.48	0.567	-35.1 ± 1.9	78-war/ste	423.03	0.652	-51.8 ± 2.3	78-war/ste

Helium [7440-59-7] He MW = 4.00 354
Propane [74-98-6] C_3H_8 MW = 44.10

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 6.2759 \cdot 10 - 1.4565 \cdot 10^4/(T/K) + 2.1194 \cdot 10^6/(T/K)^2 + 1.9238 \cdot 10^8/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
250	50.7 ± 3	350	42.9 ± 3	450	43.0 ± 3
300	44.9 ± 3	400	42.6 ± 3		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
248.20	51.4 ± 3.0	0.3	67-bre (×)	407.40	44.1 ± 2.9	1.5	78-war/ste (♦)
273.20	45.9 ± 3.0	-1.4	67-bre (×)	407.49	37.8 ± 2.8	-4.8	78-war/ste (♦)
298.20	46.2 ± 3.0	1.2	67-bre (×)	423.00	44.8 ± 2.9	2.1	78-war/ste (♦)
393.18	43.5 ± 2.9	0.9	78-war/ste (♦)	423.00	42.6 ± 4.0	-0.1	78-war/ste (♦)
393.19	42.9 ± 2.9	0.3	78-war/ste (♦)				

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
393.18	0.767	-111.8 ± 3.8	78-war/ste	407.49	0.626	-56.1 ± 2.4	78-war/ste
393.18	0.770	-111.2 ± 3.8	78-war/ste	407.49	0.627	-58.7 ± 2.5	78-war/ste
393.19	0.706	-87.9 ± 3.2	78-war/ste	423.00	0.391	-4.1 ± 1.1	78-war/ste
393.19	0.708	-87.9 ± 3.2	78-war/ste	423.00	0.808	-104.9 ± 3.6	78-war/ste
407.40	0.422	-12.1 ± 1.3	78-war/ste	423.00	0.392	-2.4 ± 1.1	78-war/ste
407.40	0.423	-10.2 ± 1.3	78-war/ste	423.00	0.808	-104.7 ± 3.6	78-war/ste

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	335.0 ± 0.2	67-bre	298.20	0.500	234.2 ± 0.2	67-bre
273.20	0.500	274.0 ± 0.2	67-bre				

cont.

Helium + Propane (cont.)

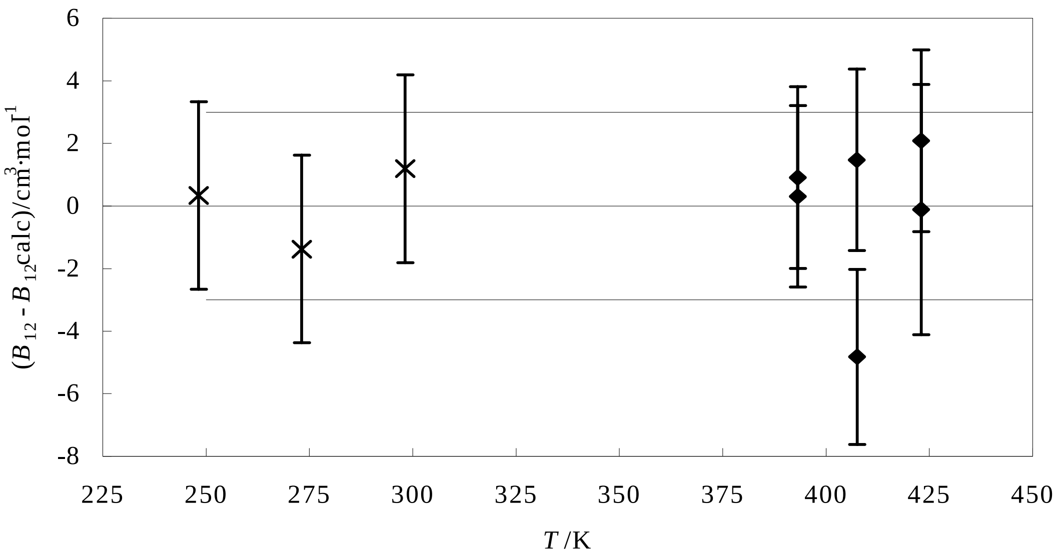

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Helium [7440-59-7] He MW = 4.00 355
Octafluorocyclobutane [115-25-3] C_4F_8 MW = 200.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	49.2 ± 5.0	92-bel/big	310.00	50.0 ± 5.0	92-bel/big
300.00	53.4 ± 5.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	465.2 ± 1.0	92-bel/big	310.00	0.500	397.1 ± 1.0	92-bel/big
300.00	0.500	432.1 ± 1.0	92-bel/big				

Helium [7440-59-7] He MW = 4.00 356
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.2344 \cdot 10 + 5.8166 \cdot 10^4/(T/K) - 1.3241 \cdot 10^7/(T/K)^2$$

cont.

Helium + Butane (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
350	45.8 ± 5	450	51.5 ± 5		
400	50.3 ± 5	500	51.0 ± 5		

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
373.30	45.0 ± 5.0	-3.5	67-jon/kay (♦)	448.20	48.5 ± 5.0	-3.0	67-jon/kay (♦)
373.30	50.8 ± 5.0	2.3	67-jon/kay (♦)	448.20	56.2 ± 5.0	4.7	67-jon/kay (♦)
398.20	45.5 ± 5.0	-4.7	67-jon/kay (♦)	473.30	47.4 ± 5.0	-4.0	67-jon/kay (♦)
398.20	55.4 ± 5.0	5.2	67-jon/kay (♦)	473.30	46.1 ± 5.0	-5.3	67-jon/kay (♦)
423.20	51.9 ± 5.0	0.7	67-jon/kay (♦)	498.30	53.0 ± 5.0	1.9	67-jon/kay (♦)
423.20	53.6 ± 5.0	2.4	67-jon/kay (♦)	498.30	54.3 ± 5.0	3.2	67-jon/kay (♦)

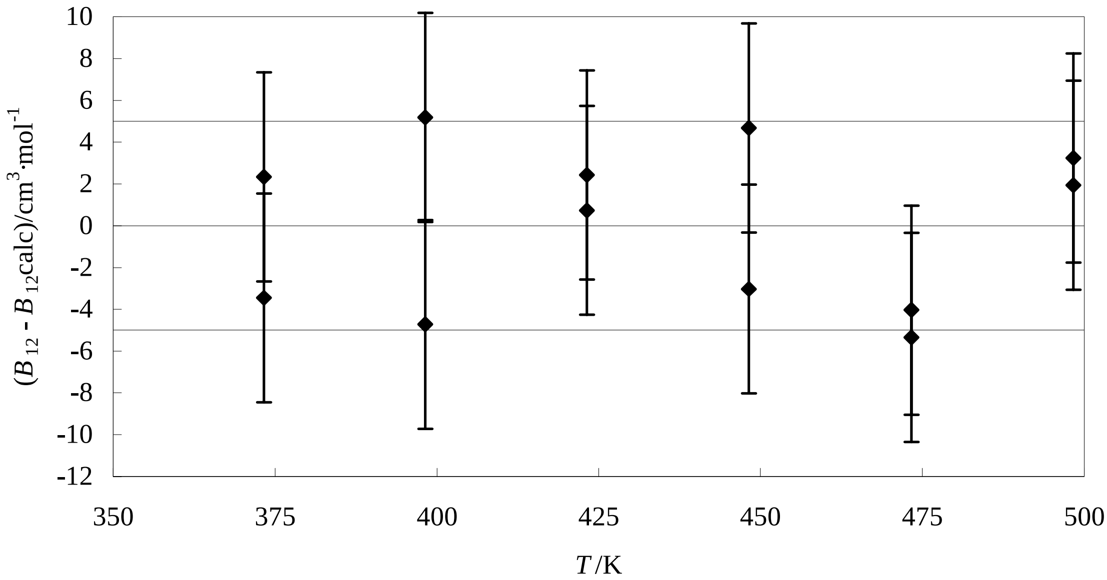

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Helium **[7440-59-7]** **He** **MW = 4.00** **357**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
333.15	10.9 ± 1.6	83-hou/wan	363.15	8.8 ± 1.5	83-hou/wan
343.15	10.1 ± 1.6	83-hou/wan	373.15	8.2 ± 1.5	83-hou/wan
353.15	9.4 ± 1.6	83-hou/wan			

Helium **[7440-59-7]** **He** **MW = 4.00** **358**
2,2-Dimethylpropane **[463-82-1]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
199.99	69.0 ± 6.9	75-bau/wes	240.00	60.0 ± 6.0	75-bau/wes
210.00	76.0 ± 7.6	75-bau/wes	249.58	60.0 ± 6.0	75-bau/wes
220.00	59.0 ± 5.9	75-bau/wes	257.86	59.0 ± 5.9	75-bau/wes
230.00	60.0 ± 6.0	75-bau/wes			

Helium **[7440-59-7]** **He** **MW = 4.00** **359**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	49.0 ± 8.0	68-eve/gai	323.20	67.0 ± 4.0	69-coa/kin
323.15	-57.0 ± 8.0	68-eve/gai			

Helium **[7440-59-7]** **He** **MW = 4.00** **360**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
333.15	13.7 ± 1.8	83-hou/wan	363.15	11.0 ± 1.7	83-hou/wan
343.15	12.7 ± 1.8	83-hou/wan	373.15	10.2 ± 1.6	83-hou/wan
353.15	11.8 ± 1.7	83-hou/wan			

Helium [7440-59-7] He MW = 4.00 **361**
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.
333.15	16.4	±	2.0	83-hou/wan	363.15	13.2	±	1.8	83-hou/wan
343.15	15.2	±	1.9	83-hou/wan	373.15	12.3	±	1.7	83-hou/wan
353.15	14.1	±	1.9	83-hou/wan					

Helium [7440-59-7] He MW = 4.00 **362**
Naphthalene [91-20-3] $C_{10}H_8$ MW = 128.17

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.
305.20	67.5	±	2.8	62-kin/rob	347.20	74.7	±	2.8	62-kin/rob

Mercury [7439-97-6] Hg MW = 200.59 **363**
Methanol [67-56-1] CH_4O MW = 32.04

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.
493.20	-126	±	13	74-ros/kay	553.20	-114	±	11	74-ros/kay
513.20	-120	±	12	74-ros/kay	573.20	-110	±	11	74-ros/kay
533.20	-112	±	11	74-ros/kay					

Mercury [7439-97-6] Hg MW = 200.59 **364**
Propanone [67-64-1] C_3H_6O MW = 58.08

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.
493.20	-156.0	±	16.0	74-ros/kay	553.20	-136.0	±	14.0	74-ros/kay
513.20	-154.0	±	15.0	74-ros/kay	573.20	-123.0	±	12.0	74-ros/kay
533.20	-146.0	±	15.0	74-ros/kay					

Mercury [7439-97-6] Hg MW = 200.59 **365**
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm^3· mol^{-1}			Ref.
457.20	-125.0	±	25.0	57-jep/ric	529.20	-82.0	±	16.0	57-jep/ric
491.20	-105.0	±	21.0	57-jep/ric					

Mercury [7439-97-6] **Hg** **MW = 200.59** **366**
Butane [106-97-8] **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
457.20	-195.0 ± 39.0	57-jep/ric	529.20	-157.0 ± 31.0	57-jep/ric
491.20	-175.0 ± 35.0	57-jep/ric			

Krypton [7439-90-9] **Kr** **MW = 83.80** **367**
Nitrogen [7727-37-9] **N_2** **MW = 28.01**

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / cm³· mol⁻¹	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / cm³· mol⁻¹	Ref.
148.20	0.500	19.3 ± 0.2	67-bre	223.20	0.500	8.0 ± 0.2	67-bre
173.20	0.500	13.5 ± 0.2	67-bre	273.20	0.500	6.1 ± 0.2	67-bre
198.20	0.500	10.4 ± 0.2	67-bre	323.20	0.500	4.5 ± 0.2	67-bre

Krypton [7439-90-9] **Kr** **MW = 83.80** **368**
Neon [7440-01-9] **Ne** **MW = 20.18**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3 \cdot mol^{-1}} = 3.0219 \cdot 10 - 6.1482 \cdot 10^3/(T/\mathrm{K}) - 6.7100 \cdot 10^4/(T/\mathrm{K})^2$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm³· mol⁻¹	T/K	$(B_{12} \pm 2\sigma_{est})$/cm³· mol⁻¹	T/K	$(B_{12} \pm 2\sigma_{est})$/cm³· mol⁻¹
100	-38.0 ± 4	250	4.6 ± 2	400	14.4 ± 3
150	-13.8 ± 3	300	9.0 ± 2	450	16.2 ± 3
200	-2.2 ± 2	350	12.1 ± 2	500	17.7 ± 3

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm³· mol⁻¹	$B_{exp} - B_{calc}$ / cm³· mol⁻¹	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm³· mol⁻¹	$B_{exp} - B_{calc}$ / cm³· mol⁻¹	Ref. (Symbol in Fig. 1)
100.00	-34.5 ± 0.6	3.5	72-mil/kid (♦)	130.00	-25.0 ± 4.0	-4.0	84-esl/rig (◊)
100.00	-37.8 ± 3.0	0.2	84-esl/rig (◊)	133.20	-19.7 ± 2.0	0.0	84-esl/rig (◊)
110.00	-31.0 ± 0.6	0.2	72-mil/kid (♦)	140.00	-14.1 ± 0.5	3.0	72-mil/kid (♦)
110.00	-34.2 ± 3.0	-3.0	84-esl/rig (◊)	140.00	-20.5 ± 4.0	-3.4	84-esl/rig (◊)
115.00	-27.8 ± 0.6	0.5	72-mil/kid (♦)	148.20	-12.5 ± 2.0	1.8	67-bre (□)
115.00	-31.0 ± 3.0	-2.7	84-esl/rig (◊)	148.20	-13.8 ± 2.5	0.5	84-esl/rig (◊)
120.00	-23.7 ± 3.7	2.0	62-tho/van-1 (×)	150.00	-5.7 ± 0.4	8.1	72-mil/kid (♦)
120.00	-25.5 ± 0.6	0.2	72-mil/kid (♦)	150.00	-14.8 ± 4.0	-1.0	84-esl/rig (◊)
120.00	-29.4 ± 3.0	-3.7	84-esl/rig (◊)	155.80	-10.5 ± 0.8	1.5	62-tho/van-1 (×)
123.20	-25.8 ± 2.0	-1.7	84-esl/rig (◊)	155.81	-9.9 ± 0.8	2.1	62-tho/van-1 (×)
130.00	-19.9 ± 0.5	1.1	72-mil/kid (♦)	163.20	-9.8 ± 2.5	0.2	84-esl/rig (◊)

cont.

Krypton + Neon (cont.)

Table 2. (cont.)

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
166.20	-9.7 ± 2.5	-0.5	84-esl/rig (◊)	273.20	8.2 ± 2.0	1.4	67-bre (□)
173.20	-6.3 ± 2.0	1.2	67-bre (□)	276.00	8.4 ± 5.0	1.3	80-sch/geh (■)
178.20	-8.2 ± 2.5	-1.8	84-esl/rig (◊)	294.20	-1.9 ± 0.6	-10.4	62-tho/van-1 (×)
198.20	-1.2 ± 2.0	1.3	67-bre (□)	294.20	1.5 ± 0.6	-7.0	62-tho/van-1 (×)
198.80	-3.4 ± 0.6	-1.0	62-tho/van-1 (×)	294.20	11.4 ± 0.6	2.9	62-tho/van-1 (×)
198.81	-2.9 ± 0.6	-0.5	62-tho/van-1 (×)	295.00	10.2 ± 5.0	1.6	80-sch/geh (■)
213.00	-2.3 ± 4.0	-2.2	80-sch/geh (■)	323.20	12.1 ± 2.0	1.5	67-bre (□)
223.00	0.0 ± 4.0	-1.3	80-sch/geh (■)	330.00	11.4 ± 5.0	0.4	80-sch/geh (■)
223.20	2.5 ± 2.0	1.2	67-bre (□)	365.00	13.9 ± 5.0	1.0	80-sch/geh (■)
241.20	0.9 ± 0.6	-2.7	62-tho/van-1 (×)	400.00	14.4 ± 5.0	0.0	80-sch/geh (■)
241.21	2.4 ± 0.6	-1.2	62-tho/van-1 (×)	425.00	15.7 ± 5.0	0.3	80-sch/geh (■)
242.00	2.8 ± 4.0	-0.9	80-sch/geh (■)	450.00	16.8 ± 5.0	0.6	80-sch/geh (■)
262.00	5.4 ± 4.0	-0.4	80-sch/geh (■)	475.00	16.2 ± 5.0	-0.8	80-sch/geh (■)

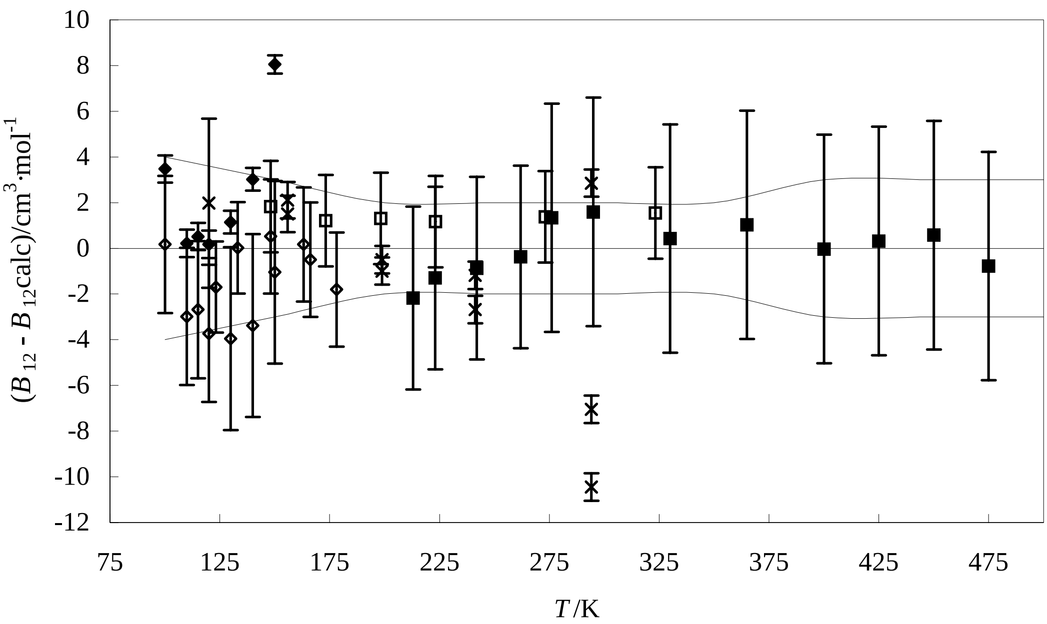

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
120.00	0.577	-68.5 ± 2.0	62-tho/van-1	198.80	0.592	-19.6 ± 2.0	62-tho/van-1
155.80	0.592	-34.6 ± 2.0	62-tho/van-1	198.81	0.592	-19.3 ± 2.0	62-tho/van-1
155.81	0.592	-34.3 ± 2.0	62-tho/van-1	241.20	0.592	-10.1 ± 1.5	62-tho/van-1

cont.

Krypton + Neon (cont.)

Table 3. (cont.)

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
241.21	0.592	9.4 ± 1.5	62-tho/van-1	294.20	0.577	-5.1 ± 1.5	62-tho/van-1
294.20	0.577	-6.8 ± 1.5	62-tho/van-1	294.21	0.577	0.6 ± 1.5	62-tho/van-1

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
148.20	0.500	87.4 ± 0.2	67-bre	223.20	0.500	45.4 ± 0.2	67-bre
173.20	0.500	67.2 ± 0.2	67-bre	273.20	0.500	34.3 ± 0.2	67-bre
198.20	0.500	54.4 ± 0.2	67-bre	323.20	0.500	27.4 ± 0.2	67-bre

Krypton [7439-90-9] Kr MW = 83.80 369
Xenon [7440-63-3] Xe MW = 131.29

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 4.6804 \cdot 10 - 2.5419 \cdot 10^4/(T/K) - 4.1375 \cdot 10^6/(T/K)^2 + 2.6799 \cdot 10^8/(T/K)^3 - 3.5667 \cdot 10^{10}/(T/K)^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
150	-297.6 ± 5	350	-55.7 ± 5	650	-1.3 ± 5
200	-172.5 ± 5	450	-28.0 ± 5	750	6.1 ± 5
250	-113.1 ± 5	550	-11.9 ± 5		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
160.00	-261.3 ± 4.0	1.4	71-pol (□)	273.20	-94.7 ± 3.0	0.2	67-bre (×)
170.00	-235.0 ± 4.0	-1.0	71-pol (□)	278.00	-95.8 ± 6.0	-4.1	77-sch/sch (■)
173.20	-229.5 ± 4.0	-3.6	67-bre (×)	278.00	-95.8 ± 6.0	-4.1	77-sch/sch (■)
180.00	-209.0 ± 4.0	1.1	71-pol (□)	280.00	-88.8 ± 4.0	1.5	71-pol (□)
190.00	-188.5 ± 4.0	1.4	71-pol (□)	295.00	-79.0 ± 6.0	2.2	77-sch/sch (■)
198.20	-177.6 ± 3.0	-2.1	67-bre (×)	300.00	-77.5 ± 4.0	0.9	71-pol (□)
200.00	-170.7 ± 4.0	1.8	71-pol (□)	320.00	-67.7 ± 4.0	0.6	71-pol (□)
202.00	-164.8 ± 6.0	4.5	77-sch/sch (■)	323.20	-67.6 ± 3.0	-0.8	67-bre (×)
213.00	-150.0 ± 6.0	3.3	77-sch/sch (■)	335.00	-61.7 ± 6.0	-0.1	77-sch/sch (■)
233.00	-130.6 ± 6.0	-1.2	77-sch/sch(■)	343.00	-59.9 ± 6.0	-1.5	77-ren/sch (♦)
220.00	-142.1 ± 4.0	2.2	71-pol (□)	370.00	-48.6 ± 6.0	0.1	77-sch/sch (■)
223.20	-143.1 ± 3.0	-2.7	67-bre (×)	400.00	-39.6 ± 6.0	0.2	77-sch/sch (■)
240.00	-120.1 ± 4.0	2.2	71-pol (□)	411.00	-37.0 ± 6.0	-0.1	77-ren/sch (♦)
253.00	-112.4 ± 6.0	-1.9	77-sch/sch (■)	435.00	-31.0 ± 6.0	0.2	77-sch/sch (■)
260.00	-101.9 ± 4.0	2.8	71-pol (□)	465.00	-25.0 ± 6.0	0.1	77-sch/sch (■)

cont.

Krypton + Xenon (cont.)

Table 2. (cont.)

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
481.00	-21.2 ± 6.0	1.0	77-ren/sch (♦)	623.00	-4.1 ± 6.0	-0.3	77-ren/sch (♦)
500.00	-19.0 ± 6.0	0.0	77-sch/sch (■)	700.00	1.8 ± 6.0	-0.9	77-ren/sch (♦)
553.00	-12.3 ± 6.0	-0.8	77-ren/sch (♦)				

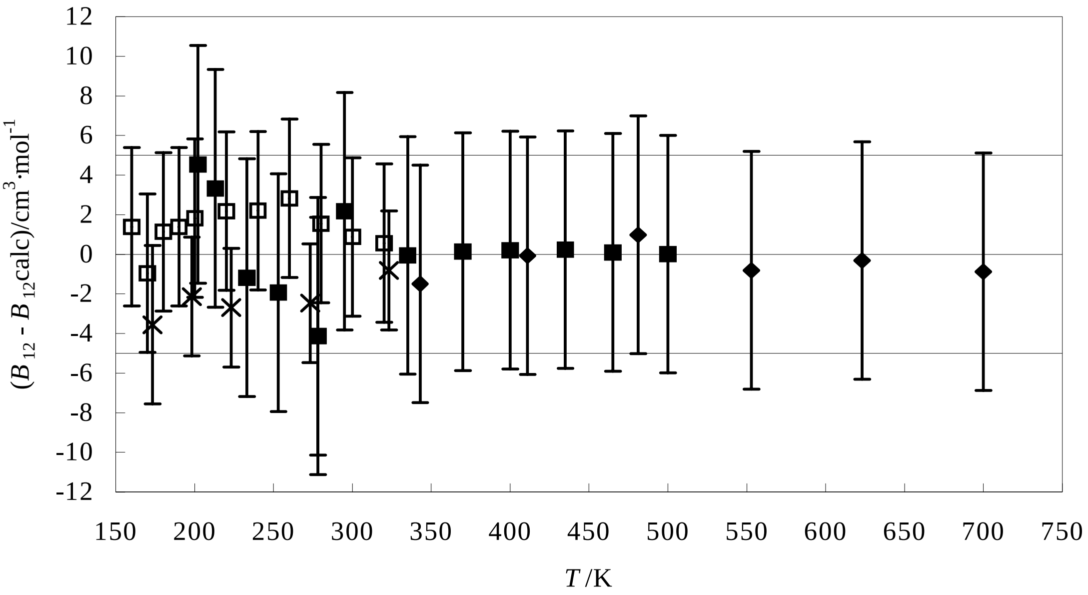

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	0.500	31.3 ± 0.2	67-bre	273.20	0.500	13.9 ± 0.2	67-bre
198.20	0.500	23.9 ± 0.2	67-bre	323.20	0.500	9.5 ± 0.2	67-bre
223.20	0.500	17.7 ± 0.2	67-bre				

Krypton **[7439-90-9]** **Kr** **MW = 83.80** **370**
Tetrafluoromethane **[75-73-0]** **CF_4** **MW = 88.00**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-62.3 ± 1.4	86-dun/big	320.00	-46.5 ± 0.9	86-dun/big
300.00	-56.3 ± 1.2	86-dun/big			

cont.

Krypton + Tetrafluoromethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	13.0 ± 0.4	86-dun/big	320.00	0.500	10.8 ± 0.4	86-dun/big
300.00	0.500	12.3 ± 0.4	86-dun/big				

Krypton **[7439-90-9]** **Kr** **MW = 83.80** **371**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3{\cdot}mol^{-1} = 6.2243 \cdot 10 - 3.1992 \cdot 10^4/(T/K) + 5.2235 \cdot 10^5/(T/K)^2 - 2.1294 \cdot 10^8/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
120	-291.3 ± 3	200	-111.3 ± 2	300	-46.5 ± 2
150	-190.9 ± 2	250	-71.0 ± 2		

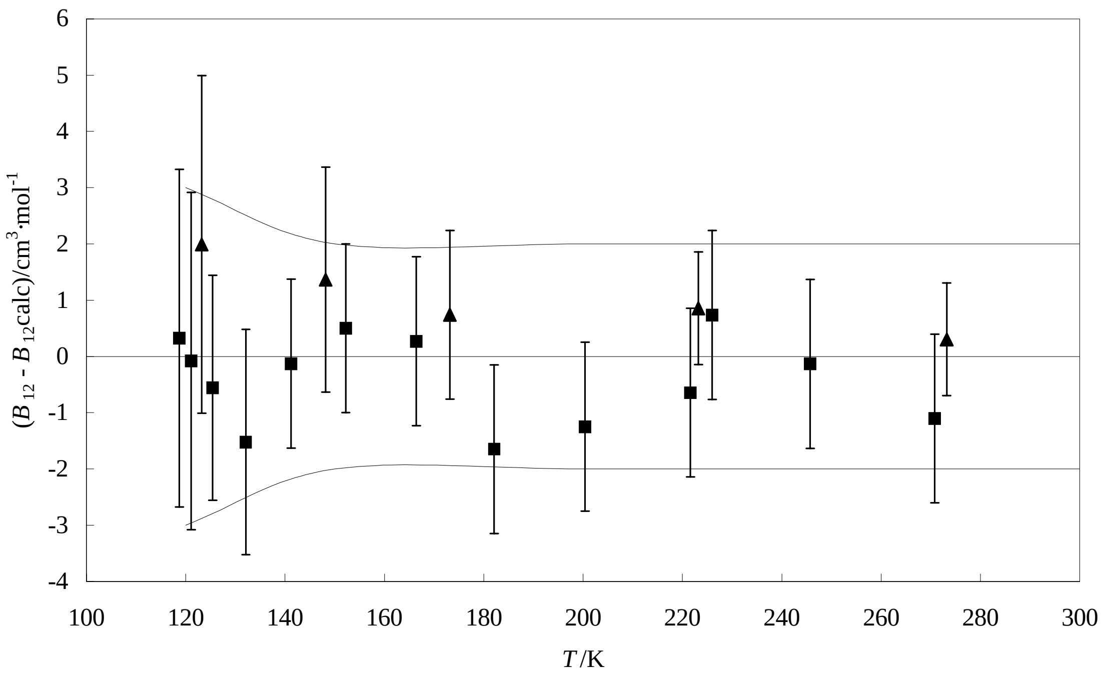

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Krypton + Methane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
118.70	-297.2 ± 3.0	0.3	68-byr/jon (■)	173.20	-145.3 ± 1.5	0.7	67-bre (▲)
121.10	-286.3 ± 3.0	-0.1	68-byr/jon (■)	182.10	-134.6 ± 1.5	-1.6	68-byr/jon (■)
123.20	-274.9 ± 3.0	2.0	67-bre (▲)	200.40	-112.1 ± 1.5	-1.3	68-byr/jon (■)
125.40	-268.2 ± 2.0	-0.6	68-byr/jon (■)	221.60	-91.7 ± 1.5	-0.6	68-byr/jon (■)
132.10	-243.9 ± 2.0	-1.5	68-byr/jon (■)	223.20	-88.9 ± 1.0	0.9	67-bre (▲)
141.20	-213.9 ± 1.5	-0.1	68-byr/jon (■)	226.00	-86.8 ± 1.5	0.7	68-byr/jon (■)
148.20	-193.9 ± 2.0	1.4	67-bre (▲)	245.70	-73.8 ± 1.5	-0.1	68-byr/jon (■)
152.20	-185.3 ± 1.5	0.5	68-byr/jon (■)	270.80	-60.6 ± 1.5	-1.1	68-byr/jon (■)
166.40	-157.1 ± 1.5	0.3	68-byr/jon (■)	273.20	-58.0 ± 1.0	0.3	67-bre (▲)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
123.20	0.500	1.7 ± 0.2	67-bre	223.20	0.500	0.3 ± 0.2	67-bre
148.20	0.500	1.2 ± 0.2	67-bre	273.20	0.500	0.2 ± 0.2	67-bre
173.20	0.500	0.7 ± 0.2	67-bre				

Krypton [7439-90-9] Kr MW = 83.80 372
Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-104.9 ± 10.0	92-bel/big	310.00	-87.9 ± 9.0	92-bel/big
300.00	-92.2 ± 10.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	62.1 ± 1.0	92-bel/big	310.00	0.500	54.5 ± 1.0	92-bel/big
300.00	0.500	60.4 ± 1.0	92-bel/big				

Krypton [7439-90-9] Kr MW = 83.80 373
1,1-Difluoroethane [75-37-6] $C_2H_4F_2$ MW = 66.05

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-112.9 ± 10.0	92-bel/big	310.00	-90.4 ± 9.0	92-bel/big
300.00	-98.8 ± 10.0	92-bel/big			

cont.

Krypton + 1,1-Difluoroethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	194.5 ± 1.0	92-bel/big	310.00	0.500	162.5 ± 1.0	92-bel/big
300.00	0.500	179.1 ± 1.0	92-bel/big				

Krypton [7439-90-9] Kr MW = 83.80 374
Ethane [74-84-0] C_2H_6 MW = 30.07

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-98.6 ± 10.0	92-bel/big	310.00	-82.2 ± 9.0	92-bel/big
300.00	-91.2 ± 10.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	26.9 ± 1.0	92-bel/big	310.00	0.500	26.0 ± 1.0	92-bel/big
300.00	0.500	25.1 ± 1.0	92-bel/big				

Krypton [7439-90-9] Kr MW = 83.80 375
Octafluorocyclobutane [115-25-3] C_4F_8 MW = 200.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-190.0 ± 5.0	92-bel/big	310.00	-159.8 ± 5.0	92-bel/big
300.00	-170.0 ± 5.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	259.6 ± 1.0	92-bel/big	310.00	0.500	216.9 ± 1.0	92-bel/big
300.00	0.500	238.8 ± 1.0	92-bel/big				

Nitrogen [7727-37-9] N_2 MW = 28.01 376
Nitric oxide [10102-43-9] NO MW = 30.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
124.00	-127.0 ± 8.0	88-fos/nat	173.00	-65.5 ± 5.0	88-fos/nat
140.00	-104.8 ± 7.0	88-fos/nat	213.00	-37.2 ± 4.0	88-fos/nat

cont.

Nitrogen + Nitric oxide (cont.)

Table 2. (cont.)

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
296.00	-11.9 ± 2.0	88-fos/nat	455.00	10.7 ± 4.0	88-fos/nat
353.00	-0.9 ± 3.0	88-fos/nat	476.00	12.7 ± 4.0	88-fos/nat
403.00	5.6 ± 3.0	88-fos/nat			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **377**
Neon **[7440-01-9]** **Ne** **MW = 20.18**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 3.2807 \cdot 10 - 5.4303 \cdot 10^3/(T/K) - 1.2152 \cdot 10^5/(T/K)^2 + 8.2859 \cdot 10^6/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
100	-25.4 ± 3	250	9.7 ± 3	400	18.6 ± 3
150	-6.3 ± 3	300	13.7 ± 3	450	20.2 ± 3
200	3.7 ± 3	350	16.5 ± 3		

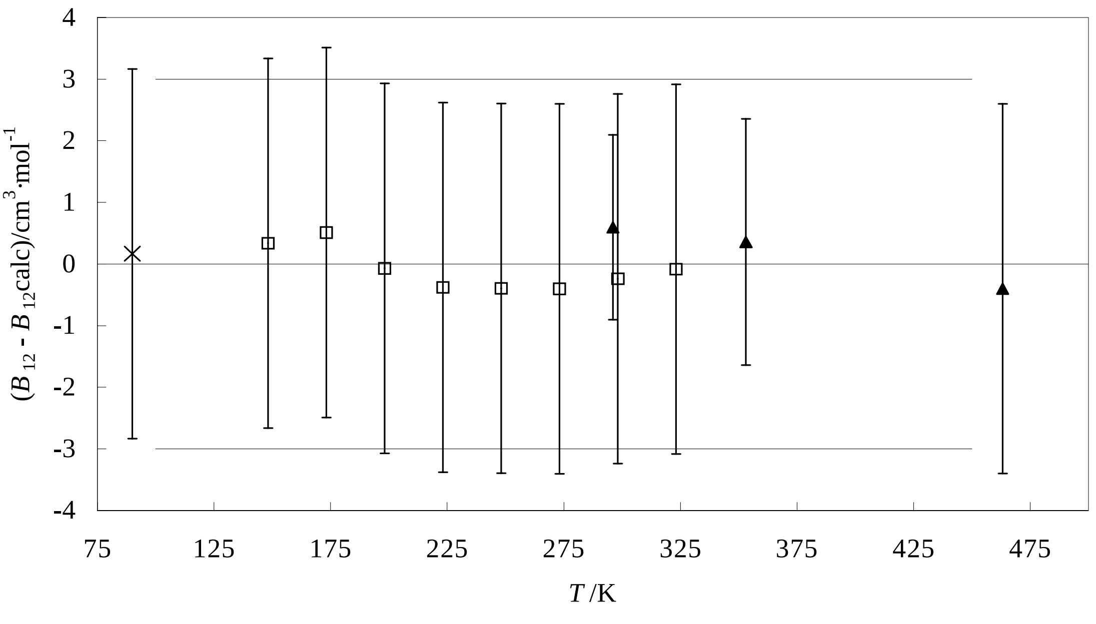

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Nitrogen + Neon (cont.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
90.00	-31.0 ± 3.0	0.2	59-kno/bee (×)	273.15	11.3 ± 3.0	-0.4	69-bre/vau (□)
148.15	-6.5 ± 3.0	0.3	69-bre/vau (□)	296.15	14.0 ± 1.5	0.6	96-vat/sch (▲)
173.15	-0.5 ± 3.0	0.5	69-bre/vau (□)	298.15	13.3 ± 3.0	-0.2	69-bre/vau (□)
198.15	3.3 ± 3.0	-0.1	69-bre/vau (□)	323.15	15.0 ± 3.0	-0.1	69-bre/vau (□)
223.15	6.4 ± 3.0	-0.4	69-bre/vau (□)	353.15	17.0 ± 2.0	0.4	96-vat/sch (▲)
248.15	9.1 ± 3.0	-0.4	69-bre/vau (□)	463.15	20.2 ± 3.0	-0.4	96-vat/sch (▲)

Nitrogen [7727-37-9] N_2 **MW = 28.01** **378**
Oxygen [7782-44-7] O_2 **MW = 32.00**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 3.8110 \cdot 10 - 1.2265 \cdot 10^4/(T/\text{K}) - 6.6992 \cdot 10^5/(T/\text{K})^2 - 3.2660 \cdot 10^7/(\text{T/K})^3 + 1.1664 \cdot 10^9/(T/\text{K})^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3\cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3\cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3\cdot mol^{-1}$
90	-207.8 ± 5	200	-43.3 ± 3	350	-3.1 ± 3
100	-172.5 ± 5	250	-23.5 ± 3	400	2.8 ± 3
150	-80.8 ± 3	300	-11.3 ± 3	500	10.7 ± 3

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
87.20	-247.0 ± 7.0	-27.3	88-fos/nat (■)	348.15	-3.6 ± 0.8	-0.3	94-hal/igl (▲)
90.00	-209.0 ± 3.0	-1.1	59-kno/bee (□)	350.00	-3.0 ± 0.8	0.1	94-hal/igl (▲)
140.00	-96.3 ± 5.0	-3.8	88-fos/nat (■)	353.00	-0.1 ± 2.0	2.6	88-fos/nat (■)
188.15	-50.6 ± 1.7	-0.6	94-hal/igl (▲)	360.00	-1.6 ± 0.8	0.2	94-hal/igl (▲)
190.00	-49.6 ± 4.0	-0.7	88-fos/nat (■)	370.00	-0.4 ± 0.8	0.1	94-hal/igl (▲)
203.15	-42.1 ± 1.7	-0.4	94-hal/igl (▲)	380.00	0.7 ± 0.8	0.0	94-hal/igl (▲)
220.00	-34.8 ± 3.0	-0.7	88-fos/nat (■)	390.00	1.8 ± 0.8	0.0	94-hal/igl (▲)
223.15	-33.3 ± 1.7	-0.5	94-hal/igl (▲)	400.00	4.6 ± 0.8	1.8	94-hal/igl (▲)
240.00	-25.1 ± 2.0	1.5	88-fos/nat (■)	403.00	6.1 ± 3.0	3.0	88-fos/nat (■)
248.15	-24.4 ± 1.7	-0.4	94-hal/igl (▲)	430.00	5.4 ± 0.8	-0.2	94-hal/igl (▲)
273.15	-17.2 ± 0.2	0.0	94-hal/igl (▲)	440.00	6.2 ± 0.8	-0.2	94-hal/igl (▲)
290.00	-12.5 ± 1.0	0.8	82-mar/tre (Δ)	450.00	6.9 ± 0.8	-0.3	94-hal/igl (▲)
298.15	-11.9 ± 0.2	-0.3	94-hal/igl (▲)	455.00	10.5 ± 3.0	2.9	88-fos/nat (■)
300.00	-10.8 ± 0.9	0.5	82-mar/tre (Δ)	460.00	7.6 ± 0.8	-0.4	94-hal/igl (▲)
303.15	-9.7 ± 0.3	1.0	53-gor/mil (×)	470.00	8.2 ± 0.8	-0.5	94-hal/igl (▲)
320.00	-7.9 ± 0.9	-0.3	82-mar/tre (Δ)	476.00	12.2 ± 3.0	3.1	88-fos/nat (■)
323.15	-7.5 ± 0.2	-0.4	94-hal/igl (▲)	480.00	8.8 ± 0.8	-0.6	94-hal/igl (▲)

cont.

Nitrogen + Oxygen (cont.)

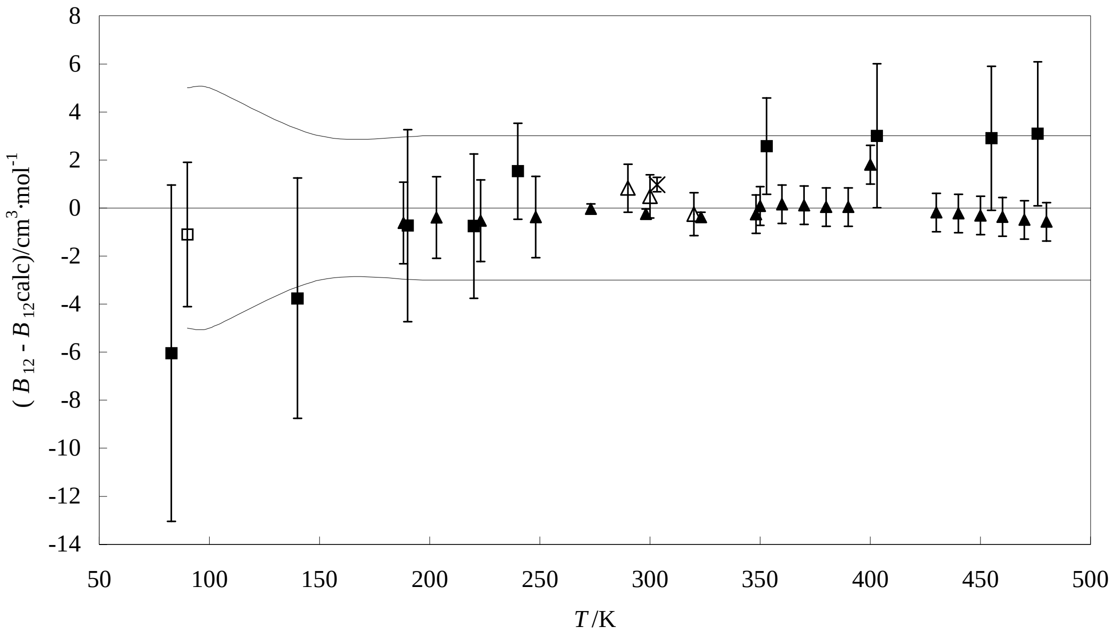

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.790	-9.6 ± 0.1	84-izu	302.20	0.790	-7.4 ± 0.1	84-izu

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
290.00	0.790	1.5 ± 0.1	84-izu	302.20	0.790	1.5 ± 0.1	84-izu

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **379**
Xenon **[7440-63-3]** **Xe** **MW = 131.29**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	-125.4 ± 2.0	67-bre	273.20	-45.4 ± 2.0	67-bre
223.20	-74.4 ± 2.0	67-bre	323.20	-27.2 ± 2.0	67-bre

cont.

Nitrogen + Xenon (cont.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	0.500	84.7 ± 0.2	67-bre	273.20	0.500	37.1 ± 0.2	67-bre
223.20	0.500	52.2 ± 0.2	67-bre	323.00	0.500	28.6 ± 0.2	67-bre

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **380**
Tetrachloromethane **[56-23-5]** **CCl_4** **MW = 153.82**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	-132.0 ± 4.0	72-gup/kin	348.15	-49.6 ± 5.5	59-pra/ben
298.20	-102.0 ± 4.0	72-gup/kin	348.20	-64.0 ± 2.0	72-gup/kin
323.15	-58.5 ± 5.9	59-pra/ben	353.20	-24.0 ± 10.0	71-vig/sem
323.20	-91.0 ± 2.0	72-gup/kin			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **381**
Tetrafluoromethane **[75-73-0]** **CF_4** **MW = 88.00**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-33.0 ± 1.4	86-dun/big	320.00	-22.2 ± 1.4	86-dun/big
300.00	-29.0 ± 1.4	86-dun/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	17.6 ± 0.4	86-dun/big	320.00	0.500	14.9 ± 0.4	86-dun/big
300.00	0.500	16.4 ± 0.4	86-dun/big				

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **382**
Chlorodifluoromethane **[75-45-6]** **$CHClF_2$** **MW = 86.47**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	-42.6 ± 6.0	67-bre	293.20	-86.8 ± 5.0	90-jia/wan
273.20	-66.2 ± 5.0	67-bre	298.20	-60.9 ± 4.0	67-bre

cont.

Nitrogen + Chlorodifluoromethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	238.7 ± 0.2	67-bre	298.20	0.500	121.1 ± 0.2	67-bre
273.20	0.500	157.0 ± 0.2	67-bre				

Nitrogen [7727-37-9] N_2 MW = 28.01 383
Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-103 ± 10	87-bar/new	323.15	-30 ± 3	87-bar/new
298.15	-100 ± 4	73-gup/les	353.20	-12 ± 10	71-vig/sem
308.15	-78 ± 7	87-bar/new			

Nitrogen [7727-37-9] N_2 MW = 28.01 384
Dichloromethane [75-09-2] CH_2Cl_2 MW = 84.93

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 8.1349 \cdot 10^2 - 9.0416 \cdot 10^5/(T/K) + 3.2388 \cdot 10^8/(T/K)^2 - 4.0768 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
325	-89.8 ± 10	350	-76.8 ± 9	425	-51.9 ± 8

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
323.20	-91 ± 11.0	0.0	98-wor/joh 1 (♦)	383.20	-65 ± 9.0	-0.1	98-wor/joh 1 (♦)
333.20	-84 ± 11.0	0.9	98-wor/joh 1 (♦)	393.20	-62 ± 9.0	-0.2	98-wor/joh 1 (♦)
343.20	-81 ± 10.0	-1.2	98-wor/joh 1 (♦)	403.20	-59 ± 8.0	-0.3	98-wor/joh 1 (♦)
353.20	-76 ± 10.0	-0.6	98-wor/joh 1 (♦)	413.20	-56 ± 8.0	-0.4	98-wor/joh 1 (♦)
363.20	-71 ± 10.0	0.6	98-wor/joh 1 (♦)	423.20	-52 ± 8.0	0.5	98-wor/joh 1 (♦)
373.20	-67 ± 9.0	1.1	98-wor/joh 1 (♦)				

cont.

Nitrogen + Dichloromethane (cont.)

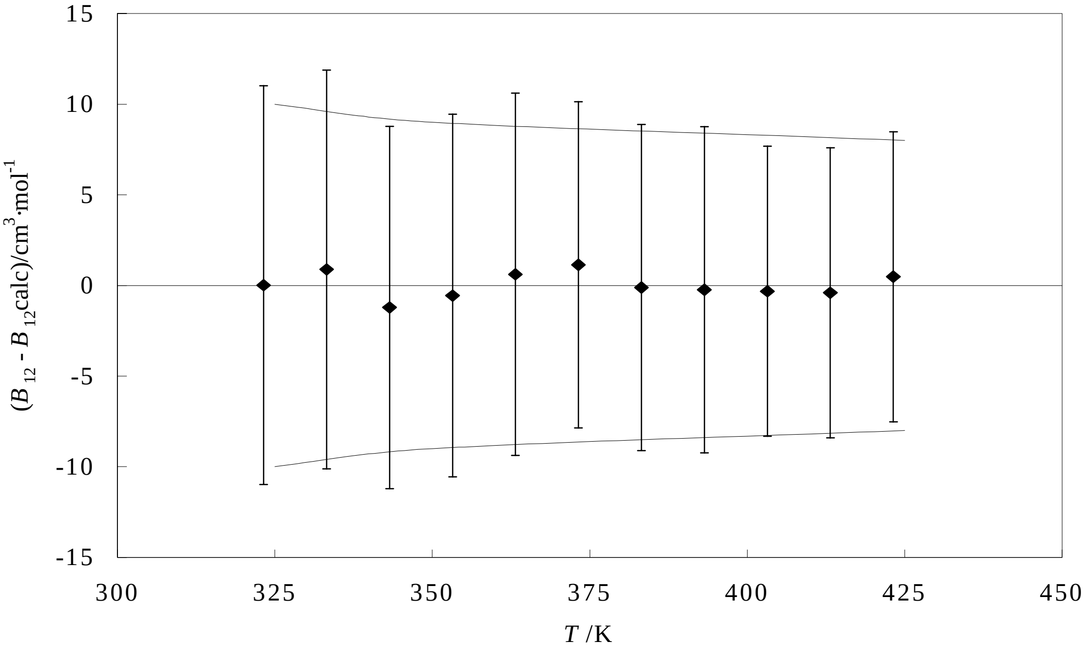

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Nitrogen	**[7727-37-9]**	**N_2**	**MW = 28.01**	**385**
Nitromethane	**[75-52-5]**	**CH_3NO_2**	**MW = 61.04**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	41 ± 4	71-vig/sem			

Nitrogen	**[7727-37-9]**	**N_2**	**MW = 28.01**	**386**
Methane	**[74-82-8]**	**CH_4**	**MW = 16.04**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 2.3092 \cdot 10 - 1.6786 \cdot 10^3/(T/K) - 3.3822 \cdot 10^6/(T/K)^2 + 7.1634 \cdot 10^7/(T/K)^3$

cont.

Nitrogen + Methane (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
175	-83.6 ± 8	250	-33.2 ± 3	350	-7.6 ± 3
200	-60.9 ± 5	300	-17.4 ± 3	400	-1.1 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	B_{exp} - B_{calc} / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	B_{exp} - B_{calc} / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
173.15	-87.3 ± 1.0	-1.7	71-ng (□)	293.15	-19.6 ± 0.6	-0.5	71-ng (□)
173.15	-74.6 ± 8.0	11.0	89-did/zhd 1 (■)	293.15	-19.7 ± 0.5	-0.6	88-jae/aud (Δ)
193.15	-68.0 ± 1.0	-1.7	71-ng (□)	293.15	-21.6 ± 2.8	-2.5	91-lop/roz (●)
198.15	-56.8 ± 8.0	5.5	89-did/zhd 1 (■)	298.15	-15.4 ± 5.0	2.5	89-did/zhd 1 (■)
213.15	-53.9 ± 1.0	-2.1	71-ng (□)	300.00	-17.3 ± 1.0	0.1	82-mar/tre (▲)
223.15	-43.0 ± 5.0	2.9	89-did/zhd 1 (■)	313.15	-15.1 ± 0.6	-0.7	71-ng (□)
233.15	-42.4 ± 1.0	-1.7	71-ng (□)	313.15	-14.7 ± 0.5	-0.3	88-jae/aud (Δ)
248.15	-31.9 ± 5.0	2.0	89-did/zhd 1 (■)	320.00	-12.9 ± 1.0	0.1	82-mar/tre (▲)
253.15	-33.4 ± 1.0	-1.5	71-ng (□)	333.15	-10.6 ± 0.5	-0.1	71-ng (□)
273.15	-26.7 ± 0.6	-1.8	71-ng (□)	333.15	-10.8 ± 0.5	-0.3	88-jae/aud (Δ)
273.15	-25.8 ± 0.5	-0.9	88-jae/aud (Δ)	348.15	-3.6 ± 4.0	4.3	89-did/zhd 1 (■)
273.15	-22.9 ± 5.0	2.0	89-did/zhd 1 (■)	353.15	-7.1 ± 0.5	0.1	71-ng (□)
288.70	-17.8 ± 5.0	2.5	61-mas/eak (×)	373.15	-5.1 ± 0.5	-0.8	71-ng (□)
290.00	-19.8 ± 1.1	0.2	82-mar/tre (▲)	393.15	-2.5 ± 0.5	-0.6	71-ng (□)

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / cm$^3\cdot$ mol^{-1}	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / cm$^3\cdot$ mol^{-1}	Ref.
173.15	0.189	-1540 ± 560	89-did/zhd	223.15	0.386	-564 ± 32	89-did/zhd
173.15	0.386	-290 ± 330	89-did/zhd	223.15	0.588	-475 ± 28	89-did/zhd
173.15	0.588	-990 ± 270	89-did/zhd	223.15	0.794	-354 ± 19	89-did/zhd
173.15	0.794	-300 ± 480	89-did/zhd	248.15	0.189	-737 ± 100	89-did/zhd
173.15	0.189	-838 ± 100	89-did/zhd	248.15	0.386	-479 ± 41	89-did/zhd
173.15	0.386	-701 ± 66	89-did/zhd	248.15	0.588	-190 ± 100	89-did/zhd
173.15	0.588	-603 ± 60	89-did/zhd	248.15	0.794	-281 ± 21	89-did/zhd
173.15	0.794	-502 ± 80	89-did/zhd	248.15	0.189	-633 ± 21	89-did/zhd
198.15	0.189	-784 ± 49	89-did/zhd	248.15	0.386	-487 ± 21	89-did/zhd
198.15	0.386	-837 ± 99	89-did/zhd	248.15	0.588	-363 ± 41	89-did/zhd
198.15	0.588	-486 ± 49	89-did/zhd	248.15	0.794	-291 ± 17	89-did/zhd
198.15	0.794	-377 ± 49	89-did/zhd	273.15	0.189	-393 ± 91	89-did/zhd
198.15	0.189	-753 ± 16	89-did/zhd	273.15	0.386	-520 ± 23	89-did/zhd
198.15	0.386	-746 ± 20	89-did/zhd	273.15	0.588	-304 ± 34	89-did/zhd
198.15	0.588	-470 ± 16	89-did/zhd	273.15	0.794	309 ± 390	89-did/zhd
198.15	0.794	-385 ± 20	89-did/zhd	273.15	0.189	-509 ± 23	89-did/zhd
223.15	0.189	-384 ± 19	89-did/zhd	273.15	0.386	-477 ± 20	89-did/zhd
223.15	0.386	-397 ± 93	89-did/zhd	273.15	0.588	-343 ± 23	89-did/zhd
223.15	0.588	-382 ± 74	89-did/zhd	273.15	0.794	-291 ± 91	89-did/zhd
223.15	0.794	-262 ± 74	89-did/zhd	298.15	0.189	-290 ± 22	89-did/zhd
223.15	0.189	-581 ± 20	89-did/zhd	298.15	0.386	-260 ± 20	89-did/zhd

cont.

Nitrogen + Methane (cont.)

Table 3. (cont.)

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.588	-170 ± 17	89-did/zhd	348.15	0.386	-210 ± 14	89-did/zhd
298.15	0.794	-62 ± 7	89-did/zhd	348.15	0.588	-49 ± 17	89-did/zhd
298.15	0.189	-526 ± 20	89-did/zhd	348.15	0.794	29 ± 14	89-did/zhd
298.15	0.386	-208 ± 25	89-did/zhd	348.15	0.189	-168 ± 12	89-did/zhd
298.15	0.588	-149 ± 17	89-did/zhd	348.15	0.386	-203 ± 12	89-did/zhd
298.15	0.794	-57 ± 7	89-did/zhd	348.15	0.588	-61 ± 14	89-did/zhd
348.15	0.189	-160 ± 12	89-did/zhd	348.15	0.794	26 ± 14	89-did/zhd

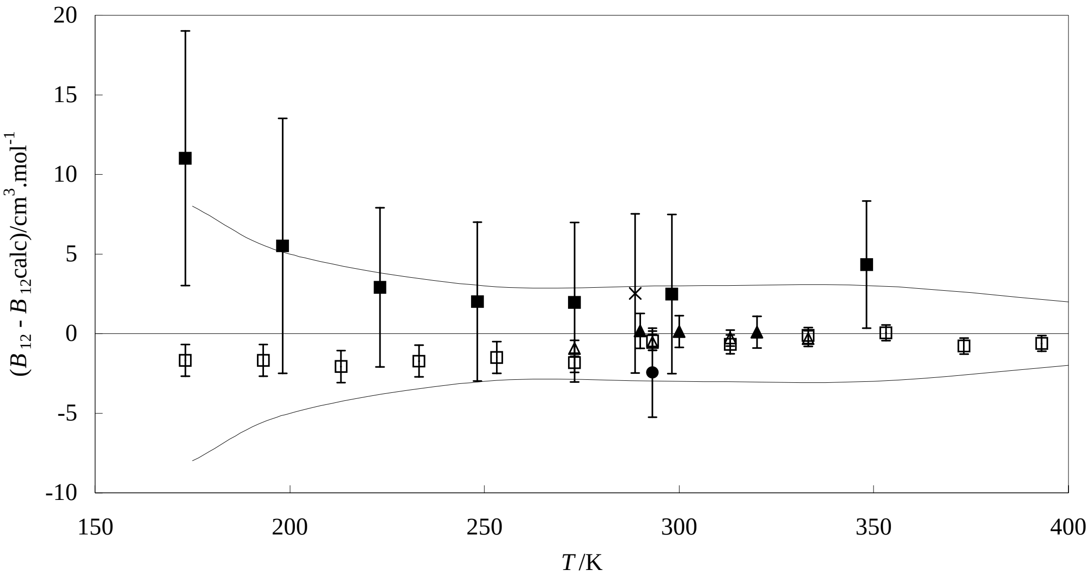

Fig. 1 The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	0.500	6.2 ± 0.2	67-bre	300.00	0.500	5.9 ± 0.2	82-mar/tre
290.00	0.500	6.1 ± 0.2	82-mar/tre	320.00	0.500	5.4 ± 0.2	82-mar/tre

cont.

Nitrogen + Methane (cont.)

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
173.15	0.189	0.0 ± 0.1	89-did/zhd	248.15	0.588	0.0 ± 0.0	89-did/zhd
173.15	0.386	-0.2 ± 0.1	89-did/zhd	248.15	0.794	0.0 ± 0.0	89-did/zhd
173.15	0.588	0.0 ± 0.0	89-did/zhd	248.15	0.189	6.9 ± 0.1	89-did/zhd-1
173.15	0.794	0.0 ± 0.0	89-did/zhd	248.15	0.386	7.3 ± 0.2	89-did/zhd-1
173.15	0.189	-0.2 ± 0.0	89-did/zhd	248.15	0.588	7.5 ± 0.2	89-did/zhd-1
173.15	0.386	-0.1 ± 0.0	89-did/zhd	248.15	0.794	4.6 ± 0.1	89-did/zhd-1
173.15	0.588	-0.1 ± 0.0	89-did/zhd	273.15	0.189	0.0 ± 0.0	89-did/zhd
173.15	0.794	-0.0 ± 0.0	89-did/zhd	273.15	0.386	0.0 ± 0.0	89-did/zhd
173.15	0.189	28.2 ± 3.0	89-did/zhd-1	273.15	0.588	0.0 ± 0.0	89-did/zhd
173.15	0.386	29.1 ± 2.3	89-did/zhd-1	273.15	0.794	-0.1 ± 0.1	89-did/zhd
173.15	0.588	26.9 ± 3.2	89-did/zhd-1	273.15	0.189	0.0 ± 0.0	89-did/zhd
173.15	0.794	17.2 ± 1.2	89-did/zhd-1	273.15	0.386	0.0 ± 0.0	89-did/zhd
198.15	0.189	0.0 ± 0.0	89-did/zhd	273.15	0.588	0.0 ± 0.0	89-did/zhd
198.15	0.386	0.0 ± 0.0	89-did/zhd	273.15	0.794	0.1 ± 0.1	89-did/zhd
198.15	0.588	-0.0 ± 0.0	89-did/zhd	273.15	0.189	4.4 ± 0.2	89-did/zhd-1
198.15	0.794	0.0 ± 0.0	89-did/zhd	273.15	0.386	5.4 ± 0.1	89-did/zhd-1
198.15	0.189	-0.0 ± 0.0	89-did/zhd	273.15	0.588	5.3 ± 0.1	89-did/zhd-1
198.15	0.386	-0.0 ± 0.0	89-did/zhd	273.15	0.794	3.2 ± 0.2	89-did/zhd-1
198.15	0.588	-0.0 ± 0.0	89-did/zhd	298.15	0.189	0.0 ± 0.0	89-did/zhd
198.15	0.794	-0.0 ± 0.0	89-did/zhd	298.15	0.386	0.0 ± 0.0	89-did/zhd
198.15	0.386	15.1 ± 0.6	89-did/zhd-1	298.15	0.588	0.0 ± 0.0	89-did/zhd
198.15	0.588	14.5 ± 0.9	89-did/zhd-1	298.15	0.794	0.0 ± 0.0	89-did/zhd
198.15	0.794	17.2 ± 0.5	89-did/zhd-1	298.15	0.189	0.0 ± 0.0	89-did/zhd
223.15	0.189	-0.0 ± 0.0	89-did/zhd	298.15	0.386	0.0 ± 0.0	89-did/zhd
223.15	0.386	-0.0 ± 0.0	89-did/zhd	298.15	0.588	0.0 ± 0.0	89-did/zhd
223.15	0.588	0.0 ± 0.0	89-did/zhd	298.15	0.794	0.0 ± 0.0	89-did/zhd
223.15	0.794	0.0 ± 0.0	89-did/zhd	298.15	0.189	4.0 ± 0.1	89-did/zhd-1
223.15	0.189	-0.0 ± 0.0	89-did/zhd	298.15	0.386	4.1 ± 0.1	89-did/zhd-1
223.15	0.386	0.0 ± 0.0	89-did/zhd	298.15	0.588	3.8 ± 0.1	89-did/zhd-1
223.15	0.588	0.0 ± 0.0	89-did/zhd	298.15	0.794	2.8 ± 0.2	89-did/zhd-1
223.15	0.794	0.0 ± 0.0	89-did/zhd	348.15	0.189	-0.0 ± 0.0	89-did/zhd
223.15	0.189	10.3 ± 0.5	89-did/zhd-1	348.15	0.386	0.0 ± 0.0	89-did/zhd-1
223.15	0.386	11.9 ± 0.5	89-did/zhd-1	348.15	0.588	-0.0 ± 0.0	89-did/zhd-1
223.15	0.588	10.6 ± 0.4	89-did/zhd-1	348.15	0.794	-0.0 ± 0.0	89-did/zhd-1
223.15	0.794	6.2 ± 0.1	89-did/zhd-1	348.15	0.189	-0.0 ± 0.0	89-did/zhd
248.15	0.189	0.0 ± 0.0	89-did/zhd	348.15	0.386	0.0 ± 0.0	89-did/zhd-1
248.15	0.386	0.0 ± 0.0	89-did/zhd	348.15	0.588	-0.0 ± 0.0	89-did/zhd-1
248.15	0.588	-0.0 ± 0.0	89-did/zhd	348.15	0.794	-0.0 ± 0.0	89-did/zhd-1
248.15	0.794	0.0 ± 0.0	89-did/zhd	348.15	0.189	0.6 ± 0.1	89-did/zhd-1
248.15	0.189	0.0 ± 0.0	89-did/zhd	348.15	0.386	0.5 ± 0.0	89-did/zhd-1
248.15	0.386	0.0 ± 0.0	89-did/zhd	348.15	0.584	-0.2 ± 0.1	89-did/zhd-1

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	1.8 ± 0.2	88-jae/aud	313.15	1.7 ± 0.2	88-jae/aud
293.15	1.7 ± 0.2	88-jae/aud	333.15	1.7 ± 0.2	88-jae/aud

cont.

Nitrogen + Methane (cont.)

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot$ cm$^6 \cdot$ mol^{-2}	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot$ cm$^6 \cdot$ mol^{-2}	Ref.
273.15	2.2 ± 0.2	88-jae/aud	313.15	1.9 ± 0.2	88-jae/aud
293.15	2.0 ± 0.2	88-jae/aud	333.15	1.9 ± 0.2	88-jae/aud

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **387**
Methanol **[67-56-1]** **CH_4O** **MW = 32.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = -3.4678 \cdot 10^2 + 2.6522 \cdot 10^5/(T/\text{K}) - 6.9489 \cdot 10^7/(T/\text{K})^2 + 4.2123 \cdot 10^9/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
225	-170.9 ± 10	300	-78.8 ± 10		
250	-128.1 ± 10	350	-58.0 ± 10		

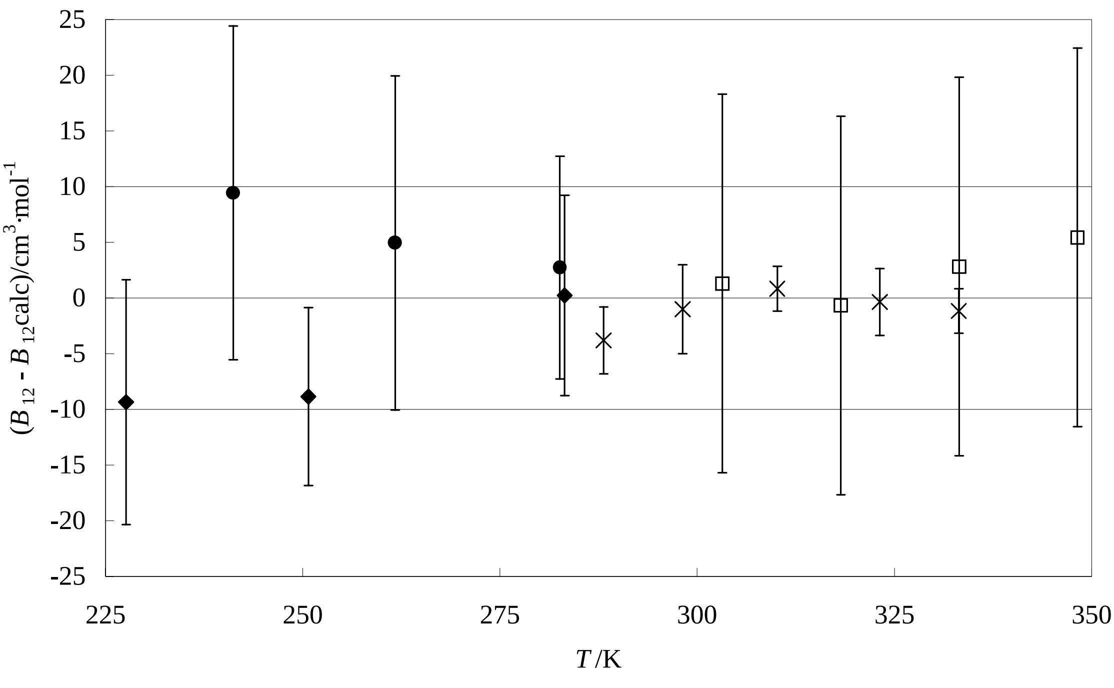

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Nitrogen + Methanol (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
227.60	-175.0 ± 11.0	-9.3	80-laz/bre (♦)	303.20	-75.5 ± 17.0	1.3	77-neo/kud (□)
241.20	-132.0 ± 15.0	9.4	93-sch/lan (●)	310.15	-72.0 ± 2.0	0.8	72-hem/kin (×)
250.70	-136.0 ± 8.0	-8.8	80-laz/bre (♦)	318.20	-69.5 ± 17.0	-0.7	77-neo/kud (□)
261.70	-108.0 ± 15.0	4.9	93-sch/lan (●)	323.15	-67.0 ± 3.0	-0.3	72-hem/kin (×)
282.60	-89.0 ± 10.0	2.7	93-sch/lan (●)	333.15	-64.0 ± 2.0	-1.1	72-hem/kin (×)
283.20	-91.0 ± 9.0	0.2	80-laz/bre (♦)	333.20	-60.0 ± 17.0	2.8	77-neo/kud (□)
288.15	-91.0 ± 3.0	-3.8	72-hem/kin (×)	348.20	-53.0 ± 17.0	5.5	77-neo/kud (□)
298.15	-81.0 ± 4.0	-1.0	72-hem/kin (×)				

Nitrogen [7727-37-9] N_2 MW = 28.01 388
Trichloroethene [79-01-6] C_2HCl_3 MW = 131.39

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-66.2 ± 6.6	94-kha/new	313.15	-10.1 ± 1.0	94-kha/new
303.15	-24.8 ± 2.5	94-kha/new	323.15	102.6 ± 10.0	94-kha/new

Nitrogen [7727-37-9] N_2 MW = 28.01 389
(E)-1,2-Dichloroethene [156-60-5] $C_2H_2Cl_2$ MW = 96.94

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-27.6 ± 6.0	94-kha/new	313.15	169.3 ± 18.0	94-kha/new
303.15	152.6 ± 16.0	94-kha/new	323.15	177.5 ± 18.0	94-kha/new

Nitrogen [7727-37-9] N_2 MW = 28.01 390
1,1,2,2-Tetrachloroethane [79-34-5] $C_2H_2Cl_4$ MW = 167.85

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-157.0 ± 12.0	87-bar/new	323.15	-60.0 ± 6.0	87-bar/new
308.15	-132.0 ± 10.0	87-bar/new			

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **391**
1,1,1-Trichloroethane **[71-55-6]** $C_2H_3Cl_3$ **MW = 133.40**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-172.0 ± 12.0	87-bar/new	323.15	-86.0 ± 8.0	87-bar/new
308.15	-104.0 ± 9.0	87-bar/new			

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **392**
1,1,2-Trichloroethane **[79-00-5]** $C_2H_3Cl_3$ **MW = 133.40**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-136.0 ± 11.0	87-bar/new	323.15	-51.0 ± 6.0	87-bar/new

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **393**
Ethene **[74-85-1]** C_2H_4 **MW = 28.05**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-51.3 ± 3.4	91-lop/roz	298.20	-54.7 ± 3.0	42-edw/ros

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **394**
1,1-Dichloroethane **[75-34-3]** $C_2H_4Cl_2$ **MW = 98.96**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-91.0 ± 7.0	87-bar/new	323.15	-51.0 ± 5.0	87-bar/new
308.15	-65.0 ± 6.0	87-bar/new			

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **395**
1,2-Dichloroethane **[107-06-2]** $C_2H_4Cl_2$ **MW = 98.96**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-135.0 ± 10.0	87-bar/new	323.15	-87.0 ± 8.0	87-bar/new
308.15	-103.0 ± 9.0	87-bar/new			

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **396**
Nitroethane **[79-24-3]** $C_2H_5NO_2$ **MW = 75.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-71 ± 10	71-vig/sem			

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **397**
Ethane **[74-84-0]** C_2H_6 **MW = 30.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
270.00	-58.3 ± 1.5	91-ach/mag	310.00	-40.5 ± 1.5	91-ach/mag
273.15	-55.6 ± 2.0	88-jae/aud	313.15	-38.9 ± 2.0	88-jae/aud
288.70	-58.1 ± 5.0	61-mas/eak	330.00	-33.3 ± 1.5	91-ach/mag
290.00	-48.3 ± 1.5	91-ach/mag	333.15	-31.9 ± 2.0	88-jae/aud
293.15	-46.8 ± 2.0	88-jae/aud	350.00	-27.1 ± 1.5	91-ach/mag
293.15	-46.6 ± 2.8	91-lop/roz			

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
270.00	0.250	-42.3 ± 0.3	91-ach/mag	310.00	0.752	-111.9 ± 0.8	91-ach/mag
270.00	0.500	-88.9 ± 0.4	91-ach/mag	330.00	0.250	-21.5 ± 0.3	91-ach/mag
270.00	0.752	-150.8 ± 0.8	91-ach/mag	330.00	0.500	-54.0 ± 0.4	91-ach/mag
290.00	0.250	-34.0 ± 0.3	91-ach/mag	330.00	0.752	-96.9 ± 0.8	91-ach/mag
290.00	0.500	-74.9 ± 0.4	91-ach/mag	350.00	0.250	-16.6 ± 0.3	91-ach/mag
290.00	0.752	-129.5 ± 0.8	91-ach/mag	350.00	0.500	-45.4 ± 0.4	91-ach/mag
310.00	0.250	-27.4 ± 0.3	91-ach/mag	350.00	0.752	-84.3 ± 0.8	91-ach/mag
310.00	0.500	-63.7 ± 0.4	91-ach/mag				

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
223.10	0.235	38.0 ± 3.0	89-did/zhd-1	298.10	0.678	19.0 ± 1.0	89-did/zhd-1
248.10	0.841	62.0 ± 1.2	89-did/zhd-1	298.10	0.493	15.6 ± 0.9	89-did/zhd-1
248.10	0.678	47.0 ± 5.4	89-did/zhd-1	298.10	0.235	9.3 ± 0.8	89-did/zhd-1
248.10	0.493	27.5 ± 1.4	89-did/zhd-1	310.00	0.250	2.4 ± 0.2	91-ach/mag
248.10	0.235	17.8 ± 0.9	89-did/zhd-1	310.00	0.500	4.1 ± 0.4	91-ach/mag
270.00	0.250	2.5 ± 0.2	91-ach/mag	310.00	0.752	6.8 ± 0.6	91-ach/mag
270.00	0.500	4.6 ± 0.4	91-ach/mag	330.00	0.250	2.3 ± 0.2	91-ach/mag
270.00	0.752	7.4 ± 0.6	91-ach/mag	330.00	0.500	3.9 ± 0.4	91-ach/mag
273.10	0.493	19.7 ± 0.9	89-did/zhd-1	330.00	0.752	6.2 ± 0.6	91-ach/mag
273.10	0.235	11.6 ± 0.6	89-did/zhd-1	348.10	0.841	-0.2 ± 0.4	89-did/zhd-1
290.00	0.250	2.4 ± 0.2	91-ach/mag	348.10	0.678	2.1 ± 0.4	89-did/zhd-1
290.00	0.500	4.4 ± 0.4	91-ach/mag	348.10	0.493	4.0 ± 0.1	89-did/zhd-1
290.00	0.752	7.2 ± 0.6	91-ach/mag	348.10	0.235	1.8 ± 0.0	89-did/zhd-1

cont.

Nitrogen + Ethane (cont.)

Table 5. (cont.)

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
350.00	0.250	2.3 ± 0.2	91-ach/mag	350.00	0.752	5.8 ± 0.6	91-ach/mag
350.00	0.500	3.6 ± 0.4	91-ach/mag				

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
270.00	2.2 ± 0.3	91-ach/mag	313.15	2.3 ± 0.3	88-jae/aud
273.15	2.2 ± 0.3	88-jae/aud	330.00	2.1 ± 0.3	91-ach/mag
290.00	2.1 ± 0.3	91-ach/mag	333.15	2.1 ± 0.3	88-jae/aud
293.15	2.3 ± 0.3	88-jae/aud	350.00	2.0 ± 0.3	91-ach/mag
310.00	2.1 ± 0.3	91-ach/mag			

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
270.00	5.7 ± 0.7	91-ach/mag	313.15	5.2 ± 0.2	88-jae/aud
273.15	5.2 ± 0.2	88-jae/aud	330.00	4.9 ± 0.7	91-ach/mag
290.00	5.5 ± 0.7	91-ach/mag	333.15	4.6 ± 0.2	88-jae/aud
293.15	5.4 ± 0.2	88-jae/aud	350.00	4.7 ± 0.7	91-ach/mag
310.00	5.2 ± 0.7	91-ach/mag			

Nitrogen [7727-37-9] N_2 MW = 28.01 398
Ethanol [64-17-5] C_2H_6O MW = 46.07

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	-94.0 ± 17.0	71-vig/sem	333.20	-70.0 ± 17.0	71-vig/sem
313.20	-64.5 ± 17.0	71-vig/sem	353.20	-10.0 ± 10.0	71-vig/sem
318.20	-83.5 ± 17.0	71-vig/sem			

Nitrogen [7727-37-9] N_2 MW = 28.01 399
Propene [115-07-1] C_3H_6 MW = 42.08

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-79.8 ± 4.2	91-lop/roz			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **400**
Propanone **[67-64-1]** **C_3H_6O** **MW = 58.08**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
223.05	-199.0 ± 12.0	81-hic/pra	261.80	-105.0 ± 15.0	93-sch/lan
233.15	-174.0 ± 19.0	81-hic/pra	273.00	-90.0 ± 15.0	93-sch/lan
251.80	-133.0 ± 15.0	93-sch/lan	283.15	-85.0 ± 7.0	81-hic/pra
258.15	-119.0 ± 7.0	81-hic/pra	308.15	-58.0 ± 7.0	81-hic/pra

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **401**
Propane **[74-98-6]** **C_3H_8** **MW = 44.10**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 4.3087 \cdot 10^2 - 4.0130 \cdot 10^5/(T/K) + 1.2091 \cdot 10^8/(T/K)^2 - 1.3638 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
250	-112.6 ± 10	350	-46.7 ± 6		
300	-68.4 ± 5	400	-29.8 ± 6		

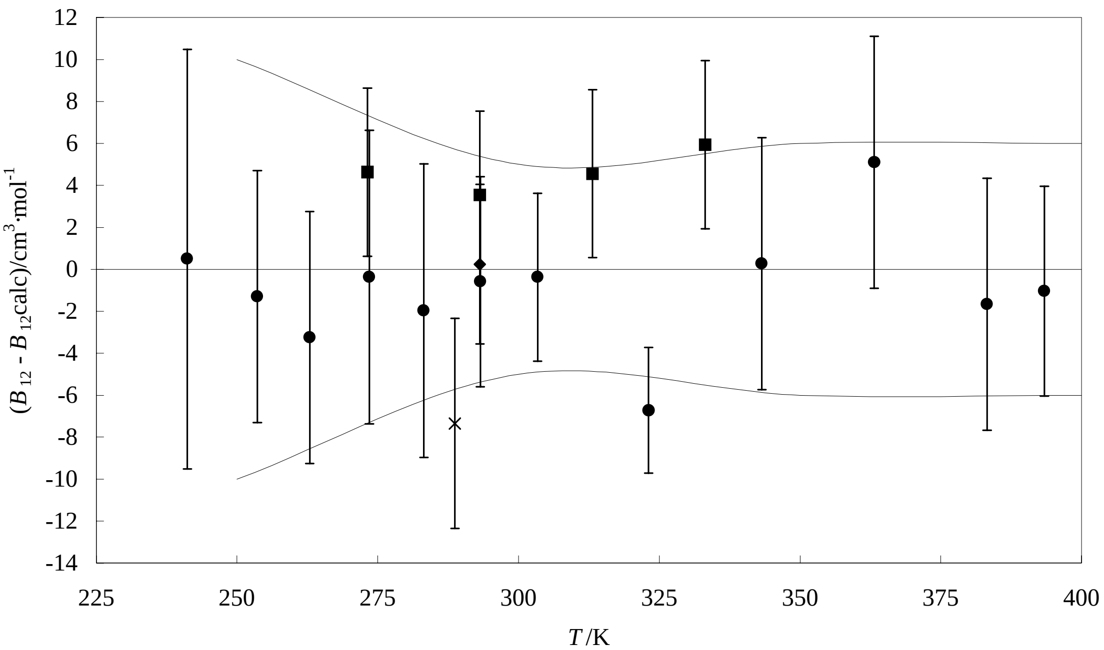

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Nitrogen + Propane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
241.20	-126.0 ± 10.0	0.5	96-wor/hut (●)	293.20	-73.0 ± 5.0	-0.6	96-wor/hut (●)
253.60	-109.0 ± 6.0	-1.3	96-wor/hut (●)	303.40	-67.0 ± 4.0	-0.4	96-wor/hut (●)
262.90	-100.0 ± 6.0	-3.3	96-wor/hut (●)	313.15	-57.2 ± 4.0	4.6	88-jae/aud (●)
273.15	-82.3 ± 4.0	4.6	88-jae/aud (■)	323.10	-64.0 ± 3.0	-6.7	96-wor/hut (●)
273.50	-87.0 ± 7.0	-0.4	96-wor/hut (●)	333.15	-47.2 ± 4.0	5.9	88-jae/aud (■)
283.20	-81.0 ± 7.0	-2.0	96-wor/hut (●)	343.20	-49.0 ± 6.0	0.3	96-wor/hut (●)
288.70	-82.6 ± 5.0	-7.3	61-mas/eak (×)	363.20	-37.0 ± 6.0	5.1	96-wor/hut (●)
293.15	-68.9 ± 4.0	3.5	88-jae/aud (■)	383.20	-37.0 ± 6.0	-1.7	96-wor/hut (●)
293.15	-72.2 ± 3.8	0.2	91-lop/roz (♦)	393.40	-33.0 ± 5.0	-1.0	96-wor/hut (●)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	212.6 ± 0.2	67-bre	298.20	0.500	137.6 ± 0.2	67-bre
273.20	0.500	167.8 ± 0.2	67-bre				

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.10	0.771	24.0 ± 7.0	89-did/zhd-1	348.10	0.451	29.0 ± 10.0	89-did/zhd-1
298.10	0.451	92.0 ± 13.0	89-did/zhd-1	348.10	0.647	18.0 ± 0.6	89-did/zhd-1
298.10	0.647	60.0 ± 6.0	89-did/zhd-1	348.10	0.771	81.0 ± 0.5	89-did/zhd-1
298.10	0.771	33.0 ± 3.0	89-did/zhd-1				

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	4.0 ± 0.4	88-jae/aud	313.15	3.3 ± 0.4	88-jae/aud
293.15	3.7 ± 0.4	88-jae/aud	333.15	2.9 ± 0.4	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	7.0 ± 1.4	88-jae/aud	313.15	9.6 ± 1.4	88-jae/aud
293.15	8.6 ± 1.4	88-jae/aud	333.15	9.8 ± 1.4	88-jae/aud

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **402**
1-Propanol **[71-23-8]** **C_3H_8O** **MW = 60.10**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	-110.0 ± 17.0	77-neo/kud	333.20	-84.5 ± 17.0	77-neo/kud
318.20	-98.5 ± 17.0	77-neo/kud	343.20	-80.5 ± 17.0	77-neo/kud

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **403**
Butanone **[78-93-3]** **C_4H_8O** **MW = 72.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-36 ± 10	71-vig/sem			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **404**
1,4-Dioxane **[123-91-1]** **$C_4H_8O_2$** **MW = 88.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-67 ± 10	71-vig/sem			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **405**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-110 ± 4	88-jae/aud	323.15	-69 ± 15	68-hic/you
283.40	-108 ± 11	96-wor/hut	323.20	-70 ± 7	96-wor/hut
288.70	-87 ± 5	61-mas/eak	333.15	-63 ± 3	88-jae/aud
293.15	-98 ± 4	88-jae/aud	333.20	-77 ± 12	68-you
293.20	-94 ± 8	96-wor/hut	343.50	-64 ± 6	96-wor/hut
303.15	-78 ± 15	68-hic/you	363.30	-53 ± 7	96-wor/hut
303.20	-88 ± 8	96-wor/hut	383.15	-42 ± 7	96-wor/hut
308.20	-84 ± 9	68-cru/gai	393.20	-40 ± 6	96-wor/hut
313.15	-82 ± 4	88-jae/aud			

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	5.7 ± 0.6	88-jae/aud	313.15	6.2 ± 0.6	88-jae/aud
293.15	6.4 ± 0.6	88-jae/aud	333.15	4.9 ± 0.6	88-jae/aud

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **406**
1-Butanol **[71-36-3]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-72.0 ± 10.0	73-mas/kin	333.20	-97.5 ± 17.0	77-neo/kud
303.20	-124.0 ± 17.0	77-neo/kud	343.20	-89.5 ± 17.0	77-neo/kud
318.20	-110.5 ± 17.0	77-neo/kud			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **407**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-67.0 ± 9.0	73-mas/kin			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **408**
Pyridine **[110-86-1]** **C_5H_5N** **MW = 79.10**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-42 ± 10	71-vig/sem			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **409**
(*Z*)-1,3-Pentadiene **[1574-41-0]** **C_5H_8** **MW = 68.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-105 ± 20	74-let/mar-1			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **410**
Cyclopentane **[287-92-3]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-91 ± 20	62-des/gol			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **411**
1-Pentene **[109-67-1]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-64 ± 9	68-cru/gai			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **412**
(*E*)-2-Pentene **[646-04-8]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-95 ± 20	74-let/mar-1			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **413**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-77.0 ± 7.0	73-mas/kin	333.15	-80.0 ± 15.0	68-hic/you
298.15	-90.0 ± 10.0	74-leu/eic	333.15	-75.5 ± 8.8	83-hou/wan
298.20	-105.0 ± 25.0	62-des/gol	333.20	-72.0 ± 10.0	68-you
298.20	-103.0 ± 6.0	66-cru/win	338.20	-78.0 ± 15.0	68-you
303.15	-85.0 ± 15.0	68-hic/you	343.15	-71.6 ± 8.6	83-hou/wan
308.15	-85.0 ± 13.0	68-cru/gai	353.15	-65.1 ± 8.2	83-hou/wan
308.15	-119.0 ± 20.0	74-let/mar-1	353.20	-60.0 ± 10.0	71-vig/sem
308.15	-76.0 ± 20.0	74-let/mar-1	363.15	-60.6 ± 8.0	83-hou/wan
313.20	-86.0 ± 6.0	70-gai/pec	373.15	-56.6 ± 7.8	83-hou/wan
328.20	-66.0 ± 15.0	68-you			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **414**
2-Methylbutane **[78-78-4]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-105 ± 25	62-des/gol	333.20	-76 ± 10	68-you
313.20	-92 ± 6	70-gai/pec	338.20	-81 ± 15	68-you
328.20	-64 ± 15	68-you			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **415**
2,2-Dimethylpropane **[463-82-1]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
199.62	-236 ± 24	75-bau/wes	229.53	-162 ± 16	75-bau/wes
199.62	-265 ± 27	75-bau/wes	239.48	-146 ± 15	75-bau/wes
199.62	-241 ± 24	75-bau/wes	239.48	-155 ± 15	75-bau/wes
209.59	-210 ± 21	75-bau/wes	239.48	-153 ± 15	75-bau/wes
209.59	-226 ± 23	75-bau/wes	249.47	-126 ± 13	75-bau/wes
209.59	-203 ± 20	75-bau/wes	249.47	-137 ± 14	75-bau/wes
219.56	-185 ± 19	75-bau/wes	249.47	-130 ± 13	75-bau/wes
219.56	-192 ± 19	75-bau/wes	257.86	-106 ± 11	75-bau/wes
219.56	-180 ± 18	75-bau/wes	257.86	-114 ± 11	75-bau/wes
229.53	-170 ± 17	75-bau/wes	257.86	-101 ± 10	75-bau/wes
229.53	-174 ± 17	75-bau/wes			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **416**
Hexafluorobenzene **[392-56-3]** **C_6F_6** **MW = 186.06**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-126 ± 6	74-leu/eic			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **417**
Chlorobenzene **[108-90-7]** **C_6H_5Cl** **MW = 112.56**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	202.6 ± 30.0	94-kha/new	313.15	142.1 ± 18.0	94-kha/new
303.15	175.4 ± 20.0	94-kha/new	323.15	-15.6 ± 5.0	94-kha/new

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **418**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.3070 \cdot 10^2 - 7.2389 \cdot 10^4/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
290	-118.9 ± 15	350	-76.1 ± 10	450	-30.2 ± 5
300	-110.6 ± 12	400	-50.3 ± 5		

cont.

Nitrogen + Benzene (cont.)

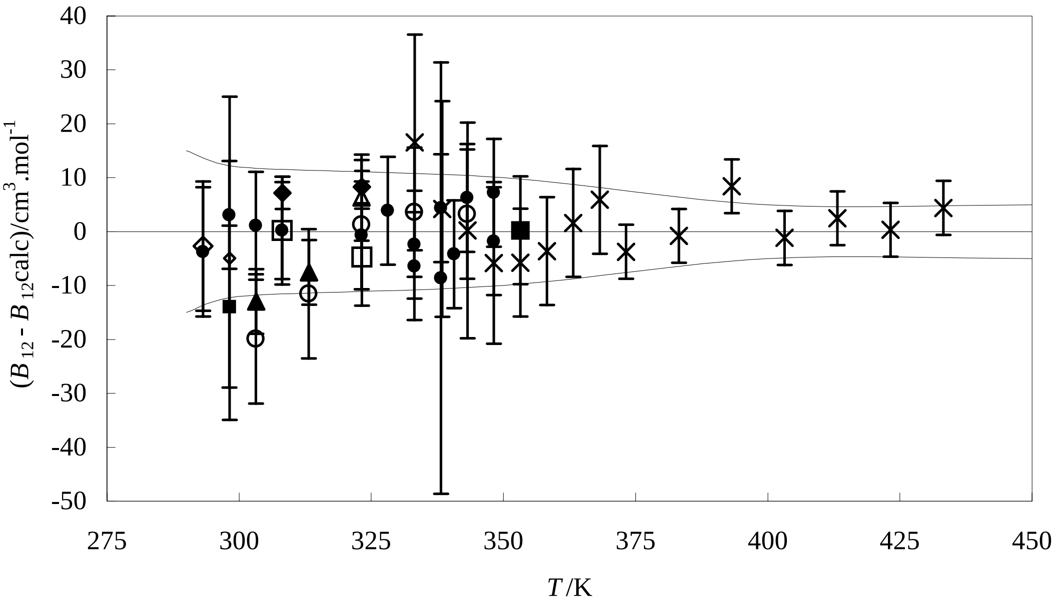

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
293.15	-120 ± 12	-3.8	68-gai/you-1 (●)	323.15	-94 ± 10	-0.7	68-gai/you-1(●)
293.15	-118.9 ± 12	-2.7	94-kha/new (◇)	323.15	-92 ± 12	1.3	73-kau/kud (○)
298.15	-109 ± 10	3.1	68-gai/you-1 (●)	323.15	114 ± 11	207.3	94-kha/new[1]
298.15	-126 ± 15	-13.9	74-leu/eic (■)	323.20	-98 ± 9	-4.7	68-cru/gai (□)
298.20	-117 ± 30	-4.9	62-des/gol (◇)	323.20	-85 ± 3	8.3	69-coa/kin (◆)
303.15	-107 ± 10	1.1	68-gai/you-1 (●)	328.15	-86 ± 10	3.9	68-gai/you-1(●)
303.15	-128 ± 12	-19.9	73-kau/kud (○)	333.15	-93 ± 10	-6.4	68-gai/you-1(●)
303.15	14.2 ± 2	122.3	94-kha/new[1]	333.15	-89 ± 10	-2.4	68-gai/you-1(●)
303.20	-121 ± 6	-13.0	66-cru/win (▲)	333.15	-83 ± 12	3.6	73-kau/kud (○)
308.15	-104 ± 9	0.2	68-cru/gai (□)	333.20	-70 ± 20	16.6	96-wor/lew (×)
308.15	-104 ± 10	0.2	68-gai/you-1 (●)	338.15	-92 ± 40	-8.6	68-gai/you-1(●)
308.20	-97 ± 3	7.2	69-coa/kin (◆)	338.15	-79 ± 10	4.4	68-gai/you-1(●)
313.15	-112 ± 12	-11.5	73-kau/kud (○)	338.40	-79 ± 20	4.2	96-wor/lew (×)
313.15	77 ± 8	177.5	94-kha/new[1]	340.65	-86 ± 10	-4.2	68-gai/you-1(●)
313.20	-108 ± 6	-7.6	66-cru/win (▲)	343.15	-74 ± 10	6.3	68-gai/you-1(●)
323.15	-87 ± 8	6.3	68-eve/gai (Δ)	343.15	-77 ± 12	3.3	73-kau/kud (○)

[1] Not included in Figure 1.

cont.

Nitrogen + Benzene (cont.)

Table 2. (cont.)

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
343.20	-80 ± 20	0.2	96-wor/lew (×)	368.20	-60 ± 10	5.9	96-wor/lew (×)
348.15	-70 ± 10	7.2	68-gai/you-1 (●)	373.20	-67 ± 5	-3.7	96-wor/lew (×)
348.15	-79 ± 10	-1.8	68-gai/you-1 (●)	383.20	-59 ± 5	-0.8	96-wor/lew (×)
348.20	-83 ± 15	-5.8	96-wor/lew (×)	393.20	-45 ± 5	8.4	96-wor/lew (×)
353.20	-74 ± 10	0.3	71-vig/sem (■)	403.20	-50 ± 5	-1.2	96-wor/lew (×)
353.20	-80 ± 10	-5.7	96-wor/lew (×)	413.20	-42 ± 5	2.5	96-wor/lew (×)
358.20	-75 ± 10	-3.6	96-wor/lew (×)	423.20	-40 ± 5	0.4	96-wor/lew (×)
363.20	-67 ± 10	1.6	96-wor/lew (×)	433.20	-32 ± 5	4.4	96-wor/lew (×)

Nitrogen [7727-37-9] N_2 MW = 28.01 419
(*Z*)-1,3,5-Hexatriene [2612-46-6] C_6H_8 MW = 80.13

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-122 ± 20	74-let/mar-1	308.15	-148 ± 20	74-let/mar-1
308.15	-132 ± 20	74-let/mar-1	323.15	-105 ± 20	74-let/mar-1
308.15	-119 ± 20	74-let/mar-1	323.15	-113 ± 20	74-let/mar-1

Nitrogen [7727-37-9] N_2 MW = 28.01 420
(*E*)-1,3-Hexadiene [20237-34-7] C_6H_{10} MW = 82.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-100 ± 20	74-let/mar-1	308.15	-114 ± 20	74-let/mar-1
308.15	-122 ± 20	74-let/mar-1	323.15	-96 ± 20	74-let/mar-1
308.15	-114 ± 20	74-let/mar-1	323.15	-109 ± 20	74-let/mar-1

Nitrogen [7727-37-9] N_2 MW = 28.01 421
(*E*)-1,4-Hexadiene [7319-00-8] C_6H_{10} MW = 82.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-114 ± 20	74-let/mar-1	308.15	-95 ± 20	74-let/mar-1

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **422**
1,5-Hexadiene **[592-42-7]** **C_6H_{10}** **MW = 82.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-107 ± 20	74-let/mar-1	323.15	-98 ± 20	74-let/mar-1
323.15	-91 ± 20	74-let/mar-1			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **423**
(*E*,*E*)-2,4-Hexadiene **[5194-51-4]** **C_6H_{10}** **MW = 82.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-134 ± 20	74-let/mar-1	308.15	-118 ± 20	74-let/mar-1
308.15	-113 ± 20	74-let/mar-1	308.15	-142 ± 20	74-let/mar-1

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **424**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -2.5418 \cdot 10^2 + 2.1825 \cdot 10^5/(T/K) - 5.4381 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-130.9 ± 20	400	-48.4 ± 10		
350	-74.5 ± 20	450	-37.7 ± 5		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.15	-130.0 ± 15.0	3.9	74-leu/eic (Δ)	353.20	-63.0 ± 10	9.2	71-vig/sem (■)
298.20	-120.0 ± 30.0	13.8	62-des/gol (○)	353.20	-77.0 ± 10	-4.8	96-wor/lew (×)
303.15	-142.0 ± 12.0	-16.0	73-kau/kud (●)	358.20	-61.0 ± 10	7.7	96-wor/lew (×)
308.15	-122.0 ± 13.0	-3.4	68-cru/gai (▲)	363.20	-75.0 ± 10	-9.5	96-wor/lew (×)
313.15	-98.0 ± 12.0	13.8	73-kau/kud (●)	368.20	-64.0 ± 10	-1.4	96-wor/lew (×)
313.20	-1.2 ± 6.0	110.5	74-leu/eic[1]	373.20	-64.0 ± 10	-4.2	96-wor/lew (×)
323.15	-110.0 ± 12.0	-10.4	73-kau/kud (●)	383.20	-55.0 ± 5	0.0	96-wor/lew (×)
333.15	-100.0 ± 12.0	-11.0	73-kau/kud (●)	393.20	-50.0 ± 5	0.9	96-wor/lew (×)
333.20	-80.0 ± 10.0	9.0	68-you (□)	403.20	-48.0 ± 5	-0.6	96-wor/lew (×)
333.20	-70.0 ± 20.0	19.0	96-wor/lew (×)	413.20	-49.0 ± 5	-4.5	96-wor/lew (×)
338.40	-68.0 ± 20.0	16.1	96-wor/lew (×)	423.20	-45.0 ± 5	-2.9	96-wor/lew (×)
343.20	-77.0 ± 20.0	2.9	96-wor/lew (×)	433.20	-35.0 ± 5	5.2	96-wor/lew (×)
348.20	-86.0 ± 15.0	-10.1	96-wor/lew (×)				

[1] Not included in Figure 1.

cont.

Nitrogen + Cyclohexane (cont.)

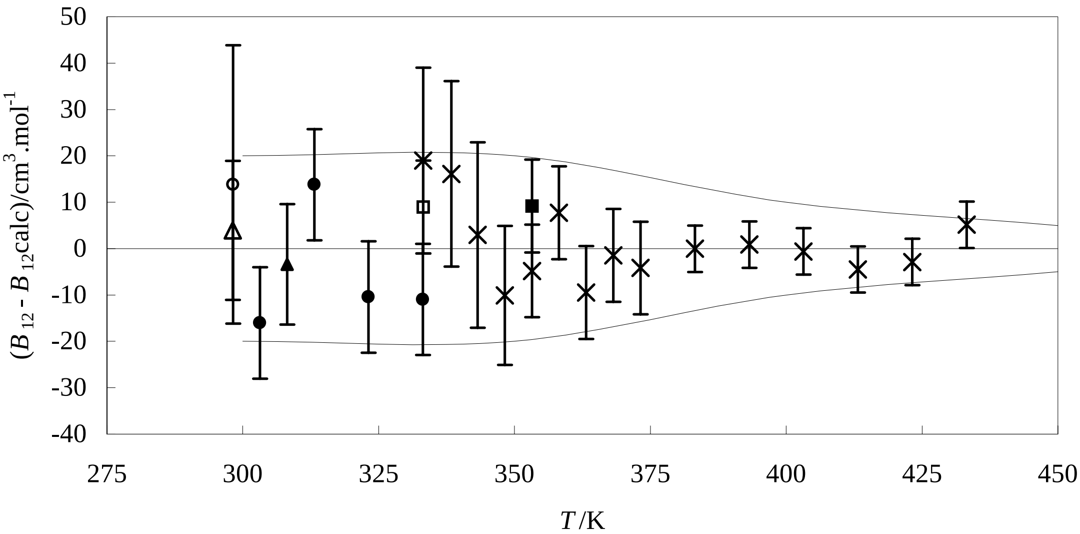

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **425**
Methylcyclopentane **[96-37-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{12} \pm \delta B_{12}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.	$\frac{T}{\text{K}}$	$\frac{B_{12} \pm \delta B_{12}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.
298.20	-128 ± 30	62-des/gol			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **426**
1-Hexene **[592-41-6]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{\text{K}}$	$\frac{B_{12} \pm \delta B_{12}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.	$\frac{T}{\text{K}}$	$\frac{B_{12} \pm \delta B_{12}}{\text{cm}^3 \cdot \text{mol}^{-1}}$	Ref.
308.15	-110 ± 9	68-cru/gai	323.15	-99 ± 20	74-let/mar-1
308.15	-122 ± 20	74-let/mar-1			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **427**
(*E*)-2-Hexene **[4050-45-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-127 ± 20	74-let/mar-1	308.15	-105 ± 20	74-let/mar-1

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **428**
(*E*)-3-Hexene **[13269-52-8]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-108 ± 20	74-let/mar-1	308.15	-120 ± 20	74-let/mar-1
308.15	-108 ± 20	74-let/mar-1	308.15	-121 ± 20	74-let/mar-1

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **429**
Butyl ethanoate **[123-86-4]** **$C_6H_{12}O_2$** **MW = 116.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-79 ± 10	71-vig/sem			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **430**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-118.0 ± 10.0	74-leu/eic	323.15	-96.0 ± 20.0	74-let/mar-1
298.20	-128.0 ± 30.0	62-des/gol	323.15	-95.0 ± 20.0	74-let/mar-1
298.20	-112.0 ± 6.0	66-cru/win	323.20	-79.0 ± 6.0	66-cru/win
303.15	-108.0 ± 20.0	68-hic/you	328.20	-90.0 ± 15.0	68-you
303.15	-132.0 ± 12.0	73-kau/kud	333.15	-93.0 ± 15.0	68-hic/you
303.20	-103.0 ± 6.0	66-cru/win	333.15	-94.0 ± 9.7	83-hou/wan
308.15	-113.0 ± 9.0	68-cru/gai	333.20	-98.0 ± 10.0	68-you
308.15	-115.0 ± 20.0	74-let/mar-1	338.20	-104.0 ± 15.0	68-you
308.15	-103.0 ± 20.0	74-let/mar-1	343.15	-87.1 ± 9.3	83-hou/wan
308.15	-121.0 ± 20.0	74-let/mar-1	353.15	-80.9 ± 9.0	83-hou/wan
313.15	-107.0 ± 15.0	68-hic/you	353.20	-69.0 ± 10.0	71-vig/sem
313.15	-103.0 ± 12.0	73-kau/kud	363.15	-75.4 ± 8.8	83-hou/wan
313.20	-110.0 ± 6.0	74-leu/eic	373.15	-70.4 ± 8.5	83-hou/wan
323.15	-57.0 ± 12.0	73-kau/kud			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **431**
2-Methylpentane **[107-83-5]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-127 ± 30	62-des/gol	313.20	-106 ± 6	74-leu/eic
308.15	-91 ± 9	68-cru/gai			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **432**
3-Methylpentane **[96-14-0]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-117 ± 30	62-des/gol	313.20	-96 ± 6	74-leu/eic

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **433**
2,2-Dimethylbutane **[75-83-2]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-105 ± 25	62-des/gol	313.20	-83 ± 6	74-leu/eic
308.15	-60 ± 20	68-cru/gai			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **434**
2,3-Dimethylbutane **[79-29-8]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-112 ± 30	62-des/gol	313.20	-99 ± 6	74-leu/eic

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **435**
Diisopropyl ether **[108-20-3]** **$C_6H_{14}O$** **MW = 102.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
223.15	-248 ± 22	81-hic/pra	273.15	-149 ± 22	81-hic/pra
248.15	-195 ± 16	81-hic/pra	323.15	-38 ± 22	81-hic/pra

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **436**
Toluene **[108-88-3]** **C_7H_8** **MW = 92.14**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = -1.7879\cdot10^2 + 1.2731\cdot10^5/(T/\text{K}) - 3.3317\cdot10^7/(T/\text{K})^2$$

T/K	$(B_{12}\pm2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12}\pm2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12}\pm2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
240	-226.8 ± 20	300	-124.7 ± 10		
250	-202.7 ± 10	350	-87.1 ± 10		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp}\pm\delta B$ /cm$^3\cdot$ mol^{-1}	$B_{exp}-B_{calc}$ /cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp}\pm\delta B$ /cm$^3\cdot$ mol^{-1}	$B_{exp}-B_{calc}$ /cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
241.20	-209 ± 20	14.6	93-sch/lan (♦)	323.15	-98.1 ± 6.2	5.8	59-pra/ben (×)
261.70	-184 ± 10	-5.2	93-sch/lan (♦)	348.15	-88.1 ± 7.5	-0.1	59-pra/ben (×)
282.60	-152 ± 10	-6.5	93-sch/lan (♦)	353.20	-94.0 ± 10.	-8.6	71-vig/sem (□)

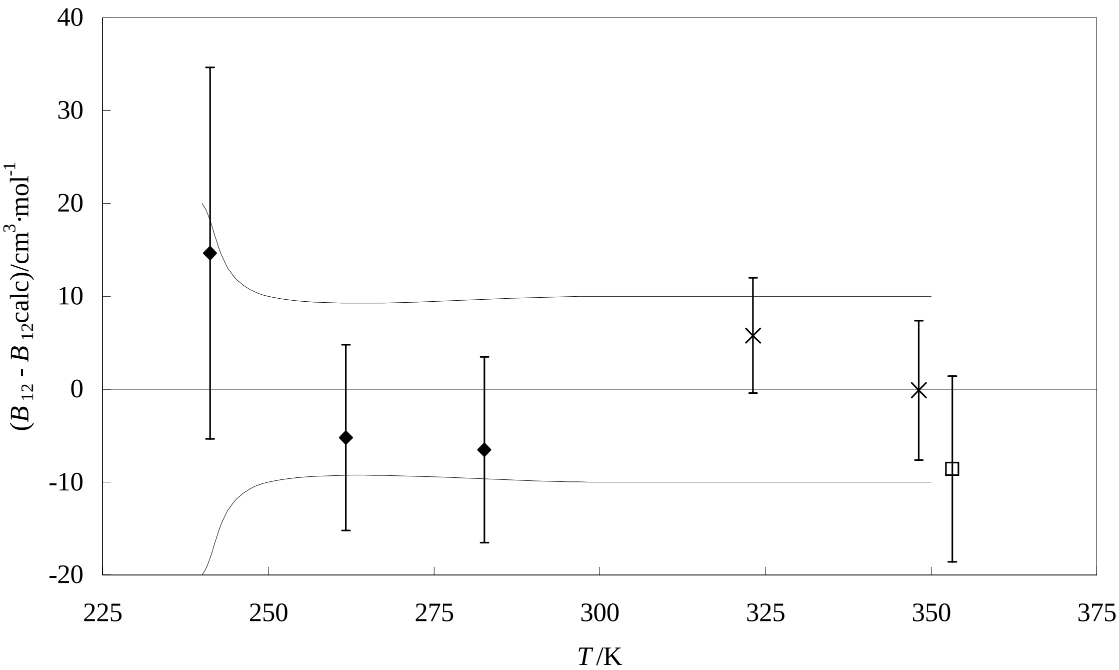

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **437**
1-Heptene **[592-76-7]** C_7H_{14} **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-142 ± 9	68-cru/gai	333.20	-95 ± 10	68-you

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **438**
Heptane **[142-82-5]** C_7H_{16} **MW = 100.20**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.6425 \cdot 10^3 - 1.5234 \cdot 10^6/(T/K) + 4.6319 \cdot 10^8/(T/K)^2 - 4.9785 \cdot 10^{10}/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
260	-197.4 ± 15	350	-90.1 ± 10		
300	-132.8 ± 15	400	-49.0 ± 10		

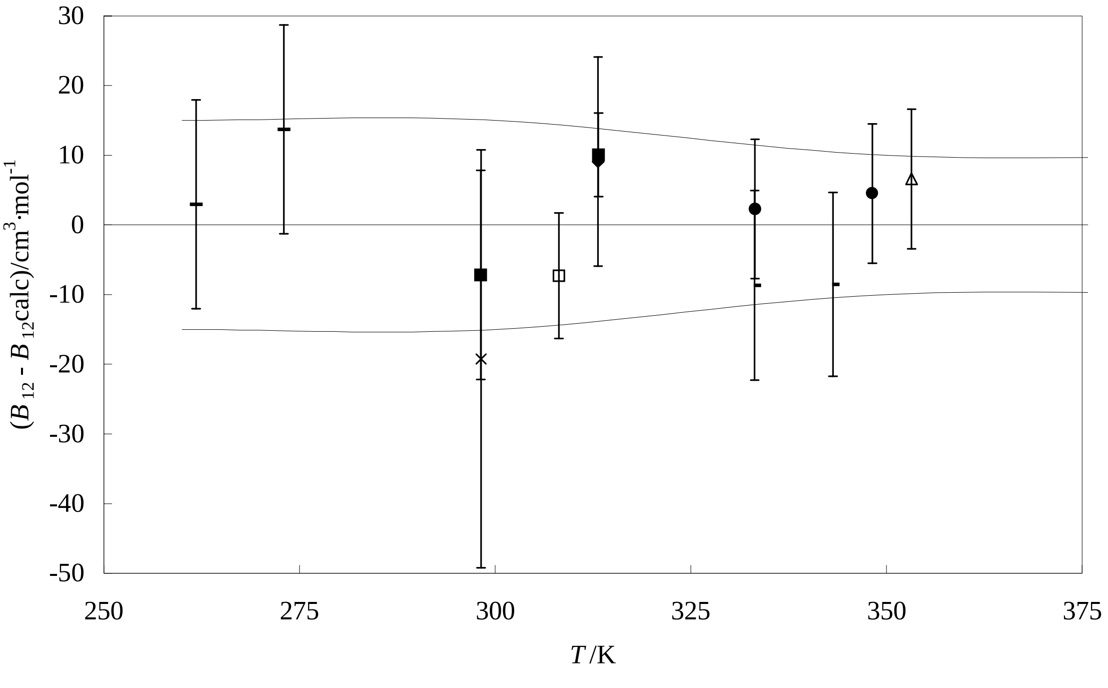

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Nitrogen + Heptane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
261.80	-190 ± 15.0	3.0	93-sch/lan (—)	333.20	-101 ± 10.0	2.3	68-you (●)
273.00	-156 ± 15.0	13.7	93-sch/lan (—)	343.15	-104 ± 13.2	-8.5	83-hou/wan (–)
298.15	-142 ± 15.0	-7.2	74-leu/eic (■)	348.20	-87 ± 10.0	4.5	68-you (●)
298.20	-154 ± 30.0	-19.2	62-des/gol (×)	353.15	-65.1 ± 9.0	22.5	83-hou/wan [1]
308.15	-132 ± 9.0	-7.3	68-cru/gai (□)	353.20	-81 ± 10.0	6.6	71-vig/sem (Δ)
313.15	-111 ± 15.0	9.1	68-hic/you (♦)	363.15	-60.6 ± 8.0	19.1	83-hou/wan [1]
313.20	-110 ± 6.0	10.0	74-leu/eic (■)	373.15	-56.6 ± 8.0	15.1	83-hou/wan [1]
333.15	-112 ± 13.6	-8.7	83-hou/wan (–)				

[1] Not included in Figure 1.

Nitrogen [7727-37-9] N_2 MW = 28.01 439
2-Methylhexane [591-76-4] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-135 ± 30	62-des/gol	313.20	-115 ± 6	70-gai/pec

Nitrogen [7727-37-9] N_2 MW = 28.01 440
3-Methylhexane [589-34-4] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-136 ± 30	62-des/gol	313.2	-105 ± 6	74-leu/eic

Nitrogen [7727-37-9] N_2 MW = 28.01 441
3-Ethylpentane [617-78-7] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-144 ± 30	62-des/gol			

Nitrogen [7727-37-9] N_2 MW = 28.01 442
2,2-Dimethylpentane [590-35-2] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-133 ± 30	62-des/gol	313.20	-177 ± 6	74-leu/eic

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **443**
2,3-Dimethylpentane **[565-59-3]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-133 ± 30	62-des/gol	313.20	-108 ± 6	74-leu/eic

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **444**
2,4-Dimethylpentane **[108-08-7]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-130 ± 30	62-des/gol	313.20	-115 ± 6	74-leu/eic
308.15	-109 ± 9	68-cru/gai			

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **445**
3,3-Dimethylpentane **[562-49-2]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-131 ± 30	62-des/gol	313.20	-117 ± 6	74-leu/eic

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **446**
2,2,3-Trimethylbutane **[464-06-2]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-123 ± 30	62-des/gol	313.20	-100 ± 6	74-leu/eic

Nitrogen **[7727-37-9]** **N_2** **MW = 28.01** **447**
Styrene **[100-42-5]** **C_8H_8** **MW = 104.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-117 ± 10	71-vig/sem			

Nitrogen [7727-37-9] N_2 MW = 28.01 **448**
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-146 ± 15	74-leu/eic	333.20	-119 ± 10	68-you
308.15	-143 ± 9	68-cru/gai	348.20	-92 ± 10	68-you
313.20	-134 ± 6	74-leu/eic	353.20	-98 ± 10	71-vig/sem

Nitrogen [7727-37-9] N_2 MW = 28.01 **449**
2,2-Dimethylhexane [590-73-8] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-150 ± 6	74-leu/eic			

Nitrogen [7727-37-9] N_2 MW = 28.01 **450**
2,2,4-Trimethylpentane [540-84-1] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-82.3 ± 5.7	59-pra/ben	353.20	-47.0 ± 10.0	71-vig/sem
348.15	-60.3 ± 6.5	59-pra/ben			

Nitrogen [7727-37-9] N_2 MW = 28.01 **451**
2,2,3,3-Tetramethylbutane [594-82-1] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-128 ± 6	74-leu/eic			

Nitrogen [7727-37-9] N_2 MW = 28.01 **452**
Nonane [111-84-2] C_9H_{20} MW = 128.26

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
261.60	-240 ± 20	93-sch/lan	298.15	-160 ± 15	74-leu/eic
273.10	-209 ± 20	93-sch/lan	353.20	-117 ± 10	71-vig/sem

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **453**
2,2,5-Trimethylhexane **[3522-94-9]** C_9H_{20} **MW = 128.26**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-115 ± 10	76-dav/kau	348.20	-73 ± 10	76-dav/kau
323.20	-93 ± 10	76-dav/kau	373.20	-52 ± 10	76-dav/kau

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **454**
Naphthalene **[91-20-3]** $C_{10}H_8$ **MW = 128.17**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
295.20	-176 ± 10	62-kin/rob	345.20	-113 ± 7	62-kin/rob

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **455**
(1,1-Dimethylethyl)benzene **[98-06-6]** $C_{10}H_{14}$ **MW = 134.22**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-111 ± 10	76-dav/kau	373.20	-70 ± 10	76-dav/kau
348.20	-83 ± 10	76-dav/kau	398.20	-49 ± 10	76-dav/kau

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **456**
Decane **[124-18-5]** $C_{10}H_{22}$ **MW = 142.28**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-141 ± 5	59-pra/ben	353.20	-130 ± 10	71-vig/sem
323.20	-148 ± 10	76-dav/kau	373.20	-82 ± 10	76-dav/kau
348.15	-112 ± 7	59-pra/ben	398.20	-74 ± 10	76-dav/kau
348.20	-111 ± 10	76-dav/kau			

Nitrogen **[7727-37-9]** N_2 **MW = 28.01** **457**
Dodecane **[112-40-3]** $C_{12}H_{26}$ **MW = 170.34**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.20	-134 ± 10	76-dav/kau	398.20	-74 ± 10	76-dav/kau
373.20	-104 ± 10	76-dav/kau	423.20	-53 ± 10	76-dav/kau

Nitrous oxide [10024-97-2] N_2O MW = 44.01 458
Methanol [67-56-1] CH_4O MW = 32.04

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.15	-253 ± 5	72-hem/kin	323.15	-176 ± 7	72-hem/kin
298.15	-231 ± 8	72-hem/kin	333.15	-161 ± 5	72-hem/kin
310.15	-194 ± 7	72-hem/kin			

Nitrous oxide [10024-97-2] N_2O MW = 44.01 459
Ethanol [64-17-5] C_2H_6O MW = 46.07

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-274 ± 5	73-gup/les	348.15	-177 ± 5	73-gup/les
323.15	-215 ± 5	73-gup/les			

Nitrous oxide [10024-97-2] N_2O MW = 44.01 460
Naphthalene [91-20-3] $C_{10}H_8$ MW = 128.17

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.00	-592 ± 8	68-kin-1	319.50	-466 ± 9	68-kin-1
298.00	-579 ± 8	68-kin-1	324.00	-443 ± 7	68-kin-1
299.00	-542 ± 10	68-kin-1	327.00	-442 ± 8	68-kin-1
300.00	-587 ± 8	68-kin-1	332.00	-426 ± 8	68-kin-1
308.00	-519 ± 8	68-kin-1	339.00	-414 ± 8	68-kin-1
309.50	-521 ± 12	68-kin-1	340.50	-405 ± 8	68-kin-1
316.00	-491 ± 13	68-kin-1			

Nitrous oxide [10024-97-2] N_2O MW = 44.01 461
Phenanthrene [85-01-8] $C_{14}H_{10}$ MW = 178.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
326.00	-668 ± 24	70-bra/kin	356.00	-547 ± 24	70-bra/kin
330.00	-643 ± 24	70-bra/kin	364.00	-504 ± 24	70-bra/kin
337.00	-652 ± 24	70-bra/kin	380.00	-455 ± 24	70-bra/kin
341.00	-606 ± 24	70-bra/kin	397.00	-398 ± 24	70-bra/kin
346.00	-564 ± 24	70-bra/kin	411.00	-345 ± 24	70-bra/kin
349.00	-567 ± 24	70-bra/kin			

Neon	**[7440-01-9]**	**Ne**	**MW = 20.18**	**462**
Oxygen	**[7782-44-7]**	**O_2**	**MW = 32.00**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 3.2788 \cdot 10 - 8.0888 \cdot 10^3/(T/\text{K}) + 2.9009 \cdot 10^5/(T/\text{K})^2 - 1.6447 \cdot 10^7/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
80	-55.1 ± 5	200	-2.4 ± 3	350	11.7 ± 2
100	-35.5 ± 5	250	4.0 ± 2	400	14.1 ± 2
150	-13.1 ± 4	300	8.5 ± 2	450	16.1 ± 2

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
77.70	-61.0 ± 4.0	-2.7	84-esl/rig (□)	120.00	-26.0 ± 3.0	-2.0	84-esl/rig (□)
89.40	-42.0 ± 4.0	2.4	84-esl/rig (□)	130.00	-24.0 ± 4.0	-4.2	84-esl/rig (□)
90.00	-40.2 ± 3.0	3.6	59-kno/bee (×)	296.15	9.4 ± 1.5	1.3	96-vat/sch (♦)
101.50	-33.0 ± 3.0	1.5	84-esl/rig (□)	353.15	12.2 ± 2.0	0.4	96-vat/sch (♦)
110.40	-28.0 ± 3.0	0.9	84-esl/rig (□)	463.15	15.4 ± 2.0	-1.1	96-vat/sch (♦)

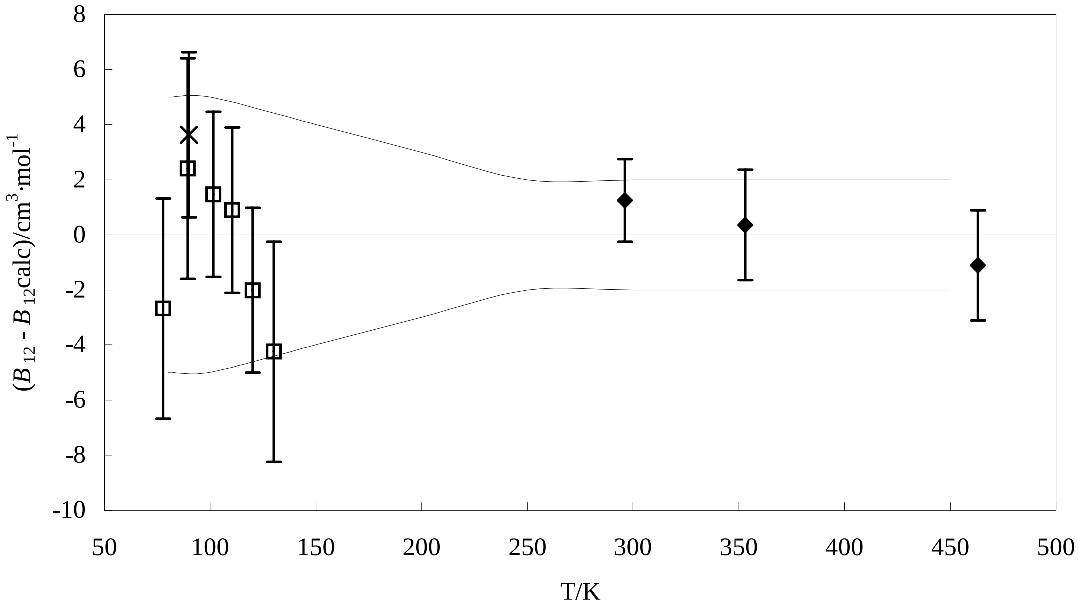

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Neon **[7440-01-9]** **Ne** **MW = 20.18** **463**
Xenon **[7440-63-3]** **Xe** **MW = 131.29**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 1.4791 · 10 + 4.7169 · 10^3/(T/K) – 1.1208 · 10^6/(T/K)^2 – 8.5658 · 10^7/(T/K)^3

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
160	-20.4 ± 5	300	14.9 ± 5	450	18.8 ± 5
200	-0.3 ± 5	350	17.1 ± 5	500	19.1 ± 5
250	10.2 ± 5	400	18.2 ± 5		

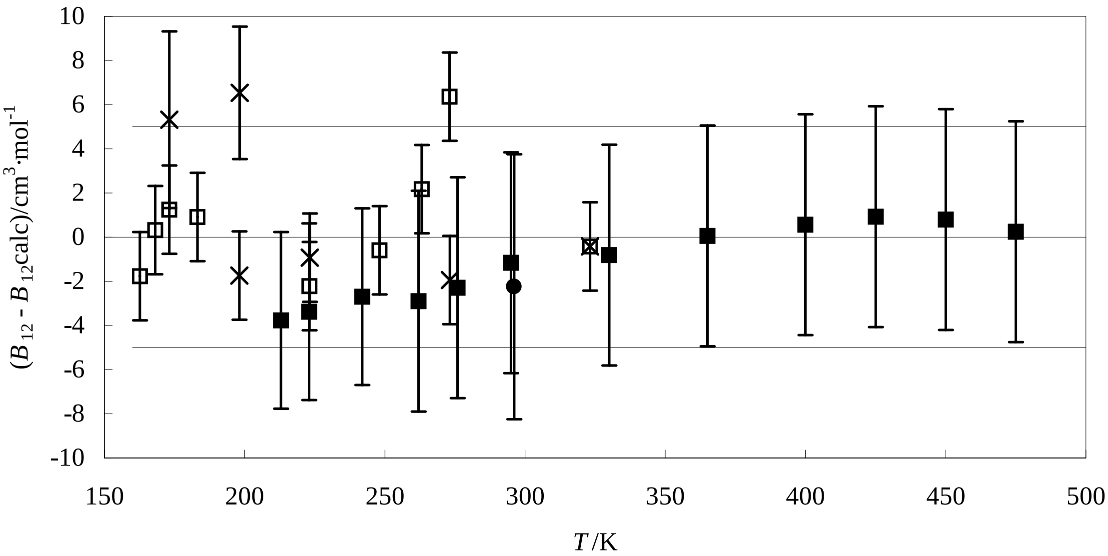

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp}-B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp}-B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
162.72	-20.2 ± 2.0	-1.8	80-dee/sch (□)	223.15	3.5 ± 2.0	-2.2	80-dee/sch (□)
168.15	-14.5 ± 2.0	0.3	80-dee/sch (□)	223.20	4.8 ± 2.0	-0.9	67-bre (×)
173.15	-10.6 ± 2.0	1.3	80-dee/sch (□)	242.00	6.4 ± 4.0	-2.7	80-sch/geh (■)
173.20	-6.5 ± 4.0	5.3	67-bre (×)	248.15	9.4 ± 2.0	-0.6	80-dee/sch (□)
183.15	-5.9 ± 2.0	0.9	80-dee/sch (□)	262.00	8.8 ± 5.0	-2.9	80-sch/geh (■)
198.15	-2.7 ± 2.0	-1.7	67-bre (×)	263.15	14.0 ± 2.0	2.2	80-dee/sch (□)
198.20	5.6 ± 3.0	6.5	67-bre (×)	273.15	19.2 ± 2.0	6.4	80-dee/sch (□)
213.00	-0.4 ± 4.0	-3.8	80-sch/geh (■)	273.20	10.9 ± 2.0	-1.9	67-bre (×)
223.00	2.3 ± 4.0	-3.4	80-sch/geh (■)	276.00	10.8 ± 5.0	-2.3	80-sch/geh (■)

cont.

Neon + Xenon (cont.)

Table 2. (cont.)

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
295.00	13.4 ± 5.0	-1.2	80-sch/geh (■)	365.00	17.6 ± 5.0	0.1	80-sch/geh (■)
296.15	12.4 ± 6.0	-2.2	82-sch/mue (●)	400.00	18.8 ± 5.0	0.6	80-sch/geh (■)
323.20	15.7 ± 2.0	-0.4	80-dee/sch (□)	425.00	19.5 ± 5.0	0.9	80-sch/geh (■)
323.20	15.7 ± 2.0	-0.4	67-bre (×)	450.00	19.6 ± 5.0	0.8	80-sch/geh (■)
330.00	15.6 ± 5.0	-0.8	80-sch/geh (■)	475.00	19.2 ± 5.0	0.2	80-sch/geh (■)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
173.20	0.500	174.3 ± 0.2	67-bre	273.20	0.500	82.5 ± 0.2	67-bre
198.20	0.500	138.6 ± 0.2	67-bre	323.20	0.500	65.2 ± 0.0	67-bre
223.20	0.500	113.6 ± 0.0	67-bre				

Neon [7440-01-9] **Ne** **MW = 20.18** **464**
Tetrafluoromethane [75-73-0] **CF_4** **MW = 88.00**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	12.4 ± 0.5	82-mar/tre	320.00	16.3 ± 0.6	82-mar/tre
300.00	14.1 ± 0.6	82-mar/tre			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	54.8 ± 0.2	82-mar/tre	320.00	0.500	46.8 ± 0.2	82-mar/tre
300.00	0.500	51.8 ± 0.2	82-mar/tre				

Neon [7440-01-9] **Ne** **MW = 20.18** **465**
Chlorodifluoromethane [75-45-6] **$CHClF_2$** **MW = 86.47**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	61.7 ± 6.0	67-bre	298.20	16.2 ± 4.0	67-bre
273.20	21.6 ± 5.0	67-bre			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	329.2 ± 0.2	67-bre	298.20	0.500	189.9 ± 0.2	67-bre
273.20	0.500	234.6 ± 0.2	67-bre				

Neon **[7440-01-9]** **Ne** **MW = 20.18** **466**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = 3.5364 \cdot 10 - 5.7379 \cdot 10^3/(T/\text{K}) - 1.4498 \cdot 10^5/(T/\text{K})^2 + 6.8207 \cdot 10^6/(T/\text{K})^3$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
120	-18.6 ± 2	200	3.9 ± 1	300	14.9 ± 1
150	-7.3 ± 1	250	10.5 ± 1	350	17.9 ± 1

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
123.20	-17.96 ± 2.0	-0.8	67-bre (♦)	273.20	12.42 ± 1.0	-0.3	67-bre (♦)
148.20	-7.82 ± 1.5	0.0	67-bre (♦)	290.00	14.50 ± 0.6	0.4	82-mar/tre (■)
173.20	-1.07 ± 1.0	0.2	67-bre (♦)	300.00	14.90 ± 0.6	0.0	82-mar/tre (■)
223.20	7.18 ± 1.0	-0.2	67-bre (♦)	320.00	16.10 ± 0.6	-0.1	82-mar/tre (■)

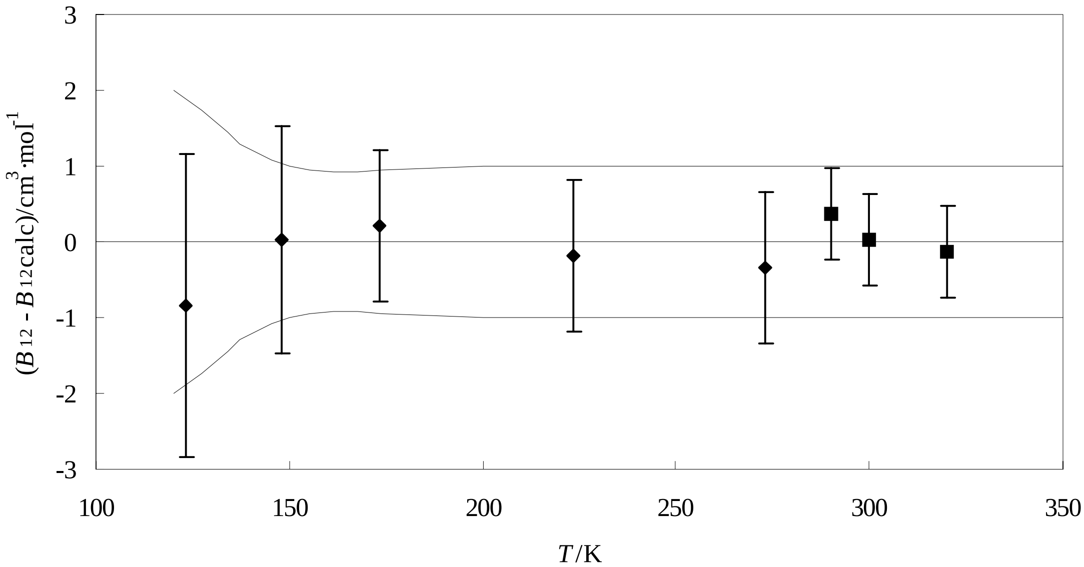

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / cm$^3\cdot$ mol^{-1}	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / cm$^3\cdot$ mol^{-1}	Ref.
123.20	0.500	114.30 ± 0.2	67-bre	173.20	0.500	65.05 ± 0.2	67-bre
148.20	0.500	82.93 ± 0.2	67-bre	223.20	0.500	44.40 ± 0.2	67-bre

cont.

Neon + Methane (cont.)

Table 4. (cont.)

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	0.500	33.62 ± 0.2	67-bre	300.00	0.500	30.20 ± 0.6	82-mar/tre
290.00	0.500	32.30 ± 0.6	82-mar/tre	320.00	0.500	27.80 ± 0.6	82-mar/tre

Neon [7440-01-9] Ne MW = 20.18 467
Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	17.7 ± 2.0	92-bel/big	310.00	20.3 ± 2.3	92-bel/big
300.00	22.5 ± 2.3	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	151.5 ± 1	92-bel/big	310.00	0.500	133.2 ± 1	92-bel/big
300.00	0.500	144.5 ± 1	92-bel/big				

Neon [7440-01-9] Ne MW = 20.18 468
1,1-Difluoroethane [75-37-6] $C_2H_4F_2$ MW = 66.05

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	15.3 ± 2.0	92-bel/big	310.00	20.7 ± 2.0	92-bel/big
300.00	19.5 ± 2.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	289.5 ± 1.0	92-bel/big	310.00	0.500	244.1 ± 1.0	92-bel/big
300.00	0.500	266.6 ± 1.0	92-bel/big				

Neon [7440-01-9] Ne MW = 20.18 469
Ethane [74-84-0] C_2H_6 MW = 30.07

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	13.9 ± 4.0	92-bel/big	310.00	17.6 ± 4.0	92-bel/big
300.00	15.9 ± 4.0	92-bel/big			

cont.

Neon + Ethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	106.2 ± 1.0	92-bel/big	310.00	0.500	96.3 ± 1.0	92-bel/big
300.00	0.500	101.8 ± 1.0	92-bel/big				

Neon [7440-01-9] Ne MW = 20.18 470
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	28.1 ± 1.0	67-bre	298.20	26.1 ± 1.0	67-bre
273.20	24.2 ± 1.0	67-bre			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
248.20	0.500	312.5 ± 0.2	67-bre	298.20	0.500	214.3 ± 0.2	67-bre
273.20	0.500	252.8 ± 0.2	67-bre				

Neon [7440-01-9] Ne MW = 20.18 471
Octafluorocyclobutane [115-25-3] C_4F_8 MW = 200.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	12.7 ± 5.0	92-bel/big	310.00	21.9 ± 5.0	92-bel/big
300.00	21.5 ± 5.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	429.1 ± 1.0	92-bel/big	310.00	0.500	369.0 ± 1.0	92-bel/big
300.00	0.500	400.3 ± 1.0	92-bel/big				

Oxygen [7782-44-7] O_2 MW = 32.00 472
Tetrafluoromethane [75-73-0] CF_4 MW = 88.00

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-38.5 ± 1.4	86-dun/big	320.00	-27.2 ± 1.4	86-dun/big
300.00	-34.5 ± 1.4	86-dun/big			

cont.

Oxygen + Tetrafluoromethane (cont.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	18.0 ± 0.4	86-dun/big	320.00	0.500	15.2 ± 0.4	86-dun/big
300.00	0.500	16.6 ± 0.4	86-dun/big				

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **473**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-25.7 ± 1.1	82-mar/tre	320.00	-18.1 ± 1.0	82-mar/tre
300.00	-22.7 ± 1.1	82-mar/tre			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	6.1 ± 0.2	82-mar/tre	310.00	0.500	5.4 ± 0.2	82-mar/tre
300.00	0.500	6.0 ± 0.2	82-mar/tre				

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **474**
Cyclopentane **[287-92-3]** **C_5H_{10}** **MW = 70.13**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-152 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **475**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-152 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **476**
2-Methylbutane **[78-78-4]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-125 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **477**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-157 ± 30	62-des/gol	323.15	-79 ± 8	68-eve/gai
298.20	-104 ± 6	67-bra/kin			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **478**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-163 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **479**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-163 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **480**
2-Methylpentane **[107-83-5]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-155 ± 30	62-des/gol			

Oxygen [7782-44-7] O_2 MW = 32.00 481
3-Methylpentane [96-14-0] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-163 ± 30	62-des/gol			

Oxygen [7782-44-7] O_2 MW = 32.00 482
2,2-Dimethylbutane [75-83-2] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-145 ± 30	62-des/gol			

Oxygen [7782-44-7] O_2 MW = 32.00 483
2,3-Dimethylbutane [79-29-8] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-153 ± 30	62-des/gol			

Oxygen [7782-44-7] O_2 MW = 32.00 484
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-183 ± 30	62-des/gol			

Oxygen [7782-44-7] O_2 MW = 32.00 485
2-Methylhexane [591-76-4] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-175 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **486**
3-Methylhexane **[589-34-4]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-180 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **487**
3-Ethylpentane **[617-78-7]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-176 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **488**
2,3-Dimethylpentane **[565-59-3]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-167 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **489**
2,4-Dimethylpentane **[108-08-7]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-166 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **490**
3,3-Dimethylpentane **[562-49-2]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-165 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **491**
2,2,3-Trimethylbutane **[464-06-2]** **C_7H_{16}** **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-160 ± 30	62-des/gol			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **492**
Naphthalene **[91-20-3]** **$C_{10}H_8$** **MW = 128.17**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
297.20	-170 ± 12	67-bra/kin			

Oxygen **[7782-44-7]** **O_2** **MW = 32.00** **493**
Anthracene **[120-12-7]** **$C_{14}H_{10}$** **MW = 178.23**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.20	-186 ± 6	67-bra/kin			

Sulfur dioxide **[7446-09-5]** **O_2S** **MW = 64.06** **494**
Dimethyl ether **[115-10-6]** **C_2H_6O** **MW = 46.07**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-1085 ± 43	70-osi/str	348.15	-411 ± 97	70-osi/str
323.15	-648 ± 56	70-osi/str	373.15	-230 ± 39	70-osi/str

Sulfur dioxide **[7446-09-5]** **O_2S** **MW = 64.06** **495**
Methoxyethane **[540-67-0]** **C_3H_8O** **MW = 60.10**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-1381 ± 11	70-osi/str	348.15	-787 ± 81	70-osi/str
323.15	-1179 ± 87	70-osi/str	373.15	-538 ± 63	70-osi/str

Sulfur dioxide **[7446-09-5]** **O_2S** **MW = 64.06** **496**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-1283 ± 50	65-str/kre	348.15	-702 ± 50	65-str/kre
323.25	-907 ± 50	65-str/kre	368.15	-471 ± 50	65-str/kre

Sulfur dioxide **[7446-09-5]** **O_2S** **MW = 64.06** **497**
Butyl methyl ether **[628-28-4]** **$C_5H_{12}O$** **MW = 88.15**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-890 ± 102	70-osi/str	373.15	-552 ± 38	70-osi/str
348.15	-744 ± 10	70-osi/str			

Sulfur dioxide **[7446-09-5]** **O_2S** **MW = 64.06** **498**
Methyl pentyl ether **[628-80-8]** **$C_6H_{14}O$** **MW = 102.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-452 ± 46	70-osi/str	373.15	-119 ± 27	70-osi/str

Xenon **[7440-63-3]** **Xe** **MW = 131.29** **499**
Tetrafluoromethane **[75-73-0]** **CF_4** **MW = 88.00**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-93.1 ± 2.3	86-dun/big	320.00	-72.1 ± 1.7	86-dun/big
300.00	-86.8 ± 2.1	86-dun/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	23.7 ± 0.4	86-dun/big	320.00	0.500	20.7 ± 0.4	86-dun/big
300.00	0.500	22.5 ± 0.4	86-dun/big				

Xenon **[7440-63-3]** **Xe** **MW = 131.29** **500**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
173.20	-219.8	±	3.5	67-bre	273.20	-90.7	±	1.0	67-bre
223.20	-136.0	±	2.0	67-bre					

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.
173.20	0.500	33.7	±	0.2	67-bre	273.20	0.500	13.1	±	0.2	67-bre
223.20	0.500	19.2	±	0.2	67-bre						

Xenon **[7440-63-3]** **Xe** **MW = 131.29** **501**
Hexafluoroethane **[76-16-4]** **C_2F_6** **MW = 138.01**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
290.00	-159.9	±	20.0	92-bel/big	310.00	-134.6	±	15.0	92-bel/big
300.00	-146.3	±	20.0	92-bel/big					

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.
290.00	0.500	50.4	±	1.0	92-bel/big	310.00	0.500	45.6	±	1.0	92-bel/big
300.00	0.500	47.8	±	1.0	92-bel/big						

Xenon **[7440-63-3]** **Xe** **MW = 131.29** **502**
Ethene **[74-85-1]** **C_2H_4** **MW = 28.05**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
205.79	-263.9	±	3.0	96-agu/nun	243.08	-195.9	±	3.0	96-agu/nun
213.08	-249.8	±	3.0	96-agu/nun	283.03	-180.9	±	3.0	96-agu/nun
223.43	-227.6	±	3.0	96-agu/nun	262.80	-168.7	±	3.0	96-agu/nun
233.19	-211.5	±	3.0	96-agu/nun	262.91	-168.6	±	3.0	96-agu/nun
243.02	-196.6	±	3.0	96-agu/nun	272.79	-157.4	±	3.0	96-agu/nun

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.
205.80	0.500	15.8	±	0.5	96-agu/nun-1	223.40	0.500	11.8	±	0.5	96-agu/nun-1
213.10	0.500	12.1	±	0.5	96-agu/nun-1	233.20	0.500	9.2	±	0.5	96-agu/nun-1

cont.

Xenon + Ethene (cont.)

Table 4. (cont.)

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
243.00	0.500	7.3 ± 0.5	96-agu/nun-1	262.80	0.500	6.5 ± 0.5	96-agu/nun-1
243.10	0.500	7.9 ± 0.5	96-agu/nun-1	262.90	0.500	6.4 ± 0.5	96-agu/nun-1
253.00	0.500	7.6 ± 0.5	96-agu/nun-1	272.80	0.500	6.4 ± 0.5	96-agu/nun-1

Xenon **[7440-63-3]** **Xe** **MW = 131.29** **503**
1,1-Difluoroethane **[75-37-6]** **$C_2H_4F_2$** **MW = 66.05**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-187.0 ± 10	92-bel/big	310.00	-160.6 ± 9	92-bel/big
300.00	-171.4 ± 10	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	163.8 ± 1.0	92-bel/big	310.00	0.500	130.2 ± 1.0	92-bel/big
300.00	0.500	147.9 ± 1.0	92-bel/big				

Xenon **[7440-63-3]** **Xe** **MW = 131.29** **504**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 5.1827 \cdot 10^2 - 3.8414 \cdot 10^5/(T/K) + 7.8606 \cdot 10^7/(T/K)^2 - 7.1487 \cdot 10^9/(T/K)^3$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
210	-300.4 ± 10	250	-218.1 ± 10	300	-153.6 ± 15

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
206.61	-310.0 ± 5.0	0.1	96-agu/nun (♦)	253.18	-213.1 ± 3.0	0.1	96-agu/nun (♦)
215.60	-286.0 ± 4.0	-0.3	96-agu/nun (♦)	265.05	-195.9 ± 3.0	0.1	96-agu/nun (♦)
224.85	-263.0 ± 4.0	1.2	96-agu/nun (♦)	273.32	-184.8 ± 3.0	0.3	96-agu/nun (♦)
233.02	-248.7 ± 4.0	-1.1	96-agu/nun (♦)	290.00	-166.5 ± 18.0	-1.7	92-bel/big (■)
243.13	-228.9 ± 3.0	0.4	96-agu/nun (♦)	300.00	-154.0 ± 18.0	-0.4	92-bel/big (■)
253.08	-213.8 ± 3.0	-0.5	96-agu/nun (♦)	310.00	-141.2 ± 16.0	1.7	92-bel/big (■)

cont.

Xenon + Ethane (cont.)

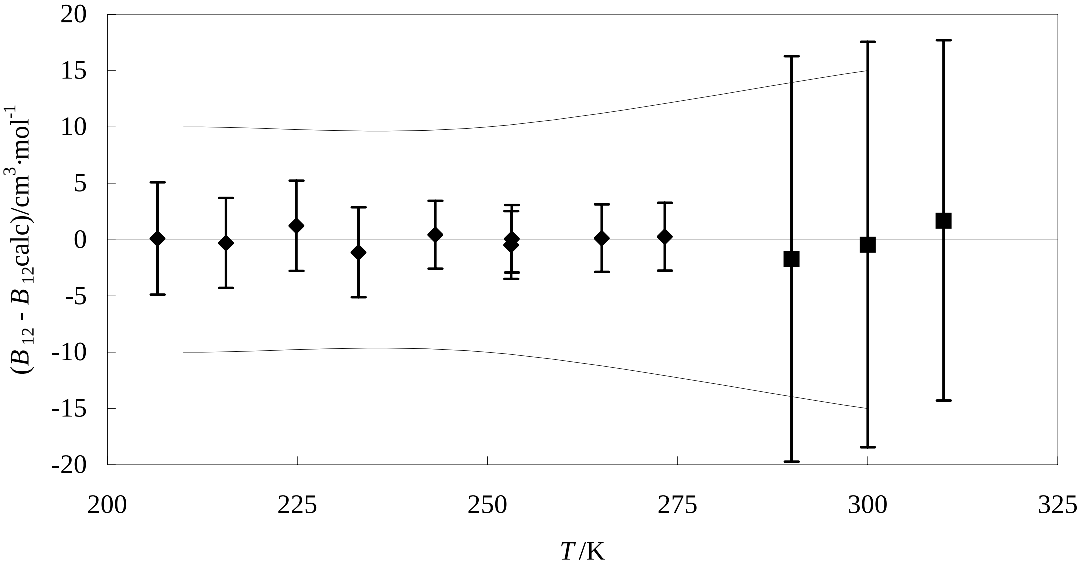

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
272.71	0.500	-187.9 ± 5	94-dua/gue	297.19	0.500	-165.5 ± 5	94-dua/gue
284.30	0.500	-176.6 ± 5	94-dua/gue	298.76	0.480	-163.3 ± 5	94-dua/gue
292.73	0.500	-169.9 ± 5	94-dua/gue	301.54	0.480	-158.3 ± 5	94-dua/gue

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
206.61	0.500	11.9 ± 0.5	96-agu/nun	253.18	0.500	4.9 ± 0.5	96-agu/nun
215.60	0.500	10.0 ± 0.5	96-agu/nun	265.05	0.500	3.9 ± 0.5	96-agu/nun
224.85	0.500	9.6 ± 0.5	96-agu/nun	273.15	0.500	3.4 ± 0.5	96-agu/nun
233.02	0.500	6.4 ± 0.5	96-agu/nun	290.00	0.500	2.4 ± 1.0	92-bel/big
243.13	0.500	6.5 ± 0.5	96-agu/nun	300.00	0.500	2.9 ± 1.0	92-bel/big
253.15	0.500	4.5 ± 0.5	96-agu/nun	310.00	0.500	4.9 ± 1.0	92-bel/big

Xenon **[7440-63-3]** **Xe** **MW = 131.29** **505**
Octafluorocyclobutane **[115-25-3]** **C_4F_8** **MW = 200.03**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-289.2 ± 26.0	92-bel/big	310.00	-245.3 ± 25.0	92-bel/big
300.00	-263.7 ± 26.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	203.7 ± 1.0	92-bel/big	310.00	0.500	169.3 ± 1.0	92-bel/big
300.00	0.500	187.3 ± 1.0	92-bel/big				

3 Virial Coefficients of Mixtures of Two Organic Compounds

Chlorotrifluoromethane [75-72-9] $CClF_3$ MW = 104.46 506
Trichlorofluoromethane [75-69-4] CCl_3F MW = 137.37

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
302.20	-448.4 ± 18.0	76-bou/jad	302.20	-427.5 ± 17.0	76-bou/jad

Chlorotrifluoromethane [75-72-9] $CClF_3$ MW = 104.46 507
Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
300.70	-275.3 ± 10.0	76-bou/jad	300.70	-265.9 ± 10.0	76-bou/jad

Chlorotrifluoromethane [75-72-9] $CClF_3$ MW = 104.46 508
Trifluoromethane [75-46-7] CHF_3 MW = 70.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
300.30	-163.0 ± 7.0	76-bou/jad	300.31	-170.4 ± 7.0	76-bou/jad

Dichlorodifluoromethane [75-71-8] CCl_2F_2 MW = 120.91 509
Trichlorofluoromethane [75-69-4] CCl_3F MW = 137.37

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
302.20	-446.4 ± 18.0	76-bou/jad	302.20	-432.2 ± 17.0	76-bou/jad

Dichlorodifluoromethane [75-71-8] CCl_2F_2 MW = 120.91 510
Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
233.00	-605 ± 25	89-nat/sch	253.00	-499 ± 20	89-nat/sch
243.00	-546 ± 20	89-nat/sch	263.00	-454 ± 15	89-nat/sch

cont.

Dichlorodifluoromethane + Chlorodifluoromethane (cont.)

Table 2. (cont.)

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
273.00	-417	±	15	89-nat/sch	300.50	-362	±	15	76-bou/jad
296.15	-347	±	12	92-sch/hau	353.15	-230	±	17	92-sch/hau
296.20	-350	±	12	89-nat/sch	413.15	-158	±	18	92-sch/hau
300.50	-379	±	15	76-bou/jad	473.15	-112	±	19	92-sch/hau
300.50	-371	±	15	76-bou/jad					

Dichlorodifluoromethane [75-71-8] CCl_2F_2 MW = 120.91 511
Trifluoromethane [75-46-7] CHF_3 MW = 70.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
300.50	-297.7	±	10.0	76-bou/jad	300.50	-293.8	±	12.0	76-bou/jad
300.50	-300.7	±	12.0	76-bou/jad					

Dichlorodifluoromethane [75-71-8] CCl_2F_2 MW = 120.91 512
1,1-Difluoroethane [75-37-6] $C_2H_4F_2$ MW = 66.05

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
298.15	0.394	-365.5	±	3.0	78-pra/kud	373.15	0.394	-237.5	±	3.0	78-pra/kud
313.15	0.394	-334.1	±	3.0	78-pra/kud	393.15	0.394	-212.1	±	3.0	78-pra/kud
333.15	0.394	-299.3	±	3.0	78-pra/kud	413.15	0.394	-190.0	±	3.0	78-pra/kud
353.15	0.394	-267.5	±	3.0	78-pra/kud						

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
298.15	0.394	-544.5	±	0.1	78-pra/kud	373.15	0.394	-160.0	±	0.1	78-pra/kud
313.15	0.394	-457.5	±	0.1	78-pra/kud	393.15	0.394	-82.1	±	0.1	78-pra/kud
333.15	0.394	-352.5	±	0.1	78-pra/kud	413.15	0.394	-25.0	±	0.1	78-pra/kud
353.15	0.394	-250.1	±	0.1	78-pra/kud						

Trichlorofluoromethane [75-69-4] CCl_3F MW = 137.37 513
Trifluoromethane [75-46-7] CHF_3 MW = 70.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
302.20	-247.6	±	10.0	76-bou/jad	302.20	-239.0	±	10.0	76-bou/jad

Tetrachloromethane [56-23-5] CCl_4 MW = 153.82 514
Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
309.50	0.503	-1310 ± 50	55-fra/mcg	323.20	0.503	-1155 ± 50	55-fra/mcg
315.70	0.493	-1180 ± 50	55-fra/mcg	333.70	0.236	-1180 ± 50	55-fra/mcg
315.70	0.503	-1224 ± 50	55-fra/mcg	333.70	0.503	-1080 ± 50	55-fra/mcg
323.20	0.236	-1265 ± 50	55-fra/mcg	337.20	0.247	-1115 ± 50	55-fra/mcg
323.20	0.493	-1155 ± 50	55-fra/mcg	343.20	0.493	-995 ± 50	55-fra/mcg

Tetrachloromethane [56-23-5] CCl_4 MW = 153.82 515
Methane [74-82-8] CH_4 MW = 16.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	-252 ± 8	72-gup/kin	323.20	-174 ± 3	72-gup/kin
298.20	-205 ± 4	72-gup/kin	348.20	-129 ± 5	72-gup/kin

Tetrachloromethane [56-23-5] CCl_4 MW = 153.82 516
Ethene [74-85-1] C_2H_4 MW = 28.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.20	-457 ± 10	72-gup/kin	323.20	-299 ± 5	72-gup/kin
298.20	-384 ± 7	72-gup/kin	348.20	-248 ± 3	72-gup/kin

Tetrachloromethane [56-23-5] CCl_4 MW = 153.82 517
1-Propanol [71-23-8] C_3H_8O MW = 60.09

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.15	-1600 ± 160	66-mar/sok	313.15	-1350 ± 140	66-mar/sok
303.15	-1500 ± 150	66-mar/sok			

Tetrachloromethane [56-23-5] CCl_4 MW = 153.82 **518**
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-1014 ± 30	98-par/rie	373.20	-898 ± 30	98-par/rie
363.20	-939 ± 10	68-rae/ras	383.20	-848 ± 30	98-par/rie
363.20	-940 ± 8	68-rae/ras	403.20	-759 ± 30	98-par/rie
363.20	-953 ± 30	98-par/rie	423.20	-684 ± 30	98-par/rie

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
315.70	0.499	-1145 ± 200	55-fra/mcg	343.20	0.500	-950 ± 200	55-fra/mcg
323.20	0.499	-1120 ± 200	55-fra/mcg	349.30	0.506	-945 ± 200	55-fra/mcg
333.70	0.499	-1030 ± 200	55-fra/mcg				

Tetrachloromethane [56-23-5] CCl_4 MW = 153.82 **519**
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-1047 ± 30	98-par/rie	383.20	-876 ± 30	98-par/rie
363.20	-984 ± 30	68-rae/ras	403.20	-784 ± 30	98-par/rie
373.20	-928 ± 30	98-par/rie	423.20	-715 ± 30	98-par/rie

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 **520**
Trifluoromethane [75-46-7] CHF_3 MW = 70.01

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
243.15	-159.3 ± 1.8	70-lan/ste	313.15	-85.3 ± 1.4	70-lan/ste
273.15	-122.7 ± 1.4	70-lan/ste	368.15	-51.1 ± 1.0	70-lan/ste

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
243.15	7.20 ± 0.5	70-lan/ste	313.15	4.95 ± 0.2	70-lan/ste
273.15	6.40 ± 0.2	70-lan/ste	368.15	4.70 ± 0.5	70-lan/ste

cont.

Tetrafluoromethane + Trifluoromethane (cont.)

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
243.15	11.80 ± 0.6	70-lan/ste	313.15	7.10 ± 0.2	70-lan/ste
273.15	10.25 ± 0.3	70-lan/ste	368.15	4.20 ± 0.3	70-lan/ste

Tetrafluoromethane **[75-73-0]** **CF_4** **MW = 88.00** **521**
Methane **[74-82-8]** **CH_4** **MW = 16.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 8.6407 \cdot 10 - 5.9805 \cdot 10^4/(T/K) + 1.8721 \cdot 10^7/(T/K)^2 - 5.6828 \cdot 10^9/(T/K)^3 + 5.4603 \cdot 10^{11}/(T/K)^4$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
275	-61.3 ± 2	450	-3.1 ± 1	600	16.6 ± 1
350	-27.8 ± 2	500	5.0 ± 1	650	21.1 ± 1
400	-13.6 ± 1	550	11.4 ± 1		

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
273.15	-62.1 ± 0.7	0.3	67-dou/har (×)	373.15	-22.0 ± 2.0	-1.4	71-dan/kno (Δ)
290.00	-52.4 ± 1.5	0.6	82-mar/tre (■)	398.15	-14.0 ± 0.7	0.0	67-dou/har (×)
296.15	-52.5 ± 5.0	-2.6	82-sch/mue (♦)	423.15	-8.3 ± 0.7	0.0	67-dou/har (×)
298.15	-48.5 ± 0.7	0.4	67-dou/har (×)	448.15	-3.2 ± 0.7	0.2	67-dou/har (×)
298.15	-52.0 ± 2.0	-3.1	71-dan/kno (Δ)	473.15	1.0 ± 0.7	0.1	67-dou/har (×)
300.00	-47.5 ± 1.4	0.5	82-mar/tre (■)	498.15	4.9 ± 0.7	0.2	67-dou/har (×)
303.15	-46.1 ± 0.7	0.4	67-dou/har(×)	523.15	8.3 ± 0.7	0.2	67-dou/har (×)
320.00	-37.6 ± 1.3	1.4	82-mar/tre (■)	548.15	11.4 ± 0.7	0.2	67-dou/har (×)
323.15	-37.4 ± 0.7	0.3	67-dou/har (×)	573.15	14.1 ± 0.7	0.2	67-dou/har (×)
323.15	-39.0 ± 2.0	-1.3	71-dan/kno (Δ)	598.15	16.6 ± 0.7	0.1	67-dou/har (×)
348.15	-28.3 ± 0.7	0.1	67-dou/har (×)	623.15	18.9 ± 0.7	0.1	67-dou/har (×)
373.15	-20.4 ± 0.7	0.2	67-dou/har (×)				

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	0.250	-89.1 ± 0.5	67-dou/har	303.15	0.500	-54.5 ± 0.5	67-dou/har
273.15	0.500	-72.3 ± 0.5	67-dou/har	303.15	0.750	-45.4 ± 0.5	67-dou/har
273.15	0.750	-60.0 ± 0.5	67-dou/har	323.15	0.250	-55.9 ± 0.5	67-dou/har
298.15	0.250	-70.7 ± 0.5	67-dou/har	323.15	0.500	-45.0 ± 0.5	67-dou/har
298.15	0.500	-57.1 ± 0.5	67-dou/har	323.15	0.750	-37.5 ± 0.5	67-dou/har
298.15	0.750	-47.5 ± 0.5	67-dou/har	348.15	0.250	-43.8 ± 0.5	67-dou/har
303.15	0.250	-67.4 ± 0.5	67-dou/har	348.15	0.500	-35.0 ± 0.5	67-dou/har

cont.

Tetrafluoromethane + Methane (cont.)

Table 3. (cont.)

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	0.750	-29.1 ± 0.5	67-dou/har	498.15	0.500	1.1 ± 0.5	67-dou/har
373.15	0.250	-33.6 ± 0.5	67-dou/har	498.15	0.750	1.1 ± 0.5	67-dou/har
373.15	0.500	-26.4 ± 0.5	67-dou/har	523.15	0.250	3.5 ± 0.5	67-dou/har
373.15	0.750	-22.0 ± 0.5	67-dou/har	523.15	0.500	4.8 ± 0.5	67-dou/har
398.15	0.250	-25.1 ± 0.5	67-dou/har	523.15	0.750	4.3 ± 0.5	67-dou/har
398.15	0.500	-19.3 ± 0.5	67-dou/har	548.15	0.250	7.4 ± 0.5	67-dou/har
398.15	0.750	-16.0 ± 0.5	67-dou/har	548.15	0.500	8.0 ± 0.5	67-dou/har
423.15	0.250	-17.7 ± 0.5	67-dou/har	548.15	0.750	7.1 ± 0.5	67-dou/har
423.15	0.500	-13.1 ± 0.5	67-dou/har	573.15	0.250	10.8 ± 0.5	67-dou/har
423.15	0.750	-10.9 ± 0.5	67-dou/har	573.15	0.500	11.0 ± 0.5	67-dou/har
448.15	0.250	-11.3 ± 0.5	67-dou/har	573.15	0.750	9.6 ± 0.5	67-dou/har
448.15	0.500	-7.7 ± 0.5	67-dou/har	598.15	0.250	14.0 ± 0.5	67-dou/har
448.15	0.750	-6.3 ± 0.5	67-dou/har	598.15	0.500	13.7 ± 0.5	67-dou/har
473.15	0.250	-5.8 ± 0.5	67-dou/har	598.15	0.750	11.9 ± 0.5	67-dou/har
473.15	0.500	-3.1 ± 0.5	67-dou/har	623.15	0.250	16.8 ± 0.5	67-dou/har
473.15	0.750	-2.4 ± 0.5	67-dou/har	623.15	0.500	16.1 ± 0.5	67-dou/har
498.15	0.250	-0.8 ± 0.5	67-dou/har	623.15	0.750	14.1 ± 0.5	67-dou/har

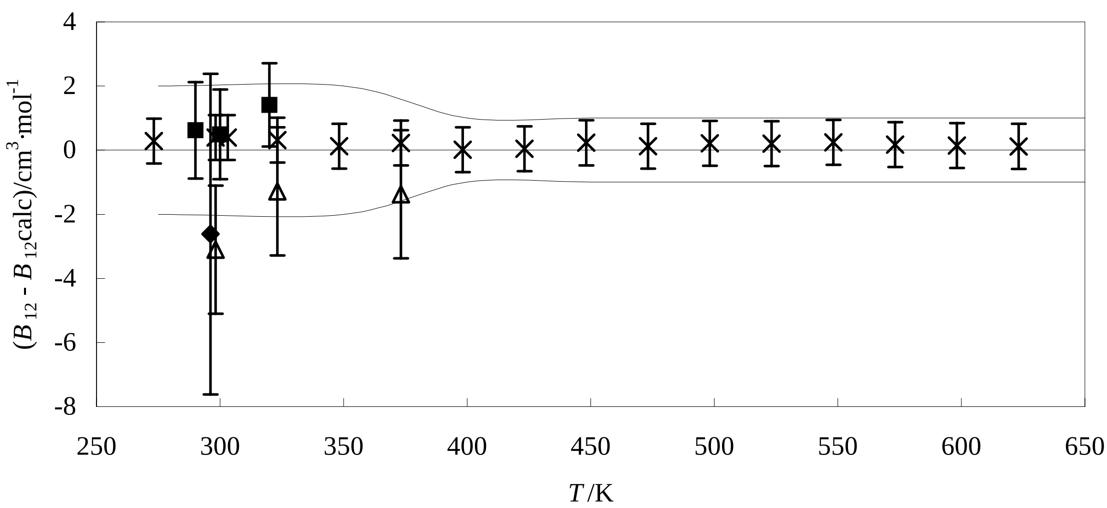

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	18.5 ± 0.2	82-mar/tre	320.00	0.500	16.1 ± 0.2	82-mar/tre
298.15	0.500	13.0 ± 1.0	71-dan/kno	323.15	0.500	13.0 ± 2.0	71-dan/kno
300.00	0.500	17.9 ± 0.2	82-mar/tre	373.15	0.500	10.0 ± 1.0	71-dan/kno

cont.

Tetrafluoromethane + Methane (cont.)

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	0.250	5.6 ± 0.4	67-dou/har	448.15	0.250	3.1 ± 0.4	67-dou/har
273.15	0.500	4.4 ± 0.4	67-dou/har	448.15	0.500	2.5 ± 0.4	67-dou/har
273.15	0.750	3.4 ± 0.4	67-dou/har	448.15	0.750	2.1 ± 0.3	67-dou/har
298.15	0.250	4.9 ± 0.4	67-dou/har	473.15	0.250	3.0 ± 0.4	67-dou/har
298.15	0.500	3.9 ± 0.4	67-dou/har	473.15	0.500	2.4 ± 0.3	67-dou/har
298.15	0.750	3.0 ± 0.4	67-dou/har	473.15	0.750	2.0 ± 0.3	67-dou/har
303.15	0.250	4.8 ± 0.4	67-dou/har	498.15	0.250	2.9 ± 0.4	67-dou/har
303.15	0.500	3.8 ± 0.4	67-dou/har	498.15	0.500	2.4 ± 0.3	67-dou/har
303.15	0.750	2.9 ± 0.4	67-dou/har	498.15	0.750	1.9 ± 0.3	67-dou/har
323.15	0.250	4.4 ± 0.4	67-dou/har	523.15	0.250	2.9 ± 0.4	67-dou/har
323.15	0.500	3.5 ± 0.4	67-dou/har	523.15	0.500	2.3 ± 0.3	67-dou/har
323.15	0.750	2.8 ± 0.4	67-dou/har	523.15	0.750	1.9 ± 0.3	67-dou/har
348.15	0.250	4.0 ± 0.4	67-dou/har	548.15	0.250	2.8 ± 0.4	67-dou/har
348.15	0.500	3.3 ± 0.4	67-dou/har	548.15	0.500	2.2 ± 0.3	67-dou/har
348.15	0.750	2.6 ± 0.4	67-dou/har	548.15	0.750	1.8 ± 0.3	67-dou/har
373.15	0.250	3.7 ± 0.4	67-dou/har	573.15	0.250	2.7 ± 0.4	67-dou/har
373.15	0.500	3.0 ± 0.4	67-dou/har	573.15	0.500	2.2 ± 0.3	67-dou/har
373.15	0.750	2.4 ± 0.3	67-dou/har	573.15	0.750	1.8 ± 0.3	67-dou/har
398.15	0.250	3.5 ± 0.4	67-dou/har	598.15	0.250	2.7 ± 0.4	67-dou/har
398.15	0.500	2.8 ± 0.4	67-dou/har	598.15	0.500	2.2 ± 0.3	67-dou/har
398.15	0.750	2.2 ± 0.3	67-dou/har	598.15	0.750	1.7 ± 0.3	67-dou/har
423.15	0.250	3.3 ± 0.4	67-dou/har	623.15	0.250	2.7 ± 0.4	67-dou/har
423.15	0.500	2.6 ± 0.4	67-dou/har	623.15	0.500	2.1 ± 0.3	67-dou/har
423.15	0.750	2.2 ± 0.3	67-dou/har	623.15	0.750	1.7 ± 0.3	67-dou/har

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	5.0 ± 0.4	67-dou/har	448.15	2.7 ± 0.4	67-dou/har
298.15	4.6 ± 0.4	67-dou/har	473.15	2.7 ± 0.4	67-dou/har
303.15	4.4 ± 0.4	67-dou/har	498.15	2.6 ± 0.4	67-dou/har
323.15	4.1 ± 0.4	67-dou/har	523.15	2.6 ± 0.4	67-dou/har
348.15	3.7 ± 0.4	67-dou/har	548.15	2.5 ± 0.3	67-dou/har
373.15	3.4 ± 0.4	67-dou/har	573.15	2.5 ± 0.3	67-dou/har
398.15	3.1 ± 0.4	67-dou/har	598.15	2.6 ± 0.4	67-dou/har
423.15	2.9 ± 0.4	67-dou/har	623.15	2.6 ± 0.4	67-dou/har

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	3.5 ± 0.4	67-dou/har	398.15	2.4 ± 0.3	67-dou/har
298.15	3.0 ± 0.4	67-dou/har	423.15	2.3 ± 0.3	67-dou/har
303.15	3.0 ± 0.4	67-dou/har	448.15	2.2 ± 0.3	67-dou/har
323.15	2.9 ± 0.4	67-dou/har	473.15	2.1 ± 0.3	67-dou/har
348.15	2.7 ± 0.4	67-dou/har	498.15	2.1 ± 0.3	67-dou/har
373.15	2.5 ± 0.3	67-dou/har	523.15	2.0 ± 0.3	67-dou/har

cont.

Tetrafluoromethane + Methane (cont.)

Table 7. (cont.)

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
548.15	1.9 ± 0.3	67-dou/har	598.15	1.7 ± 0.3	67-dou/har
573.15	1.8 ± 0.3	67-dou/har	623.15	1.6 ± 0.3	67-dou/har

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 522
Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-120.0 ± 4.0	69-dan/kno	373.15	-70.0 ± 4.0	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	15 ± 1	69-dan/kno	373.15	0.500	12 ± 1	69-dan/kno

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 523
Ethane [74-84-0] C_2H_6 MW = 30.07

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-107.7 ± 3.7	86-dun/big	320.00	-81.5 ± 2.9	86-dun/big
300.00	-98.6 ± 3.5	86-dun/big	323.15	-87.0 ± 5.0	71-dan/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	38.3 ± 0.4	86-dun/big	320.00	0.500	33.2 ± 0.4	86-dun/big
300.00	0.500	35.8 ± 0.4	86-dun/big	323.15	0.500	27.0 ± 1.0	71-dan/kno

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 524
Octafluoropropane [76-19-7] C_3F_8 MW = 188.02

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-179 ± 20	69-dan/kno	373.15	-113 ± 20	69-dan/kno

cont.

Tetrafluoromethane + Octafluoropropane (cont.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	74 ± 2	69-dan/kno	373.15	0.500	54 ± 2	69-dan/kno

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 525
Decafluorobutane [355-25-9] C_4F_{10} MW = 238.03

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-224 ± 25	69-dan/kno	373.15	-141 ± 20	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	183 ± 4	69-dan/kno	373.15	0.500	127 ± 2	69-dan/kno

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 526
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-166 ± 5	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	166 ± 1	71-dan/kno				

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 527
Dodecafluoropentane [678-26-2] C_5F_{12} MW = 288.03

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-259 ± 30	69-dan/kno	373.15	-173 ± 30	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	370 ± 6	69-dan/kno	373.15	0.500	245 ± 11	69-dan/kno

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 528
2,2-Dimethylpropane [463-82-1] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-234 ± 15	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	168 ± 10	71-dan/kno				

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 529
Tetradecafluorohexane [355-42-0] C_6F_{14} MW = 338.04

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-277 ± 35	69-dan/kno	373.15	-196 ± 38	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	614 ± 10	69-dan/kno	373.15	0.500	390 ± 8	69-dan/kno

Tetrafluoromethane [75-73-0] CF_4 MW = 88.00 530
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-255 ± 30	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	537 ± 10	71-dan/kno				

Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47 531
Trifluoromethane [75-46-7] CHF_3 MW = 70.01

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
300.30	-261.0 ± 10.0	76-bou/jad	300.31	-252.8 ± 10.0	76-bou/jad

Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47 532
1,2-Dichloro-1,1,2,2-tetrafluoroethane [76-14-2] $C_2Cl_2F_4$ MW = 170.92

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = -2.1738\cdot 10 + 4.0729\cdot 10^4/(T/\text{K}) - 5.2896\cdot 10^7/(T/\text{K})^2$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
250	-705.2 ± 20	350	-337.2 ± 15	450	-192.4 ± 15
300	-473.7 ± 15	400	-250.5 ± 15	475	-170.4 ± 15

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp}-B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp}-B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
243.15	-776 ± 20	-27.1	91-sch/web(●)	370.00	-299 ± 10	-1.0	85-has/uem(■)
253.15	-689 ± 20	-2.7	91-sch/web(●)	380.00	-281 ± 10	-0.1	85-has/uem(■)
263.15	-630 ± 12	0.8	91-sch/web(●)	390.00	-265 ± 10	0.1	85-has/uem(■)
273.15	-582 ± 12	-0.4	91-sch/web(●)	400.00	-250 ± 10	0.5	85-has/uem(■)
296.15	-478 ± 8	9.3	91-sch/web(●)	410.00	-236 ± 10	1.1	85-has/uem(■)
296.15	-472 ± 8	15.3	92-sch/hau(▲)	413.15	-225 ± 17	8.0	92-sch/hau(▲)
330.00	-394 ± 10	-10.0	85-has/uem(■)	420.00	-224 ± 10	0.6	85-has/uem(■)
340.00	-366 ± 10	-6.5	85-has/uem(■)	430.00	-213 ± 10	0.1	85-has/uem(■)
350.00	-342 ± 10	-4.8	85-has/uem(■)	440.00	-202 ± 10	0.4	85-has/uem(■)
353.15	-319 ± 15	11.5	92-sch/hau(▲)	473.15	-165 ± 18	6.9	92-sch/hau(▲)
360.00	-319 ± 10	-2.2	85-has/uem(■)				

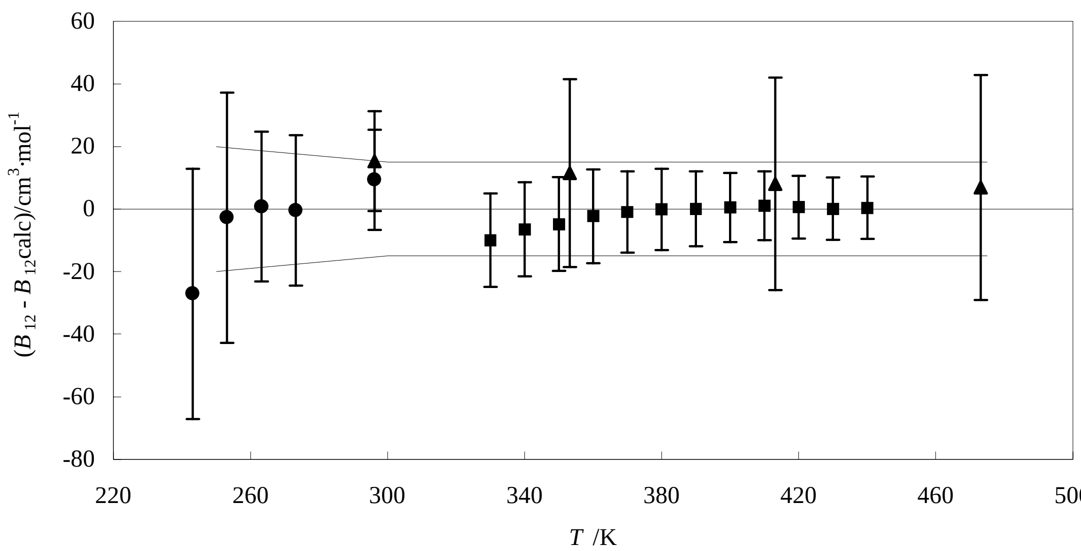

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47 533
1,1-Dichloro-2,2,2-trifluoroethane [306-83-2] $C_2HCl_2F_3$ MW = 152.93

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
268.15	-825 ± 25	91-sch/web	296.15	-654 ± 20	91-sch/web

Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47 534
1-Chloro-1,1-difluoroethane [75-68-3] $C_2H_3ClF_2$ MW = 100.49

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
248.15	-789 ± 10	91-sch/web	296.15	-488 ± 6	92-sch/hau
258.15	-707 ± 9	91-sch/web	353.15	-321 ± 12	92-sch/hau
273.15	-607 ± 8	91-sch/web	413.15	-225 ± 14	92-sch/hau
296.15	-494 ± 6	91-sch/web	473.15	-165 ± 17	92-sch/hau

Chlorodifluoromethane [75-45-6] $CHClF_2$ MW = 86.47 535
1,1-Difluoroethane [75-37-6] $C_2H_4F_2$ MW = 66.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
233.15	-999 ± 15	91-sch/web	296.15	-465 ± 5	92-sch/hau
253.15	-753 ± 10	91-sch/web	353.15	-293 ± 10	92-sch/hau
273.15	-593 ± 8	91-sch/web	413.15	-199 ± 11	92-sch/hau
296.15	-471 ± 5	91-sch/web	473.15	-143 ± 12	92-sch/hau

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 536
Methane [74-82-8] CH_4 MW = 16.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
298.15	-199 ± 7	73-gup/les			

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 537
Ethene [74-85-1] C_2H_4 MW = 28.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$/$cm^3 \cdot mol^{-1}$	Ref.
298.15	-373 ± 15	73-gup/les			

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 538
Methyl methanoate [107-31-3] $C_2H_4O_2$ MW = 60.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-1511 ± 50	59-lam/cla	368.20	-723 ± 50	59-lam/cla
350.20	-864 ± 50	59-lam/cla			

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 539
Dimethyl ether [115-10-6] C_2H_6O MW = 46.07

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
333.20	-930 ± 27	81-lan/wor	363.20	-660 ± 21	81-lan/wor
343.20	-825 ± 25	81-lan/wor	373.20	-600 ± 21	81-lan/wor
353.20	-735 ± 30	81-lan/wor	393.20	-500 ± 18	81-lan/wor

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 540
Ethanol [64-17-5] C_2H_6O MW = 46.07

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-2180 ± 65	73-mar/bai			

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 541
Propanone [67-64-1] C_3H_6O MW = 58.08

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.6239 \cdot 10^4 + 1.2491 \cdot 10^7/(T/K) - 2.5216 \cdot 10^9/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-2620.1 ± 200	340	-1313.9 ± 100	380	-830.6 ± 80
320	-1829.6 ± 150	360	-998.6 ± 100	400	-771.5 ± 70

cont.

Trichloromethane + Propanone (cont)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
298.00	-2623 ± 181	95	80-may/wil(■)	348.00	-1207 ± 110	-40	80-may/wil(■)
298.00	-2620 ± 200	98	80-pas/han(▲)	348.00	-1212 ± 50	-45	80-pas/han(▲)
308.00	-2179 ± 159	86	80-may/wil(■)	353.20	-1087 ± 15	0	81-doy/hut(□)
308.00	-2180 ± 200	85	80-pas/han(▲)	358.15	-1118 ± 100	-97	89-abu/ver-1(Δ)
323.00	-1706 ± 135	31	80-may/wil(■)	358.15	-1130 ± 100	-109	89-abu/ver-1(Δ)
323.00	-1705 ± 90	32	80-pas/han(▲)	363.20	-971 ± 15	-8	81-doy/hut(□)
323.30	-1735 ± 40	-7	81-doy/hut(□)	373.00	-896 ± 95	-21	80-may/wil(■)
327.80	-1543 ± 34	57	81-doy/hut(□)	373.00	-904 ± 20	-29	80-pas/han(▲)
333.20	-2005 ± 60	-541	61-zaa/kol-1[1]	373.20	-866 ± 17	8	81-doy/hut(□)
333.20	-1439 ± 23	25	81-doy/hut(□)	378.20	-819 ± 14	22	81-doy/hut(□)
336.50	-1358 ± 20	30	81-doy/hut(□)	383.20	-995 ± 30	-180	61-zaa/kol-1(●)
338.20	-1319 ± 17	32	81-doy/hut(□)	393.20	-930 ± 28	-149	61-zaa/kol-1(●)
343.20	-1300 ± 40	-48	61-zaa/kol-1(●)	393.20	-712 ± 13	69	81-doy/hut(□)
343.20	-1243 ± 17	9	81-doy/hut(□)				

[1] Not included in Figure 1.

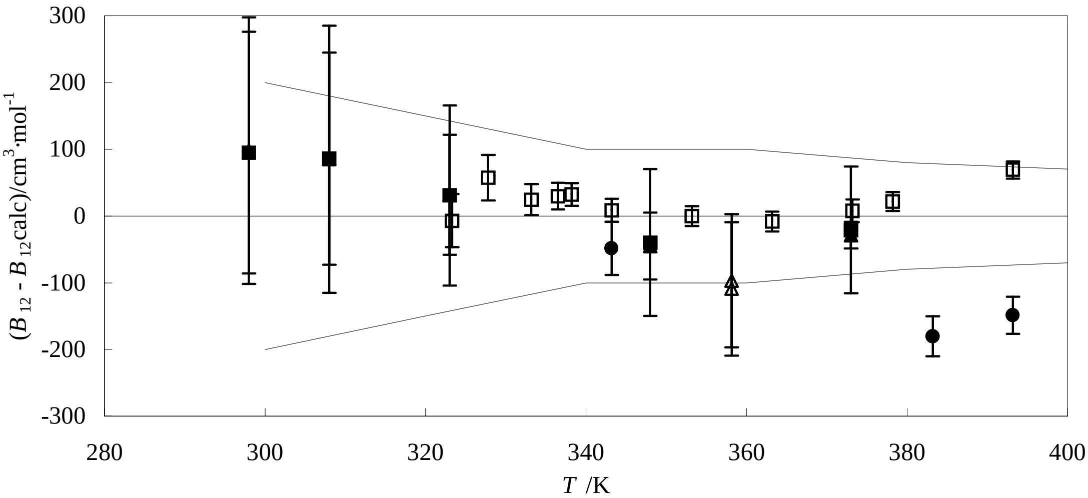

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
358.15	0.500	-990 ± 50	89-abu/ver-1	358.15	0.500	-1003 ± 50	89-abu/ver-1

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.00	0.500	-1000 ± 100	80-pas/han	348.00	0.500	-262 ± 2	80-pas/han
308.00	0.500	-743 ± 20	80-pas/han	373.00	0.500	-144 ± 2	80-pas/han
323.00	0.500	-484 ± 5	80-pas/han				

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 542
Methyl ethanoate [79-20-9] $C_3H_6O_2$ MW = 74.08

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-1615 ± 50	59-lam/cla	353.20	-1333 ± 50	59-lam/cla
338.20	-1475 ± 50	59-lam/cla	368.20	-1240 ± 50	59-lam/cla

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 543
Propyl methanoate [110-74-7] $C_4H_8O_2$ MW = 88.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
324.20	-1890 ± 50	59-lam/cla	353.20	-1321 ± 50	59-lam/cla
335.20	-1667 ± 50	59-lam/cla	368.20	-1133 ± 50	59-lam/cla

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 544
Ethyl ethanoate [141-78-6] $C_4H_8O_2$ MW = 88.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-2150 ± 50	59-lam/cla	353.20	-1495 ± 50	59-lam/cla
338.20	-1720 ± 50	59-lam/cla	368.20	-1380 ± 50	59-lam/cla

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 545
Diethyl ether [60-29-7] $C_4H_{10}O$ MW = 74.12

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -4.1677 \cdot 10^3 + 3.8019 \cdot 10^6/(T/K) - 9.5245 \cdot 10^8/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-2077.5 ± 100	340	-1224.8 ± 100	380	-758.6 ± 100
320	-1588.0 ± 100	360	-956.0 ± 100	400	-615.8 ± 100

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
323.20	-1504 ± 55	18	81-doy/may(●)	338.20	-1243 ± 53	10	81-doy/may(●)
326.20	-1520 ± 50	-56	52-fox/lam(■)	352.00	-1030 ± 50	24	52-fox/lam(■)
333.20	-1321 ± 52	15	81-doy/may(●)	353.20	-1054 ± 46	-16	81-doy/may(●)
338.00	-1290 ± 50	-34	52-fox/lam(■)	363.00	-870 ± 50	52	52-fox/lam(■)

cont.

Trichloromethane + Diethyl ether (cont)

Table 2. cont.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
363.20	-954 ± 45	-34	81-doy/may(●)	393.00	-500 ± 50	160	52-fox/lam(■)
378.20	-836 ± 42	-62	81-doy/may(●)	393.20	-739 ± 38	-80	81-doy/may(●)

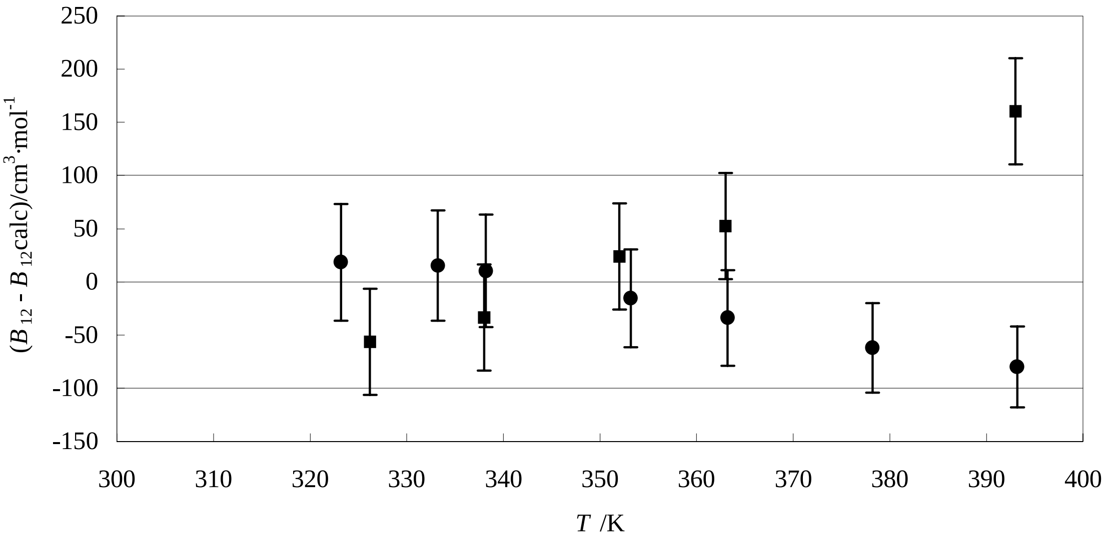

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Trichloromethane **[67-66-3]** **$CHCl_3$** **MW = 119.38** **546**
Diethylamine **[109-89-7]** **$C_4H_{11}N$** **MW = 73.14**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-2063 ± 50	59-lam/cla	336.70	-1786 ± 50	59-lam/cla

Trichloromethane **[67-66-3]** **$CHCl_3$** **MW = 119.38** **547**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 1.5715 \cdot 10^3 - 9.3146 \cdot 10^5/(T/K)$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
350	-1089.8 ± 80	390	-816.9 ± 50	430	-594.7 ± 30
370	-946.0 ± 70	410	-700.4 ± 30		

cont.

Trichloromethane + Benzene (cont)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
353.15	-1133 ± 40	-67	65-zaa/bel(■)	383.15	-943 ± 30	-83	65-zaa/bel(■)
353.20	-1010 ± 30	56	98-wor/joh(●)	383.20	-813 ± 30	46	98-wor/joh(●)
363.15	-1048 ± 40	-55	65-zaa/bel(■)	393.20	-761 ± 30	36	98-wor/joh(●)
363.20	-936 ± 30	57	98-wor/joh(●)	403.20	-715 ± 30	24	98-wor/joh(●)
373.15	-994 ± 30	-69	65-zaa/bel(■)	413.20	-674 ± 30	9	98-wor/joh(●)
373.20	-871 ± 30	53	98-wor/joh(●)	423.20	-636 ± 30	-7	98-wor/joh(●)

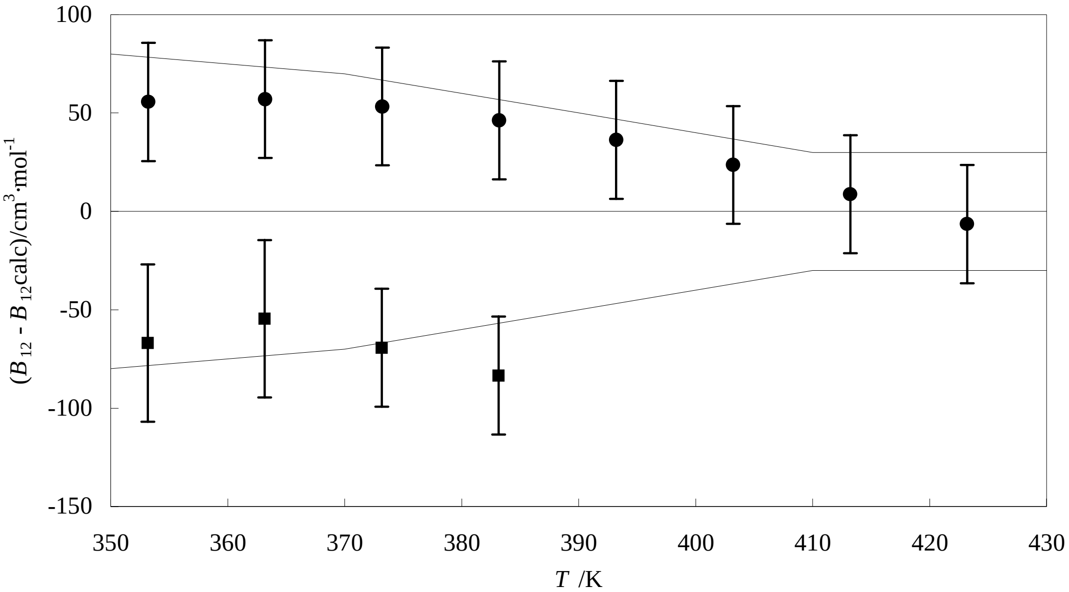

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Trichloromethane **[67-66-3]** **$CHCl_3$** **MW = 119.38** **548**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-844 ± 30	98-wor/joh	393.20	-665 ± 30	98-wor/joh
363.20	-798 ± 30	98-wor/joh	403.20	-625 ± 30	98-wor/joh
373.20	-749 ± 30	98-wor/joh	413.20	-595 ± 30	98-wor/joh
383.20	-697 ± 30	98-wor/joh	423.20	-568 ± 30	98-wor/joh

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 **549**
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.15	-1230 ± 37	73-mar/bai	352.00	-960 ± 50	52-fox/lam
326.20	-1190 ± 50	52-fox/lam			

Trichloromethane [67-66-3] $CHCl_3$ MW = 119.38 **550**
Triethylamine [121-44-8] $C_6H_{15}N$ MW = 101.19

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.00	-3170 ± 150	80-pas/han	348.00	-1340 ± 50	80-pas/han
323.00	-1960 ± 80	80-pas/han	373.00	-1030 ± 50	80-pas/han

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
308.00	0.500	-1690 ± 100	80-pas/han	348.00	0.500	-256 ± 3	80-pas/han
323.00	0.500	-630 ± 100	80-pas/han	373.00	0.500	-118 ± 6	80-pas/han

Dichloromethane [75-09-2] CH_2Cl_2 MW = 84.93 **551**
Chloroethane [75-00-3] C_2H_5Cl MW = 64.51

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	-590 ± 14	68-rae	333.20	-469 ± 14	68-rae
313.20	-567 ± 21	68-rae			

Dichloromethane [75-09-2] CH_2Cl_2 MW = 84.93 **552**
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -5.7315 \cdot 10^2 + 5.2812 \cdot 10^5/(T/K) - 2.1972 \cdot 10^8/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
350	-857.9 ± 35	390	-663.6 ± 35	430	-533.3 ± 35
370	-750.8 ± 35	410	-592.1 ± 35	450	-484.6 ± 35

cont.

Dichloromethane + Benzene (cont)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
353.20	-840 ± 35	-0.8	98-wor/joh(◆)	413.20	-582 ± 35	-0.1	98-wor/joh(◆)
363.20	-784 ± 35	0.7	98-wor/joh(◆)	423.20	-553 ± 35	-1.0	98-wor/joh(◆)
373.20	-735 ± 35	0.6	98-wor/joh(◆)	433.20	-525 ± 35	-0.1	98-wor/joh(◆)
383.20	-691 ± 35	0.3	98-wor/joh(◆)	443.20	-500 ± 35	0.1	98-wor/joh(◆)
393.20	-651 ± 35	0.2	98-wor/joh(◆)	453.20	-477 ± 35	0.6	98-wor/joh(◆)
403.20	-615 ± 35	-0.1	98-wor/joh(◆)				

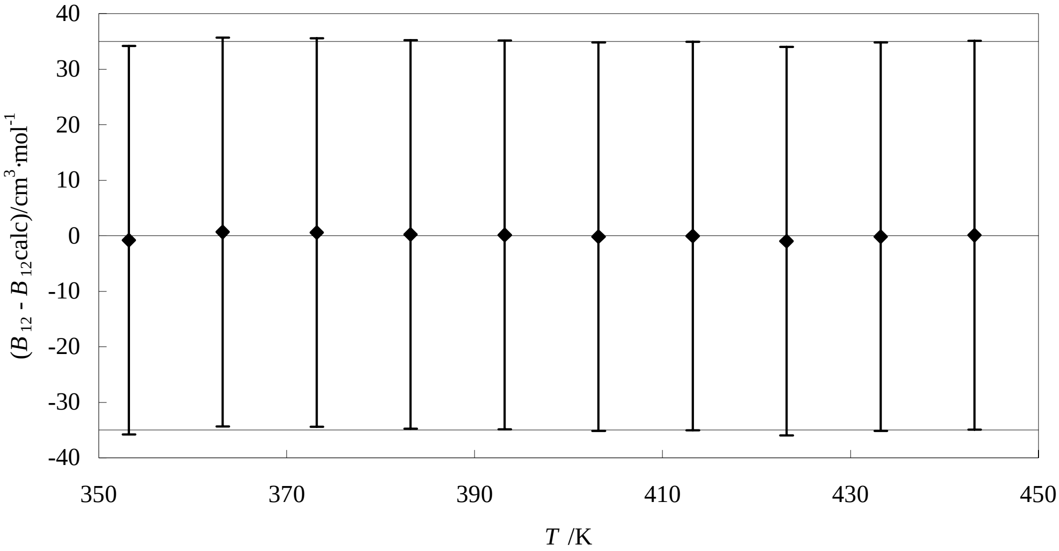

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Dichloromethane **[75-09-2]** **CH_2Cl_2** **MW = 84.93** **553**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-619 ± 35	98-wor/joh	413.20	-448 ± 35	98-wor/joh
363.20	-593 ± 35	98-wor/joh	423.20	-422 ± 35	98-wor/joh
373.20	-588 ± 35	98-wor/joh	433.20	-400 ± 35	98-wor/joh
383.20	-521 ± 35	98-wor/joh	443.20	-392 ± 35	98-wor/joh
393.20	-495 ± 35	98-wor/joh	453.20	-372 ± 35	98-wor/joh
403.20	-474 ± 35	98-wor/joh			

Difluoromethane **[75-10-5]** **CH_2F_2** **MW = 52.02** **554**
Pentafluoroethane **[354-33-6]** **C_2HF_5** **MW = 120.02**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
338.15	-225.2	±	2.0	94-web/def	373.15	-171.2	±	2.0	94-web/def
353.15	-199.0	±	2.0	94-web/def					

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
310.00	0.500	-301.0	±	5.0	96-zha/sat	370.00	0.776	-179.4	±	5.0	96-sat/kiy
310.00	0.700	-288.4	±	5.0	96-zha/sat	370.00	0.902	-176.6	±	5.0	96-sat/kiy
320.00	0.367	-294.4	±	9.2	96-kiy/tak	370.00	0.500	-188.4	±	2.0	96-zha/sat
320.00	0.606	-279.2	±	8.8	96-kiy/tak	370.00	0.700	-179.8	±	2.0	96-zha/sat
320.00	0.698	-264.2	±	11.3	96-sat/kiy	373.15	0.546	-177.3	±	1.0	94-web/def
320.00	0.776	-262.8	±	8.0	96-sat/kiy	380.00	0.367	-181.6	±	6.1	96-kiy/tak
320.00	0.902	-254.3	±	8.0	96-sat/kiy	380.00	0.606	-171.2	±	5.8	96-kiy/tak
320.00	0.500	-276.8	±	4.0	96-zha/sat	380.00	0.698	-168.5	±	5.0	96-sat/kiy
320.00	0.700	-265.0	±	4.0	96-zha/sat	380.00	0.776	-168.7	±	5.0	96-sat/kiy
330.00	0.367	-260.5	±	8.3	96-kiy/tak	380.00	0.902	-163.8	±	5.0	96-sat/kiy
330.00	0.606	-251.9	±	8.1	96-kiy/tak	380.00	0.500	-178.4	±	2.0	96-zha/sat
330.00	0.698	-244.1	±	7.0	96-sat/kiy	380.00	0.700	-167.4	±	2.0	96-zha/sat
330.00	0.776	-242.2	±	8.0	96-sat/kiy	390.00	0.367	-169.7	±	5.8	96-kiy/tak
330.00	0.902	-235.0	±	7.0	96-sat/kiy	390.00	0.606	-160.0	±	5.5	96-kiy/tak
330.00	0.500	-255.1	±	4.0	96-zha/sat	390.00	0.698	-157.8	±	5.0	96-sat/kiy
330.00	0.700	-244.1	±	4.0	96-zha/sat	390.00	0.776	-156.5	±	5.0	96-sat/kiy
338.15	0.546	-230.7	±	1.0	94-web/def	390.00	0.902	-154.3	±	5.0	96-sat/kiy
340.00	0.367	-241.3	±	7.8	96-kiy/tak	400.00	0.367	-158.6	±	5.4	96-kiy/tak
340.00	0.606	-228.1	±	7.4	96-kiy/tak	400.00	0.606	-149.9	±	5.2	96-kiy/tak
340.00	0.698	-225.9	±	7.0	96-sat/kiy	400.00	0.698	-147.9	±	5.0	96-sat/kiy
340.00	0.776	-224.3	±	7.0	96-sat/kiy	400.00	0.776	-147.2	±	5.0	96-sat/kiy
340.00	0.902	-217.9	±	6.0	96-sat/kiy	400.00	0.902	-144.5	±	5.0	96-sat/kiy
340.00	0.500	-235.8	±	3.0	96-zha/sat	410.00	0.367	-148.3	±	5.2	96-kiy/tak
340.00	0.700	-225.4	±	3.0	96-zha/sat	410.00	0.606	-140.2	±	4.9	96-kiy/tak
350.00	0.367	-223.7	±	7.3	96-kiy/tak	410.00	0.698	-138.4	±	4.0	96-sat/kiy
350.00	0.606	-213.4	±	7.0	96-kiy/tak	410.00	0.776	-139.0	±	4.0	96-sat/kiy
350.00	0.698	-209.4	±	6.0	96-sat/kiy	410.00	0.902	-135.4	±	4.0	96-sat/kiy
350.00	0.776	-207.7	±	6.0	96-sat/kiy	420.00	0.367	-138.9	±	4.9	96-kiy/tak
350.00	0.902	-202.7	±	6.0	96-sat/kiy	420.00	0.606	-131.2	±	4.7	96-kiy/tak
350.00	0.500	-218.3	±	3.0	96-zha/sat	420.00	0.698	-129.8	±	4.0	96-sat/kiy
350.00	0.700	-208.7	±	3.0	96-zha/sat	420.00	0.776	-129.3	±	4.0	96-sat/kiy
353.15	0.546	-205.1	±	1.0	94-web/def	420.00	0.902	-127.0	±	4.0	96-sat/kiy
360.00	0.367	-208.6	±	6.8	96-kiy/tak	430.00	0.367	-130.1	±	4.6	96-kiy/tak
360.00	0.606	-197.8	±	6.5	96-kiy/tak	430.00	0.606	-123.1	±	4.5	96-kiy/tak
360.00	0.698	-195.6	±	6.0	96-sat/kiy	430.00	0.698	-122.0	±	4.0	96-sat/kiy
360.00	0.776	-193.5	±	6.0	96-sat/kiy	430.00	0.776	-121.5	±	4.0	96-sat/kiy
360.00	0.902	-188.4	±	6.0	96-sat/kiy	430.00	0.902	-119.6	±	4.0	96-sat/kiy
360.00	0.500	-202.6	±	3.0	96-zha/sat	440.00	0.367	-121.9	±	4.4	96-kiy/tak
360.00	0.700	-193.5	±	3.0	96-zha/sat	440.00	0.606	-115.3	±	4.2	96-kiy/tak
370.00	0.367	-194.1	±	6.4	96-kiy/tak	440.00	0.698	-114.7	±	4.0	96-sat/kiy
370.00	0.606	-183.6	±	6.1	96-kiy/tak	440.00	0.776	-114.2	±	4.0	96-sat/kiy
370.00	0.698	-180.6	±	5.0	96-sat/kiy	440.00	0.902	-112.6	±	4.0	96-sat/kiy

Difluoromethane+ Pentafluoroethane (cont)

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
310.00	0.500	35.8 ± 5.0	96-zha/sat	370.00	0.698	16.8 ± 2.5	96-sat/kiy
310.00	0.700	32.0 ± 5.0	96-zha/sat	370.00	0.700	18.3 ± 3.0	96-zha/sat
320.00	0.367	31.5 ± 9.5	96-kiy/tak	370.00	0.776	17.4 ± 2.5	96-sat/kiy
320.00	0.500	32.4 ± 5.0	96-zha/sat	370.00	0.902	17.2 ± 2.5	96-sat/kiy
320.00	0.606	29.6 ± 8.9	96-kiy/tak	373.15	0.546	14.7 ± 1.0	94-web/def
320.00	0.698	24.6 ± 3.5	96-sat/kiy	380.00	0.367	17.9 ± 5.4	96-kiy/tak
320.00	0.700	28.8 ± 4.5	96-zha/sat	380.00	0.500	19.6 ± 3.0	96-zha/sat
320.00	0.776	25.7 ± 4.0	96-sat/kiy	380.00	0.606	15.8 ± 4.7	96-kiy/tak
320.00	0.902	23.6 ± 3.5	96-sat/kiy	380.00	0.698	15.7 ± 2.5	96-sat/kiy
330.00	0.367	23.4 ± 7.1	96-kiy/tak	380.00	0.700	16.9 ± 2.5	96-zha/sat
330.00	0.500	29.4 ± 4.5	96-zha/sat	380.00	0.776	17.1 ± 2.5	96-sat/kiy
330.00	0.606	24.5 ± 7.4	96-kiy/tak	380.00	0.902	15.4 ± 2.5	96-sat/kiy
330.00	0.698	23.0 ± 3.5	96-sat/kiy	390.00	0.367	17.0 ± 5.1	96-kiy/tak
330.00	0.700	26.1 ± 4.0	96-zha/sat	390.00	0.606	15.0 ± 4.5	96-kiy/tak
330.00	0.776	23.9 ± 3.5	96-sat/kiy	390.00	0.698	15.0 ± 2.5	96-sat/kiy
330.00	0.902	22.0 ± 3.5	96-sat/kiy	390.00	0.776	15.3 ± 2.5	96-sat/kiy
338.15	0.546	19.5 ± 1.0	94-web/def	390.00	0.902	15.1 ± 2.5	96-sat/kiy
340.00	0.367	22.1 ± 6.6	96-kiy/tak	400.00	0.367	16.2 ± 4.9	96-kiy/tak
340.00	0.500	26.9 ± 4.5	96-zha/sat	400.00	0.606	14.3 ± 4.3	96-kiy/tak
340.00	0.606	20.3 ± 6.1	96-kiy/tak	400.00	0.698	14.4 ± 2.0	96-sat/kiy
340.00	0.698	21.4 ± 3.2	96-sat/kiy	400.00	0.776	14.9 ± 2.5	96-sat/kiy
340.00	0.700	23.7 ± 3.5	96-zha/sat	400.00	0.902	14.1 ± 2.0	96-sat/kiy
340.00	0.776	22.4 ± 3.5	96-sat/kiy	410.00	0.367	15.3 ± 4.6	96-kiy/tak
340.00	0.902	20.6 ± 3.0	96-sat/kiy	410.00	0.606	13.5 ± 4.1	96-kiy/tak
350.00	0.367	20.6 ± 6.2	96-kiy/tak	410.00	0.698	13.5 ± 2.0	96-sat/kiy
350.00	0.500	24.7 ± 4.0	96-zha/sat	410.00	0.776	14.7 ± 2.5	96-sat/kiy
350.00	0.606	20.1 ± 6.0	96-kiy/tak	410.00	0.902	13.2 ± 2.0	96-sat/kiy
350.00	0.698	19.9 ± 3.0	96-sat/kiy	420.00	0.367	14.7 ± 4.4	96-kiy/tak
350.00	0.700	21.7 ± 3.5	96-zha/sat	420.00	0.606	12.8 ± 3.8	96-kiy/tak
350.00	0.776	20.5 ± 3.0	96-sat/kiy	420.00	0.698	12.9 ± 2.0	96-sat/kiy
350.00	0.902	19.3 ± 3.0	96-sat/kiy	420.00	0.776	13.3 ± 2.0	96-sat/kiy
353.15	0.546	17.0 ± 1.0	94-web/def	420.00	0.902	12.6 ± 2.0	96-sat/kiy
360.00	0.367	19.7 ± 5.9	96-kiy/tak	430.00	0.367	14.0 ± 4.2	96-kiy/tak
360.00	0.500	22.8 ± 3.5	96-zha/sat	430.00	0.606	12.3 ± 3.7	96-kiy/tak
360.00	0.606	18.5 ± 5.6	96-kiy/tak	430.00	0.698	12.4 ± 2.0	96-sat/kiy
360.00	0.698	19.1 ± 3.0	96-sat/kiy	430.00	0.776	12.8 ± 2.0	96-sat/kiy
360.00	0.700	19.9 ± 3.0	96-zha/sat	430.00	0.902	12.0 ± 2.0	96-sat/kiy
360.00	0.776	19.3 ± 3.0	96-sat/kiy	440.00	0.367	13.5 ± 4.1	96-kiy/tak
360.00	0.902	17.7 ± 2.5	96-sat/kiy	440.00	0.606	11.7 ± 3.5	96-kiy/tak
370.00	0.367	18.5 ± 5.6	96-kiy/tak	440.00	0.698	12.0 ± 2.0	96-sat/kiy
370.00	0.500	21.1 ± 3.0	96-zha/sat	440.00	0.776	12.2 ± 2.0	96-sat/kiy
370.00	0.606	16.9 ± 5.1	96-kiy/tak	440.00	0.902	11.5 ± 2.0	96-sat/kiy

Difluoromethane [75-10-5] CH_2F_2 MW = 52.02 555
1,1,1,2-Tetrafluoroethane [811-97-2] $C_2H_2F_4$ MW = 102.03

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
338.15	-255.5 ± 2.0	94-web/def	373.15	-195.4 ± 2.0	94-web/def
353.15	-227.6 ± 2.0	94-web/def			

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
320.00	0.800	-270.3 ± 9.1	94-sat/kiy	390.00	0.250	-203.6 ± 7.1	94-sat/kiy
330.00	0.600	-267.7 ± 9.0	94-sat/kiy	390.00	0.400	-187.5 ± 6.6	94-sat/kiy
330.00	0.800	-246.4 ± 8.4	94-sat/kiy	390.00	0.600	-172.5 ± 6.2	94-sat/kiy
338.15	0.508	-268.6 ± 1.0	94-web/def	390.00	0.800	-160.6 ± 5.8	94-sat/kiy
340.00	0.250	-292.1 ± 9.8	94-sat/kiy	400.00	0.200	-196.6 ± 6.9	94-sat/kiy
340.00	0.400	-269.0 ± 9.1	94-sat/kiy	400.00	0.250	-190.5 ± 6.7	94-sat/kiy
340.00	0.600	-246.0 ± 8.4	94-sat/kiy	400.00	0.400	-175.2 ± 6.3	94-sat/kiy
340.00	0.800	-226.8 ± 7.8	94-sat/kiy	400.00	0.600	-161.7 ± 5.8	94-sat/kiy
350.00	0.200	-279.9 ± 9.4	94-sat/kiy	400.00	0.800	-150.3 ± 5.5	94-sat/kiy
350.00	0.250	-270.6 ± 9.1	94-sat/kiy	410.00	0.200	-183.8 ± 6.5	94-sat/kiy
350.00	0.400	-248.1 ± 8.4	94-sat/kiy	410.00	0.250	-178.3 ± 6.3	94-sat/kiy
350.00	0.600	-227.2 ± 7.8	94-sat/kiy	410.00	0.400	-164.2 ± 5.9	94-sat/kiy
350.00	0.800	-210.5 ± 7.3	94-sat/kiy	410.00	0.600	-151.6 ± 5.5	94-sat/kiy
353.15	0.508	-239.4 ± 1.0	94-web/def	410.00	0.800	-141.5 ± 5.2	94-sat/kiy
360.00	0.200	-258.8 ± 8.8	94-sat/kiy	420.00	0.200	-172.6 ± 6.2	94-sat/kiy
360.00	0.250	-250.9 ± 8.5	94-sat/kiy	420.00	0.250	-167.2 ± 6.0	94-sat/kiy
360.00	0.400	-230.5 ± 7.9	94-sat/kiy	420.00	0.400	-154.1 ± 5.6	94-sat/kiy
360.00	0.600	-211.5 ± 7.3	94-sat/kiy	420.00	0.600	-142.1 ± 5.3	94-sat/kiy
360.00	0.800	-196.8 ± 6.9	94-sat/kiy	420.00	0.800	-132.7 ± 5.0	94-sat/kiy
370.00	0.200	-241.3 ± 8.2	94-sat/kiy	430.00	0.200	-161.8 ± 5.8	94-sat/kiy
370.00	0.250	-233.8 ± 8.0	94-sat/kiy	430.00	0.250	-157.3 ± 5.7	94-sat/kiy
370.00	0.400	-215.0 ± 7.5	94-sat/kiy	430.00	0.400	-144.5 ± 5.3	94-sat/kiy
370.00	0.600	-197.1 ± 6.9	94-sat/kiy	430.00	0.600	-134.0 ± 5.0	94-sat/kiy
370.00	0.800	-183.5 ± 6.5	94-sat/kiy	430.00	0.800	-124.9 ± 4.8	94-sat/kiy
373.15	0.508	-206.3 ± 1.0	94-web/def	440.00	0.200	-152.0 ± 5.6	94-sat/kiy
380.00	0.200	-224.8 ± 7.7	94-sat/kiy	440.00	0.250	-147.3 ± 5.4	94-sat/kiy
380.00	0.250	-217.9 ± 7.5	94-sat/kiy	440.00	0.400	-135.8 ± 5.1	94-sat/kiy
380.00	0.400	-200.8 ± 7.0	94-sat/kiy	440.00	0.600	-126.0 ± 4.8	94-sat/kiy
380.00	0.600	-184.3 ± 6.5	94-sat/kiy	440.00	0.800	-117.4 ± 4.5	94-sat/kiy
390.00	0.200	-210.1 ± 7.3	94-sat/kiy				

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
320.00	0.887	28.4 ± 1.9	94-sat/kiy	340.00	0.746	24.1 ± 1.6	94-sat/kiy
330.00	0.746	27.5 ± 1.9	94-sat/kiy	340.00	0.887	20.7 ± 1.4	94-sat/kiy
330.00	0.887	23.5 ± 1.6	94-sat/kiy	350.00	0.329	27.9 ± 1.9	94-sat/kiy
338.15	0.508	24.6 ± 2.0	94-web/def	350.00	0.395	26.7 ± 1.8	94-sat/kiy
340.00	0.395	28.9 ± 1.9	94-sat/kiy	350.00	0.567	23.7 ± 1.6	94-sat/kiy
340.00	0.567	26.9 ± 1.8	94-sat/kiy	350.00	0.746	21.4 ± 1.5	94-sat/kiy

cont.

Difluoromethane + 1,1,1,2-Tetrafluoroethane (cont)

Table 5. cont.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
350.00	0.887	19.1 ± 1.4	94-sat/kiy	410.00	0.329	18.1 ± 1.3	94-sat/kiy
353.15	0.508	21.9 ± 2.0	94-web/def	410.00	0.395	17.6 ± 1.2	94-sat/kiy
360.00	0.329	25.2 ± 1.7	94-sat/kiy	410.00	0.567	15.7 ± 1.1	94-sat/kiy
360.00	0.395	24.5 ± 1.7	94-sat/kiy	410.00	0.746	14.4 ± 1.1	94-sat/kiy
360.00	0.567	22.0 ± 1.5	94-sat/kiy	410.00	0.887	13.2 ± 1.0	94-sat/kiy
360.00	0.746	20.0 ± 1.4	94-sat/kiy	420.00	0.329	17.2 ± 1.2	94-sat/kiy
360.00	0.887	18.2 ± 1.3	94-sat/kiy	420.00	0.395	16.6 ± 1.2	94-sat/kiy
370.00	0.329	23.8 ± 1.6	94-sat/kiy	420.00	0.567	14.8 ± 1.1	94-sat/kiy
370.00	0.395	23.0 ± 1.6	94-sat/kiy	420.00	0.746	13.5 ± 1.0	94-sat/kiy
370.00	0.567	20.7 ± 1.4	94-sat/kiy	420.00	0.887	12.3 ± 0.9	94-sat/kiy
370.00	0.746	18.6 ± 1.3	94-sat/kiy	430.00	0.329	16.1 ± 1.2	94-sat/kiy
370.00	0.887	16.9 ± 1.2	94-sat/kiy	430.00	0.395	15.8 ± 1.1	94-sat/kiy
373.15	0.508	18.1 ± 2.0	94-web/def	430.00	0.567	13.9 ± 1.0	94-sat/kiy
380.00	0.329	22.1 ± 1.5	94-sat/kiy	430.00	0.746	12.9 ± 1.0	94-sat/kiy
380.00	0.395	21.4 ± 1.5	94-sat/kiy	430.00	0.887	11.7 ± 0.9	94-sat/kiy
380.00	0.567	19.3 ± 1.4	94-sat/kiy	440.00	0.329	15.3 ± 1.1	94-sat/kiy
380.00	0.746	17.5 ± 1.2	94-sat/kiy	440.00	0.395	14.8 ± 1.1	94-sat/kiy
390.00	0.329	20.7 ± 1.4	94-sat/kiy	440.00	0.567	13.2 ± 1.0	94-sat/kiy
400.00	0.746	15.4 ± 1.1	94-sat/kiy	440.00	0.746	12.3 ± 0.9	94-sat/kiy
400.00	0.887	13.8 ± 1.0	94-sat/kiy	440.00	0.887	11.1 ± 0.9	94-sat/kiy

Bromomethane [74-83-9] CH_3Br MW = 94.94 556
Chloromethane [74-87-3] CH_3Cl MW = 50.49

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
296.00	-484.1 ± 2.0	69-lic/sch	322.80	-381.1 ± 2.0	69-lic/sch
307.70	-430.3 ± 2.0	69-lic/sch			

Bromomethane [74-83-9] CH_3Br MW = 94.94 557
Bromoethane [74-96-4] C_2H_5Br MW = 108.97

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.10	-1047 ± 41	65-rae/bit	313.10	-881 ± 12	65-rae/bit

Bromomethane [74-83-9] CH_3Br MW = 94.94 **558**
Chloroethane [75-00-3] C_2H_5Cl MW = 64.51

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-436 ± 16	68-rae	333.20	-397 ± 7	68-rae

Bromomethane [74-83-9] CH_3Br MW = 94.94 **559**
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
244.00	-617 ± 41	63-kap/lun	297.00	-411 ± 31	63-kap/lun
273.00	-474 ± 34	63-kap/lun	321.00	-356 ± 28	63-kap/lun

Bromomethane [74-83-9] CH_3Br MW = 94.94 **560**
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
244.00	-915 ± 56	63-kap/lun	297.00	-546 ± 37	63-kap/lun
273.00	-661 ± 43	63-kap/lun	321.00	-459 ± 33	63-kap/lun

Bromomethane [74-83-9] CH_3Br MW = 94.94 **561**
Pentane [109-66-0] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.10	-765 ± 38	65-rae/bit			

Chloromethane [74-87-3] CH_3Cl MW = 50.49 **562**
Ethane [74-84-0] C_2H_6 MW = 30.07

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-206.6 ± 9.6	85-eub/kre	423.15	-111.5 ± 1.2	85-eub/kre
348.15	-171.1 ± 4.6	85-eub/kre	448.15	-97.9 ± 1.2	85-eub/kre
373.15	-148.6 ± 2.4	85-eub/kre	473.15	-85.6 ± 1.2	85-eub/kre
398.15	-126.3 ± 1.4	85-eub/kre			

cont.

Chloromethane + Ethane (cont)

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	-228.2 ± 3.0	85-eub/kre	423.15	0.500	-121.7 ± 0.4	85-eub/kre
348.15	0.500	-190.9 ± 1.0	85-eub/kre	448.15	0.500	-106.6 ± 0.4	85-eub/kre
373.15	0.500	-162.4 ± 0.8	85-eub/kre	473.15	0.500	-93.3 ± 0.4	85-eub/kre
398.15	0.500	-139.0 ± 0.4	85-eub/kre				

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
323.15	0.500	28.11 ± 5.06	85-eub/kre	423.15	0.500	9.32 ± 0.23	85-eub/kre
348.15	0.500	16.61 ± 9.42	85-eub/kre	448.15	0.500	8.50 ± 0.25	85-eub/kre
373.15	0.500	12.33 ± 4.54	85-eub/kre	473.15	0.500	7.70 ± 0.25	85-eub/kre
398.15	0.500	9.69 ± 0.20	85-eub/kre				

Chloromethane [74-87-3] CH_3Cl MW = 50.49 563
Propanone [67-64-1] C_3H_6O MW = 58.08

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-670 ± 25	67-bot/spu	376.38	-433 ± 25	67-bot/spu
327.05	-649 ± 25	67-bot/spu	400.72	-367 ± 25	67-bot/spu
352.49	-507 ± 25	67-bot/spu	427.78	-315 ± 25	67-bot/spu

Chloromethane [74-87-3] CH_3Cl MW = 50.49 564
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-542 ± 30	98-par/rie	383.20	-464 ± 30	98-par/rie
358.20	-527 ± 30	98-par/rie	393.20	-442 ± 30	98-par/rie
363.20	-513 ± 30	98-par/rie	403.20	-423 ± 30	98-par/rie
368.20	-500 ± 30	98-par/rie	413.20	-404 ± 30	98-par/rie
373.20	-488 ± 30	98-par/rie	423.20	-387 ± 30	98-par/rie
378.20	-476 ± 30	98-par/rie			

Chloromethane [74-87-3] CH_3Cl MW = 50.49 565
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-383 ± 30	98-par/rie	383.20	-320 ± 30	98-par/rie
358.20	-371 ± 30	98-par/rie	393.20	-303 ± 30	98-par/rie
363.20	-360 ± 30	98-par/rie	403.20	-287 ± 30	98-par/rie
368.20	-349 ± 30	98-par/rie	413.20	-272 ± 30	98-par/rie
373.20	-340 ± 30	98-par/rie	423.20	-258 ± 30	98-par/rie
378.20	-330 ± 30	98-par/rie			

Iodomethane [74-88-4] CH_3I MW = 141.94 566
Diethyl ether [60-29-7] $C_4H_{10}O$ MW = 74.12

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-785 ± 27	62-zaa/kol	343.20	-570 ± 13	62-zaa/kol
328.20	-654 ± 12	62-zaa/kol	358.20	-406 ± 14	62-zaa/kol

Nitromethane [75-52-5] CH_3NO_2 MW = 61.04 567
Propanone [67-64-1] C_3H_6O MW = 58.08

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
318.15	-3830 ± 200	60-bro/smi	323.20	-2679 ± 50	63-bot/spu

Nitromethane [75-52-5] CH_3NO_2 MW = 61.04 568
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-1283 ± 25	63-bot/spu			

Nitromethane [75-52-5] CH_3NO_2 MW = 61.04 569
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
373.15	0.500	729 ± 50	83-mar/rog	373.15	0.500	738 ± 50	83-mar/rog
373.15	0.500	721 ± 50	83-mar/rog				

Methane **[74-82-8]** **CH_4** **MW = 16.04** **570**
Methane-*d* **[676-49-4]** **CH_3D** **MW = 17.05**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
112.65	1.6 ± 0.2	74-fan/van	197.49	1.2 ± 0.2	74-fan/van
149.29	1.2 ± 0.1	74-fan/van	302.04	0.4 ± 0.3	74-fan/van

Methane **[74-82-8]** **CH_4** **MW = 16.04** **571**
Methane-*d*$_2$ **[676-55-1]** **CH_2D_2** **MW = 18.05**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
112.48	2.9 ± 0.2	74-fan/van	196.96	1.8 ± 0.2	74-fan/van
148.91	2.1 ± 0.2	74-fan/van	302.01	1.8 ± 0.2	74-fan/van

Methane **[74-82-8]** **CH_4** **MW = 16.04** **572**
Methane-*d*$_3$ **[676-80-2]** **CHD_3** **MW = 19.06**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
112.29	4.2 ± 0.1	74-fan/van	197.28	2.8 ± 0.3	74-fan/van
149.13	3.4 ± 0.1	74-fan/van	301.84	2.5 ± 0.3	74-fan/van

Methane **[74-82-8]** **CH_4** **MW = 16.04** **573**
Methane-*d*$_4$ **[558-20-3]** **CD_4** **MW = 20.07**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
111.24	5.7 ± 0.2	74-fan/van	167.37	4.7 ± 0.3	74-fan/van
122.15	5.4 ± 0.1	74-fan/van	206.43	4.1 ± 0.3	74-fan/van
132.25	5.0 ± 0.2	74-fan/van	249.95	3.5 ± 0.2	74-fan/van
150.88	4.7 ± 0.2	74-fan/van	300.33	3.6 ± 0.4	74-fan/van

Methane **[74-82-8]** **CH_4** **MW = 16.04** **574**
Methanol **[67-56-1]** **CH_4O** **MW = 32.04**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.2860 \cdot 10^3 + 8.0897 \cdot 10^5/(T/K) - 1.3720 \cdot 10^8/(T/K)^2$$

cont.

Methane + Methanol (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
225	-400.7 ± 15	300	-113.9 ± 7		
250	-245.3 ± 15	350	-94.7 ± 5		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp} - B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp} - B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
227.60	-373 ± 9	7.2	80-laz/bre(●)	288.15	-130 ± 6	0.9	72-hem/kin(■)
242.60	-274 ± 20	8.6	93-sch/lan(▲)	298.15	-114 ± 7	2.1	72-hem/kin(■)
250.70	-264 ± 6	-21.9	80-laz/bre(●)	310.15	-103 ± 4	1.0	72-hem/kin(■)
262.00	-189 ± 20	8.0	93-sch/lan(▲)	323.15	-97 ± 4	-0.5	72-hem/kin(■)
273.20	-171 ± 10	-7.9	80-laz/bre(●)	333.15	-95 ± 2	-1.1	72-hem/kin(■)
282.70	-137 ± 15	4.1	93-sch/lan(▲)				

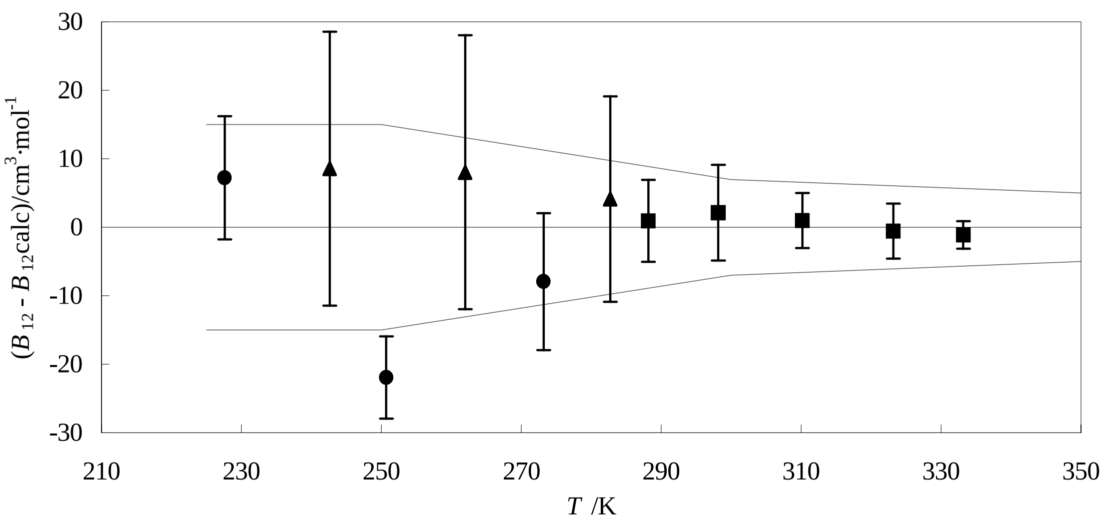

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Methane **[74-82-8]** **CH_4** **MW = 16.04** **575**
Hexafluoroethane **[76-16-4]** **C_2F_6** **MW = 138.01**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ cm^3· mol^{-1}	Ref.	T/K	$B_{12} \pm \delta B_{12}$ cm^3· mol^{-1}	Ref.
323.15	-65 ± 4	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.
323.15	0.5000	51 ± 1	71-dan/kno				

Methane **[74-82-8]** **CH_4** **MW = 16.04** **576**
Ethene **[74-85-1]** **C_2H_4** **MW = 28.05**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 7.3929 · 10 – 4.4007 · 10^4/(T/K)

T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}
240	-109.4 ± 7	350	-51.8 ± 5		
300	-72.8 ± 6	400	-36.1 ± 5		

Table 2. Experimental B_{12} values with uncertainty.

T / K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T / K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
240.00	-118.1 ± 5	-8.7	77-lee(□)	288.70	-70.8 ± 5	7.7	61-mas/eak(●)
245.00	-112.8 ± 5	-7.1	77-lee(□)	288.70	-71.5 ± 5	7.0	69-mcm/edm(▲)
250.00	-107.8 ± 5	-5.7	77-lee(□)	288.72	-70.8 ± 2.4	7.7	69-mam/mam(■)
255.00	-103.1 ± 5	-4.5	77-lee(□)	290.00	-76.8 ± 5	1.0	77-lee(□)
260.00	-98.6 ± 5	-3.3	77-lee(□)	293.15	-81.9 ± 4	-5.7	93-mce/fan-1(Δ)
265.00	-94.4 ± 5	-2.3	77-lee(□)	298.15	-78.7 ± 0.3	-5.0	81-ohg/miz(○)
266.49	-89.9 ± 2.4	1.3	69-mam/mam(■)	298.20	-61.1 ± 0.6	12.5	70-lee/edm(x)
266.50	-89.8 ± 5	1.4	69-mcm/edm(▲)	303.15	-76.2 ± 4	-5.0	93-mce/fan-1(Δ)
270.00	-90.4 ± 5	-1.3	77-lee(□)	313.15	-71.7 ± 4	-5.1	93-mce/fan-1(Δ)
275.00	-86.7 ± 5	-0.6	77-lee(□)	323.15	-64.2 ± 3	-1.9	93-mce/fan-1(Δ)
277.60	-78.1 ± 1.8	6.5	69-mam/mam(■)	323.20	-54.0 ± 3.8	8.2	70-lee/edm(x)
277.60	-78.6 ± 5	6.0	69-mcm/edm(▲)	333.15	-60.3 ± 3	-2.1	93-mce/fan-1(Δ)
280.00	-83.2 ± 5	0.0	77-lee(□)	348.20	-43.8 ± 5	8.7	70-lee/edm(x)
283.15	-86.0 ± 4	-4.5	93-mce/fan-1(Δ)	398.15	-36.5 ± 0.2	0.1	82-ohg/nak-1(◇)
285.00	-79.9 ± 5	0.6	77-lee(□)				

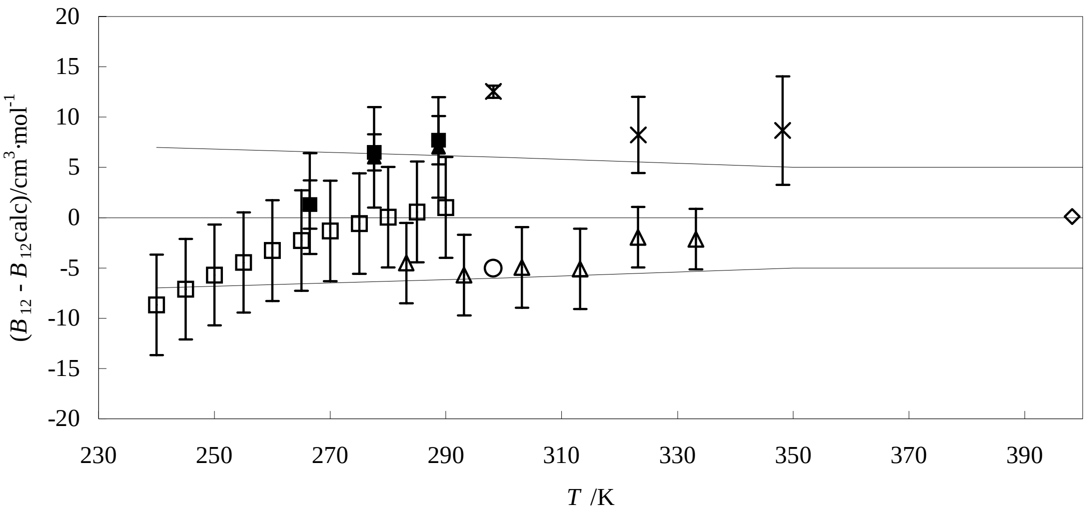

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Methane + Ethene (cont)

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
283.15	0.272	-118.9 ± 2.0	93-mce/fan-1	313.15	0.495	-78.8 ± 2.0	93-mce/fan-1
283.15	0.503	94.6 ± 2.0	93-mce/fan-1	313.15	0.704	-60.9 ± 2.0	93-mce/fan-1
283.15	0.703	-74.4 ± 2.0	93-mce/fan-1	323.15	0.262	-91.8 ± 2.0	93-mce/fan-1
293.15	0.278	-110.8 ± 2.0	93-mce/fan-1	323.15	0.488	-67.7 ± 2.0	93-mce/fan-1
293.15	0.490	-88.0 ± 2.0	93-mce/fan-1	323.15	0.710	-55.9 ± 2.0	93-mce/fan-1
293.15	0.702	-70.4 ± 2.0	93-mce/fan-1	333.15	0.264	-84.0 ± 2.0	93-mce/fan-1
303.15	0.505	-79.3 ± 2.0	93-mce/fan-1	333.15	0.495	-58.5 ± 2.0	93-mce/fan-1
303.15	0.693	-64.8 ± 2.0	93-mce/fan-1	333.15	0.598	-67.5 ± 2.0	93-mce/fan-1
313.15	0.273	-96.0 ± 2.0	93-mce/fan-1				

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
283.15	0.272	5.8 ± 0.5	93-mce/fan-1	313.15	0.495	5.4 ± 0.5	93-mce/fan-1
283.15	0.503	4.9 ± 0.5	93-mce/fan-1	313.15	0.704	4.0 ± 0.5	93-mce/fan-1
283.15	0.703	3.7 ± 0.5	93-mce/fan-1	323.15	0.262	5.2 ± 0.5	93-mce/fan-1
293.15	0.278	5.8 ± 0.5	93-mce/fan-1	323.15	0.488	3.0 ± 0.5	93-mce/fan-1
293.15	0.490	5.1 ± 0.5	93-mce/fan-1	323.15	0.710	3.9 ± 0.5	93-mce/fan-1
293.15	0.702	4.0 ± 0.5	93-mce/fan-1	333.15	0.264	4.4 ± 0.5	93-mce/fan-1
303.15	0.505	4.1 ± 0.5	93-mce/fan-1	333.15	0.495	3.3 ± 0.5	93-mce/fan-1
303.15	0.693	3.5 ± 0.5	93-mce/fan-1	333.15	0.598	3.7 ± 0.5	93-mce/fan-1
313.15	0.273	5.1 ± 0.5	93-mce/fan-1				

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot m^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
283.15	5.5 ± 0.8	93-mce/fan-1	313.15	4.5 ± 0.8	93-mce/fan-1
293.15	5.2 ± 0.8	93-mce/fan-1	323.15	4.2 ± 0.8	93-mce/fan-1
303.15	4.8 ± 0.8	93-mce/fan-1	333.15	3.8 ± 0.8	93-mce/fan-1

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
283.15	4.6 ± 0.8	93-mce/fan-1	313.15	4.0 ± 0.8	93-mce/fan-1
293.15	4.4 ± 0.8	93-mce/fan-1	323.15	3.8 ± 0.8	93-mce/fan-1
303.15	4.2 ± 0.8	93-mce/fan-1	333.15	3.6 ± 0.8	93-mce/fan-1

Methane **[74-82-8]** CH_4 **MW = 16.04** **577**
Ethane **[74-84-0]** C_2H_6 **MW = 30.07**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3 \cdot mol^{-1}} = 4.9899 \cdot 10 - 2.2270 \cdot 10^4/(T/\mathrm{K}) - 5.8719 \cdot 10^6/(T/\mathrm{K})^2$$

T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}
200	-208.2 ± 10	300	-89.6 ± 2.0	400	-42.5 ± 2.0
250	-133.1 ± 5	350	-61.7 ± 2.0		

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
200.00	-206.3 ± 9	1.9	94-est/tru(○)	298.20	-93.0 ± 4	-2.2	79-wor/lew(□)
200.00	-207.4 ± 1	0.8	94-tru(■)	300.00	-89.5 ± 5	0.1	94-est/tru(○)
215.00	-192.3 ± 2	-11.6	68-hoo/nag( )	300.00	-89.1 ± 0.5	0.5	94-tru(■)
225.00	-163.6 ± 8	1.5	94-est/tru(○)	300.00	-89.1 ± 0.3	0.5	96-hou/hol(▪)
225.00	-163.8 ± 0.8	1.3	94-tru(■)	303.15	-88.3 ± 2	-0.8	94-mce/fan(●)
240.00	-158.2 ± 2	-13.4	68-hoo/nag( )	303.15	-86.7 ± 1	0.8	95-bla/wei(◇)
240.00	-143.6 ± 0.7	1.2	94-tru(■)	303.20	-88.0 ± 5	-0.6	79-wor/lew(□)
241.10	-141.0 ± 7	2.5	79-wor/lew(□)	313.15	-81.3 ± 2	-0.2	88-jae/aud(Δ)
250.00	-132.3 ± 7	0.8	94-est/tru(○)	313.15	-82.2 ± 2	-1.1	94-mce/fan(●)
250.00	-132.1 ± 0.7	1.0	94-tru(■)	313.15	-80.6 ± 1	0.5	95-bla/wei(◇)
250.60	-130.0 ± 6	2.5	79-wor/lew(□)	320.00	-76.7 ± 0.3	0.3	96-hou/hol(▪)
262.40	-118.0 ± 6	2.3	79-wor/lew(□)	323.15	-75.6 ± 5	-0.4	39-mic/ned(◆)
266.70	-116.0 ± 4	0.2	79-wor/lew(□)	323.15	-79.0 ± 5	-3.8	68-dan/kno-1(▲)
269.20	-112.0 ± 6	1.9	79-wor/lew(□)	323.15	-76.6 ± 2	-1.4	94-mce/fan(●)
273.15	-119.0 ± 5	-8.7	39-mic/ned(◆)	323.15	-75.0 ± 1	0.2	95-bla/wei(◇)
273.15	-111.9 ± 1	-1.6	68-hoo/nag( )	325.00	-74.5 ± 5	-0.3	94-est/tru(○)
273.15	-109.5 ± 3	0.8	88-jae/aud(Δ)	325.00	-74.0 ± 0.5	0.2	94-tru(■)
273.15	-109.7 ± 1	0.6	95-bla/wei(◇)	333.15	-70.0 ± 2	-0.1	88-jae/aud(Δ)
275.00	-108.3 ± 6	0.4	94-est/tru(○)	333.15	-71.4 ± 2	-1.5	94-mce/fan(●)
275.00	-108.0 ± 0.6	0.7	94-tru(■)	333.15	-69.7 ± 1	0.2	95-bla/wei(◇)
282.20	-105.0 ± 4	-2.2	79-wor/lew(□)	343.15	-66.6 ± 2	-1.7	94-mce/fan(●)
283.15	-101.0 ± 1	1.0	95-bla/wei(◇)	348.15	-68.0 ± 5	-5.5	68-dan/kno-1(▲)
288.70	-96.2 ± 5	1.5	61-mas/eak(–)	350.00	-61.9 ± 4.2	-0.2	94-est/tru(○)
293.15	-94.5 ± 3	-0.1	88-jae/aud(Δ)	350.00	-61.5 ± 0.5	0.2	94-tru(■)
293.15	-93.4 ± 1	1.0	95-bla/wei(◇)	373.15	-56.0 ± 5	-4.0	68-dan/kno-1(▲)
298.15	-93.0 ± 4	-2.1	68-dan/kno-1(▲)	375.00	-51.4 ± 3.8	-0.2	94-est/tru(○)
298.15	-92.9 ± 0.4	-2.0	80-kat/ohg(+)	375.00	-51.1 ± 0.5	0.1	94-tru(■)
298.16	-92.0 ± 5	-1.2	39-mic/ned(◆)				

cont.

Methane + Ethane (cont.)

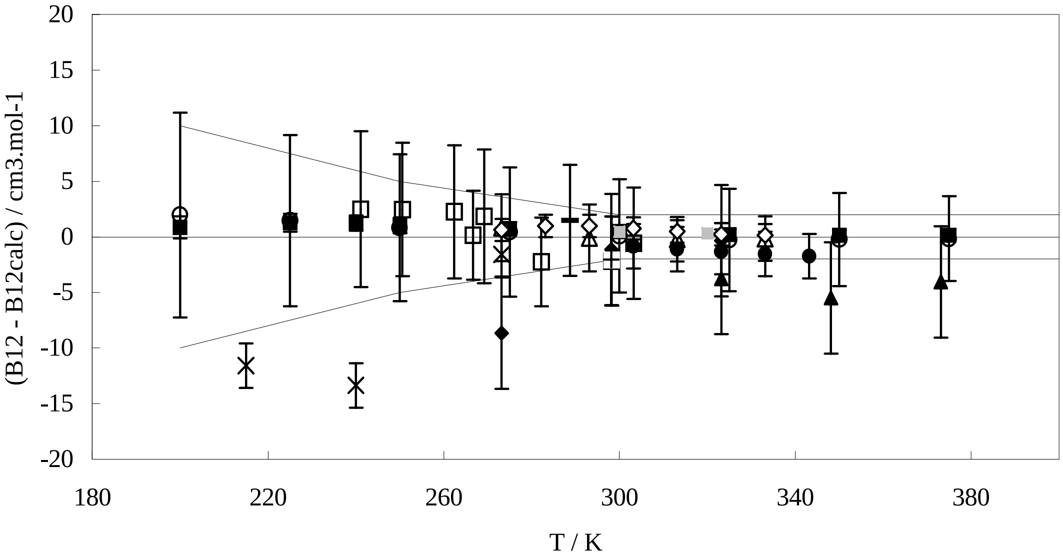

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / m^3· mol^{-1}	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / cm^3· mol^{-1}	Ref.
273.16	0.200	-179.5 ± 3.0	39-mic/ned	313.15	0.612	-77.2 ± 3.5	94-mce/fan
273.16	0.401	-142.5 ± 3.0	39-mic/ned	320.00	0.000	-159.3 ± 0.1	96-hou/hol
273.16	0.601	-108.8 ± 3.0	39-mic/ned	320.00	0.306	-112.6 ± 0.0	96-hou/hol
273.16	0.801	-79.0 ± 3.0	39-mic/ned	320.00	0.500	-87.1 ± 0.0	96-hou/hol
298.16	0.200	-149.8 ± 3.0	39-mic/ned	320.00	0.701	-63.8 ± 0.1	96-hou/hol
298.16	0.401	-118.6 ± 3.0	39-mic/ned	320.00	1.000	-35.3 ± 0.0	96-hou/hol
298.16	0.601	-90.7 ± 3.0	39-mic/ned	323.15	0.330	-108.8 ± 5.5	94-mce/fan
298.16	0.801	-64.7 ± 3.0	39-mic/ned	323.15	0.483	-86.4 ± 4.0	94-mce/fan
300.00	0.000	-182.7 ± 0.1	96-hou/hol	323.15	0.624	-70.0 ± 3.0	94-mce/fan
300.00	0.306	-129.9 ± 0.1	96-hou/hol	323.16	0.200	-125.4 ± 3.0	39-mic/ned
300.00	0.500	-100.9 ± 0.1	96-hou/hol	323.16	0.401	-98.5 ± 3.0	39-mic/ned
300.00	0.701	-74.4 ± 0.1	96-hou/hol	323.16	0.601	-74.7 ± 3.0	39-mic/ned
300.00	1.000	-42.2 ± 0.0	96-hou/hol	323.16	0.801	-53.0 ± 3.0	39-mic/ned
303.15	0.292	-128.0 ± 7.0	94-mce/fan	333.15	0.330	-101.3 ± 5.0	94-mce/fan
303.15	0.499	-99.8 ± 5.0	94-mce/fan	333.15	0.512	-79.4 ± 3.0	94-mce/fan
303.15	0.595	-86.2 ± 4.0	94-mce/fan	333.15	0.699	-58.3 ± 2.5	94-mce/fan
313.15	0.269	-124.9 ± 6.0	94-mce/fan	343.15	0.488	-76.5 ± 4.0	94-mce/fan
313.15	0.471	-97.5 ± 5.0	94-mce/fan				

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / cm^3· mol^{-1}	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / cm^3· mol^{-1}	Ref.
298.15	0.500	21 ± 1	68-dan/kno-1	348.15	0.500	13 ± 1	68-dan/kno-1
323.15	0.500	17 ± 2	68-dan/kno-1	373.15	0.500	12 ± 1	68-dan/kno-1

cont.

Methane + Ethane (cont.)

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
300.00	0.000	10.60 ± 0.01	96-hou/hol	320.00	0.306	6.60 ± 0.01	96-hou/hol
300.00	0.306	7.30 ± 0.01	96-hou/hol	320.00	0.500	5.10 ± 0.01	96-hou/hol
300.00	0.500	5.60 ± 0.01	96-hou/hol	320.00	0.701	3.70 ± 0.01	96-hou/hol
300.00	0.701	4.00 ± 0.02	96-hou/hol	320.00	1.000	2.30 ± 0.02	96-hou/hol
300.00	1.000	2.40 ± 0.01	96-hou/hol	323.15	0.330	6.70 ± 0.60	94-mce/fan
303.15	0.292	6.80 ± 0.80	94-mce/fan	323.15	0.483	5.00 ± 0.50	94-mce/fan
303.15	0.499	5.70 ± 0.70	94-mce/fan	323.15	0.624	4.00 ± 0.40	94-mce/fan
303.15	0.595	4.80 ± 0.60	94-mce/fan	333.15	0.331	6.30 ± 0.60	94-mce/fan
313.15	0.269	7.50 ± 0.80	94-mce/fan	333.15	0.512	5.30 ± 0.50	94-mce/fan
313.15	0.471	5.70 ± 0.70	94-mce/fan	333.15	0.699	3.90 ± 0.40	94-mce/fan
313.15	0.612	4.40 ± 0.60	94-mce/fan	343.15	0.488	4.80 ± 0.50	94-mce/fan
320.00	0.000	9.70 ± 0.02	96-hou/hol				

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	4.5 ± 0.30	88-jae/aud	313.15	4.4 ± 1.00	95-bla/wei
273.15	4.3 ± 1.00	95-bla/wei	313.15	3.5 ± 0.35	94-mce/fan
283.15	4.6 ± 1.00	95-bla/wei	320.00	3.6 ± 0.40	96-hou/hol
293.15	4.1 ± 0.30	88-jae/aud	323.15	4.1 ± 1.00	95-bla/wei
293.15	4.7 ± 1.00	95-bla/wei	323.15	3.6 ± 0.35	94-mce/fan
300.00	3.8 ± 0.40	96-hou/hol	333.15	3.5 ± 0.30	88-jae/aud
303.15	3.5 ± 0.35	94-mce/fan	333.15	3.5 ± 0.35	94-mce/fan
303.15	4.6 ± 1.00	95-bla/wei	333.15	3.7 ± 1.00	95-bla/wei
313.15	3.7 ± 0.30	88-jae/aud			

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	7.1 ± 0.7	88-jae/aud	313.15	6.8 ± 0.3	94-mce/fan
273.15	8.0 ± 1.0	95-bla/wei	313.15	3.5 ± 1.0	95-bla/wei
283.15	5.8 ± 1.0	95-bla/wei	320.00	5.9 ± 0.4	96-hou/hol
293.15	6.8 ± 0.7	88-jae/aud	323.15	6.3 ± 0.3	94-mce/fan
293.15	4.4 ± 1.0	95-bla/wei	323.15	3.9 ± 1.0	95-bla/wei
300.00	6.8 ± 0.4	96-hou/hol	333.15	5.7 ± 0.7	88-jae/aud
303.15	7.2 ± 0.3	94-mce/fan	333.15	6.2 ± 0.3	94-mce/fan
303.15	3.6 ± 1.0	95-bla/wei	333.15	4.8 ± 1.0	95-bla/wei
313.15	6.4 ± 0.7	88-jae/aud			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **578**
Ethanol **[64-17-5]** **C_2H_6O** **MW = 46.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-122 ± 2	73-gup/les	348.15	-84 ± 10	73-gup/les
323.15	-107 ± 3	73-gup/les			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **579**
Propene **[115-07-1]** **C_3H_6** **MW = 42.08**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-124.9 ± 0.8	81-ohg/miz	398.15	-64.3 ± 0.3	82-ohg/nak-1

Methane **[74-82-8]** **CH_4** **MW = 16.04** **580**
Propanone **[67-64-1]** **C_3H_6O** **MW = 58.08**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
223.15	-360 ± 17	81-hic/pra	273.10	-183 ± 30	93-sch/lan
246.20	-231 ± 40	93-sch/lan	273.15	-191 ± 13	81-hic/pra
248.15	-242 ± 15	81-hic/pra	323.15	-84 ± 12	81-hic/pra
261.70	-189 ± 35	93-sch/lan			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **581**
Propane **[74-98-6]** **C_3H_8** **MW = 44.10**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.4877 \cdot 10^2 - 8.3334 \cdot 10^4/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
225	-221.6 ± 15	300	-129.0 ± 8	400	-59.6 ± 5
250	-184.6 ± 10	350	-89.3 ± 6		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
225.00	-228.1 ± 15	-6.5	96-tru/wak(□)	290.70	-139.0 ± 10	-1.1	79-wor/lew(▲)
243.20	-192.0 ± 13	1.9	79-wor/lew(▲)	293.15	-136.2 ± 4	-0.7	88-jae/aud(◇)
245.20	-187.0 ± 11	4.1	79-wor/lew(▲)	298.15	-139.0 ± 8	-8.3	68-dan/kno-1(■)
250.00	-185.4 ± 12	-0.8	96-tru/wak(□)	300.00	-127.0 ± 10	2.0	96-tru/wak(□)
250.80	-180.0 ± 14	3.5	79-wor/lew(▲)	302.20	-127.0 ± 6	0.0	79-wor/lew(▲)
253.20	-176.0 ± 9	4.4	79-wor/lew(▲)	313.15	-116.9 ± 3	0.4	88-jae/aud(◇)
261.20	-166.0 ± 10	4.3	79-wor/lew(▲)	323.15	-116.0 ± 8	-6.9	68-dan/kno-1(■)
263.60	-168.0 ± 11	-0.6	79-wor/lew(▲)	325.00	-106.3 ± 9	1.3	96-tru/wak(□)
273.15	-156.6 ± 4	-0.3	88-jae/aud(◇)	333.15	-98.8 ± 3	2.6	88-jae/aud(◇)
273.20	-156.0 ± 10	0.3	79-wor/lew(▲)	348.15	-93.0 ± 11	-2.4	68-dan/kno-1(■)
275.00	-152.7 ± 10	1.6	96-tru/wak(□)	350.00	-89.2 ± 6	0.1	96-tru/wak(□)
281.20	-148.0 ± 8	-0.4	79-wor/lew(▲)	373.15	-75.0 ± 11	-0.4	68-dan/kno-1(■)
288.70	-136.2 ± 5	3.7	61-mas/eak(◆)	375.00	-74.8 ± 5	-1.3	96-tru/wak(□)

cont.

Methane + Propane (cont.)

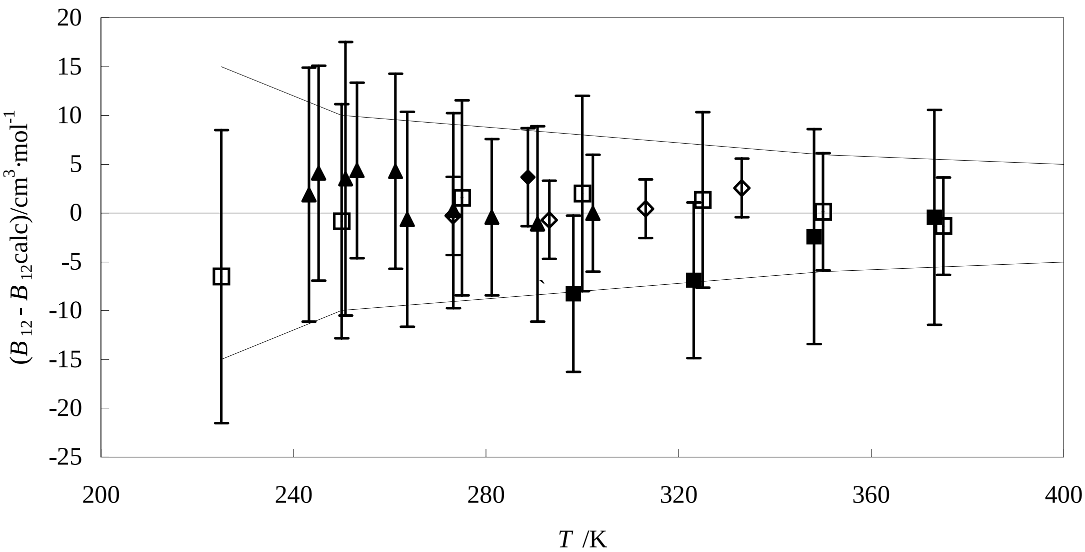

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	X_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
377.60	0.500	-109.5 ± 5	63-bar/lin	477.60	0.500	-59.4 ± 5	63-bar/lin
410.90	0.500	-89.6 ± 5	63-bar/lin	510.90	0.500	-47.4 ± 5	63-bar/lin
444.30	0.500	-73.6 ± 5	63-bar/lin				

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	82 ± 2	68-dan/kno-1	348.15	0.500	58 ± 1	68-dan/kno-1
323.15	0.500	66 ± 2	68-dan/kno-1	373.15	0.500	53 ± 1	68-dan/kno-1

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
225.00	6.2 ± 0.5	96-tru/wak	313.15	5.3 ± 0.7	88-jae/aud
250.00	5.8 ± 0.5	96-tru/wak	325.00	4.3 ± 0.4	96-tru/wak
273.15	6.8 ± 0.7	88-jae/aud	333.15	4.4 ± 0.7	88-jae/aud
275.00	5.2 ± 0.5	96-tru/wak	350.00	4.0 ± 0.4	96-tru/wak
293.15	6.1 ± 0.7	88-jae/aud	375.00	3.7 ± 0.3	96-tru/wak
300.00	4.8 ± 0.5	96-tru/wak			

cont.

Methane + Propane (cont.)

Table 7. Experimental C_{122} values with uncertainty.

T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
225.00	5.9 ± 0.5	96-tru/wak	313.15	11.3 ± 1.9	88-jae/aud
250.00	9.7 ± 0.6	96-tru/wak	325.00	9.0 ± 0.7	96-tru/wak
273.15	9.4 ± 1.9	88-jae/aud	333.15	11.0 ± 1.9	88-jae/aud
275.00	10.3 ± 0.8	96-tru/wak	350.00	8.3 ± 0.7	96-tru/wak
293.15	10.7 ± 1.9	88-jae/aud	375.00	7.6 ± 0.6	96-tru/wak
300.00	9.8 ± 0.8	96-tru/wak			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **582**
Octafluorocyclobutane **[115-25-3]** **C_4F_8** **MW = 200.03**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	-167.1 ± 14.0	92-bel/big	310.00	-141.7 ± 13.0	92-bel/big
300.00	-150.7 ± 14.0	92-bel/big			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
290.00	0.500	278.2 ± 1	92-bel/big	310.00	0.500	230.5 ± 1	92-bel/big
300.00	0.500	255.8 ± 1	92-bel/big				

Methane **[74-82-8]** **CH_4** **MW = 16.04** **583**
Decafluorobutane **[355-25-9]** **C_4F_{10}** **MW = 238.03**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-128 ± 6	71-dan/kno			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **584**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.2142 \cdot 10^2 - 8.5890 \cdot 10^4/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
275	-190.9 ± 10	350	-124.0 ± 10	500	-50.4 ± 6
300	-164.9 ± 10	400	-93.3 ± 8	600	-21.7 ± 5

cont.

Methane + Butane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
273.15	-205.0 ± 6	-12.0	88-jae/aud(□)	373.40	-97.0 ± 22	11.6	79-wor/lew(Δ)
277.00	-198.0 ± 21	-9.3	79-wor/lew(Δ)	383.20	-93.0 ± 13	9.7	79-wor/lew(Δ)
284.20	-184.0 ± 17	-3.2	79-wor/lew(Δ)	394.30	-87.0 ± 14	9.4	79-wor/lew(Δ)
288.70	-175.1 ± 8	1.0	61-mas/eak(●)	398.20	-89.3 ± 4	5.0	76-pom/spu(■)
289.00	-179.0 ± 18	-3.2	79-wor/lew(Δ)	423.20	-81.6 ± 1	-0.1	42-bea/sto(◆)
293.15	-173.5 ± 5	-1.9	88-jae/aud(□)	423.20	-74.8 ± 3	6.7	76-pom/spu(■)
298.15	-183.0 ± 12	-16.3	68-dan/kno-1(▲)	448.20	-69.4 ± 1	0.8	42-bea/sto(◆)
303.20	-161.0 ± 14	0.9	79-wor/lew(Δ)	448.20	-61.8 ± 5	8.4	76-pom/spu(■)
306.50	-155.0 ± 12	3.8	79-wor/lew(Δ)	473.20	-60.4 ± 0.9	-0.3	42-bea/sto(◆)
313.15	-149.6 ± 5	3.3	88-jae/aud(□)	473.20	-53.4 ± 5	6.7	76-pom/spu(■)
314.20	-162.0 ± 25	-10.1	79-wor/lew(Δ)	498.20	-51.2 ± 0.9	-0.2	42-bea/sto(◆)
323.15	-150.0 ± 12	-5.6	68-dan/kno-1(▲)	498.20	-42.7 ± 6	8.3	76-pom/spu(■)
328.70	-124.0 ± 12	15.9	79-wor/lew(Δ)	523.20	-42.0 ± 0.9	0.7	42-bea/sto(◆)
333.15	-133.2 ± 4	3.2	88-jae/aud(□)	523.20	-37.7 ± 7	5.0	76-pom/spu(■)
348.15	-122.0 ± 11	3.3	68-dan/kno-1(▲)	548.20	-35.2 ± 0.8	0.1	42-bea/sto(◆)
348.20	-131.3 ± 4	-6.1	76-pom/spu(■)	548.20	-35.0 ± 5	0.3	76-pom/spu(■)
373.15	-100.0 ± 11	8.8	68-dan/kno-1(▲)	573.20	-29.2 ± 0.8	-0.8	42-bea/sto(◆)
373.20	-106.5 ± 4	2.2	76-pom/spu(■)	573.20	-22.8 ± 8	5.6	76-pom/spu(■)

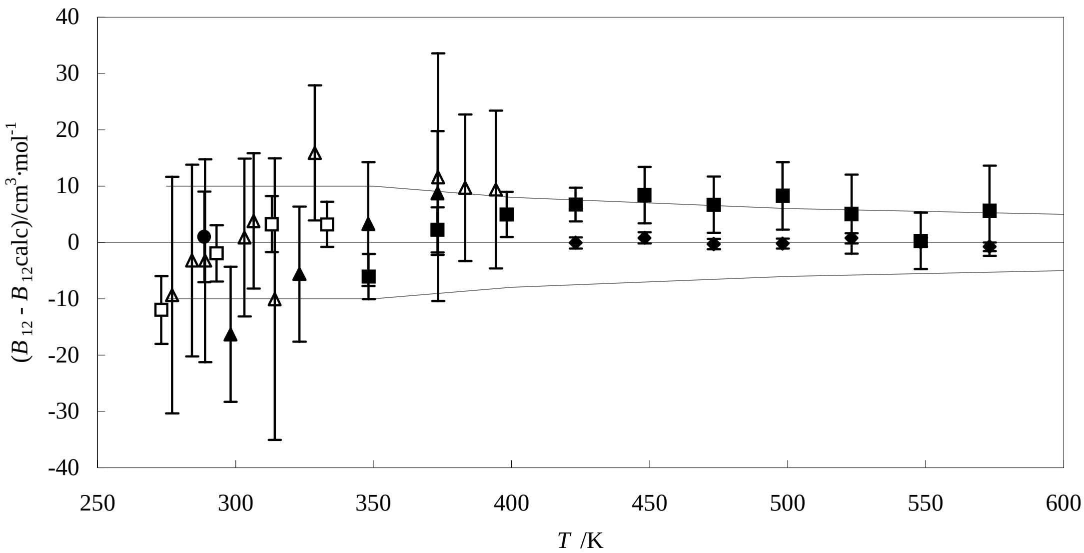

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Methane + Butane (cont.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	204 ± 2	68-dan/kno-1	348.15	0.500	142 ± 1	68-dan/kno-1
323.15	0.500	164 ± 2	68-dan/kno-1	373.15	0.500	124 ± 1	68-dan/kno-1

Table 6. Experimental C_{112} values with uncertainty.

T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	10.8 ± 1	88-jae/aud	313.15	6.8 ± 1	88-jae/aud
293.15	7.9 ± 1	88-jae/aud	333.15	7.5 ± 1	88-jae/aud

Methane **[74-82-8]** **CH_4** **MW = 16.04** **585**
2-Methylpropane **[75-28-5]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	-158.7 ± 5.0	61-mas/eak			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **586**
1-Butanol **[71-36-3]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-160 ± 12	73-mas/kin			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **587**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-161 ± 3	73-mas/kin			

Methane	**[74-82-8]**	**CH_4**	**MW = 16.04**	**588**
Tetramethylsilane	**[75-76-3]**	**$C_4H_{12}Si$**	**MW = 88.22**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 9.2031 · 10 – 7.6809 · 10^4/(T/K)

T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}
300	-164.0 ± 15	400	-100.0 ± 10	550	-47.6 ± 10
350	-127.4 ± 10	450	-78.7 ± 10		

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{exp} ± δB cm^3· mol^{-1}	B_{exp} - B_{calc} cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	B_{exp} ± δB cm^3· mol^{-1}	B_{exp} - B_{calc} cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
300.00	-210.5 ± 30	-46.5	74-bel/rei(■)	383.16	-97.0 ± 10	11.4	55-ham/lam(▲)
320.00	-168.0 ± 30	-20.0	74-bel/rei(■)	400.00	-102.6 ± 30	-2.6	74-bel/rei(■)
323.16	-145.0 ± 10	1	55-ham/lam(▲)	403.16	-86.0 ± 10	12.5	55-ham/lam(▲)
333.16	-134.0 ± 10	4.5	55-ham/lam(▲)	430.00	-84.4 ± 30	2.2	74-bel/rei(■)
340.00	-149.0 ± 30	-15.1	74-bel/rei(■)	460.00	-68.2 ± 30	6.7	74-bel/rei(■)
343.16	-124.0 ± 10	7.8	55-ham/lam(▲)	490.00	-59.0 ± 30	5.7	74-bel/rei(■)
353.16	-111.0 ± 10	14.5	55-ham/lam(▲)	520.00	-50.0 ± 30	5.7	74-bel/rei(■)
363.16	-106.0 ± 10	13.5	55-ham/lam(▲)	550.00	-40.6 ± 30	7.0	74-bel/rei(■)
370.00	-123.5 ± 30	-7.9	74-bel/rei(■)				

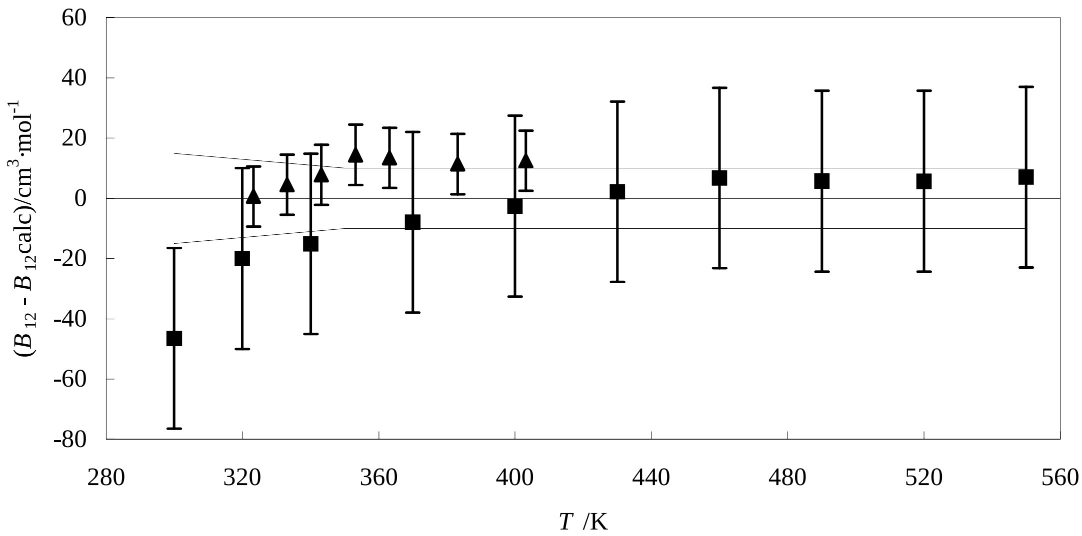

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Methane + Tetramethylsilane (cont.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
323.16	0.000	-34.6 ± 3	55-ham/lam	353.16	0.568	-310.0 ± 30	55-ham/lam
323.16	0.246	-131.0 ± 13	55-ham/lam	353.16	0.799	-534.0 ± 50	55-ham/lam
323.16	0.334	-187.0 ± 18	55-ham/lam	353.16	1.000	-784.0 ± 80	55-ham/lam
323.16	0.568	-389.0 ± 40	55-ham/lam	363.16	0.000	-24.2 ± 3	55-ham/lam
323.16	0.799	-656.0 ± 65	55-ham/lam	363.16	0.246	-99.0 ± 10	55-ham/lam
323.16	1.000	-956.0 ± 100	55-ham/lam	363.16	0.334	-141.0 ± 15	55-ham/lam
333.16	0.000	-31.8 ± 3	55-ham/lam	363.16	0.568	-292.0 ± 30	55-ham/lam
333.16	0.246	-121.0 ± 12	55-ham/lam	363.16	0.799	-506.0 ± 50	55-ham/lam
333.16	0.334	-173.0 ± 17	55-ham/lam	363.16	1.000	-737.0 ± 70	55-ham/lam
333.16	0.568	-358.0 ± 35	55-ham/lam	383.16	0.000	-19.5 ± 3	55-ham/lam
333.16	0.799	-610.0 ± 60	55-ham/lam	383.16	0.246	-87.0 ± 10	55-ham/lam
333.16	1.000	-886.0 ± 90	55-ham/lam	383.16	0.334	-122.0 ± 12	55-ham/lam
343.16	0.000	-29.1 ± 3	55-ham/lam	383.16	0.568	-258.0 ± 25	55-ham/lam
343.16	0.246	-114.0 ± 10	55-ham/lam	383.16	0.799	-449.0 ± 45	55-ham/lam
343.16	0.334	-162.0 ± 15	55-ham/lam	383.16	1.000	-649.0 ± 65	55-ham/lam
343.16	0.568	-336.0 ± 30	55-ham/lam	403.16	0.000	-15.4 ± 3	55-ham/lam
343.16	0.799	-568.0 ± 55	55-ham/lam	403.16	0.246	-76.0 ± 8	55-ham/lam
343.16	1.000	-831.0 ± 80	55-ham/lam	403.16	0.334	-108.0 ± 10	55-ham/lam
353.16	0.000	-26.6 ± 3	55-ham/lam	403.16	0.568	-229.0 ± 20	55-ham/lam
353.16	0.246	-107.0 ± 10	55-ham/lam	403.16	0.799	-402.0 ± 40	55-ham/lam
353.16	0.334	-151.0 ± 15	55-ham/lam	403.16	1.000	-580.0 ± 60	55-ham/lam

Methane **[74-82-8]** **CH_4** **MW = 16.04** **589**
Dodecafluoropentane **[678-26-2]** **C_5F_{12}** **MW = 288.04**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.15	-95 ± 10	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
373.15	0.500	311 ± 5	71-dan/kno				

Methane **[74-82-8]** **CH_4** **MW = 16.04** **590**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -5.3644 \cdot 10^2 + 3.9304 \cdot 10^5/(T/K) - 8.9133 \cdot 10^7/(T/K)^2$$

cont.

Methane + Pentane (cont.)

Table 1. (cont.)

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
275	-285.8 ± 15	350	-141.1 ± 10		
300	-216.7 ± 10	400	-110.9 ± 10		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp}-B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ cm^3· mol^{-1}	$B_{exp}-B_{calc}$ cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
273.15	-285 ± 15	7.2	88-jae/aud(□)	333.20	-163 ± 18	-3.3	79-wor/lew(◆)
288.70	-270 ± 11	-25.6	61-mas/eak(Δ)	343.40	-150 ± 17	-2.3	79-wor/lew(◆)
293.15	-242 ± 13	-9.1	88-jae/aud(□)	348.15	-148 ± 12	-5.1	68-dan/kno-1(■)
298.15	-222 ± 13	-1.1	68-dan/kno-1(■)	353.20	-139 ± 15	-0.9	79-wor/lew(◆)
298.15	-170 ± 12	50.9	73-mas/kin[1]	363.20	-121 ± 16	9.0	79-wor/lew(◆)
298.20	-204 ± 42	16.8	68-pec/win(▲)	373.15	-122 ± 12	1.3	68-dan/kno-1(■)
313.15	-198 ± 10	-7.7	88-jae/aud(□)	373.20	-125 ± 14	-1.8	79-wor/lew(◆)
318.50	-178 ± 20	3.1	79-wor/lew(◆)	383.40	-121 ± 15	-3.3	79-wor/lew(◆)
323.15	-190 ± 12	-16.3	68-dan/kno-1(■)	393.20	-120 ± 17	-6.6	79-wor/lew(◆)
323.20	-138 ± 30	35.6	68-pec/win(▲)	403.50	-105 ± 14	4.8	79-wor/lew(◆)
333.15	-153 ± 8	6.8	88-jae/aud(□)				

[1] Not included in Figure 1.

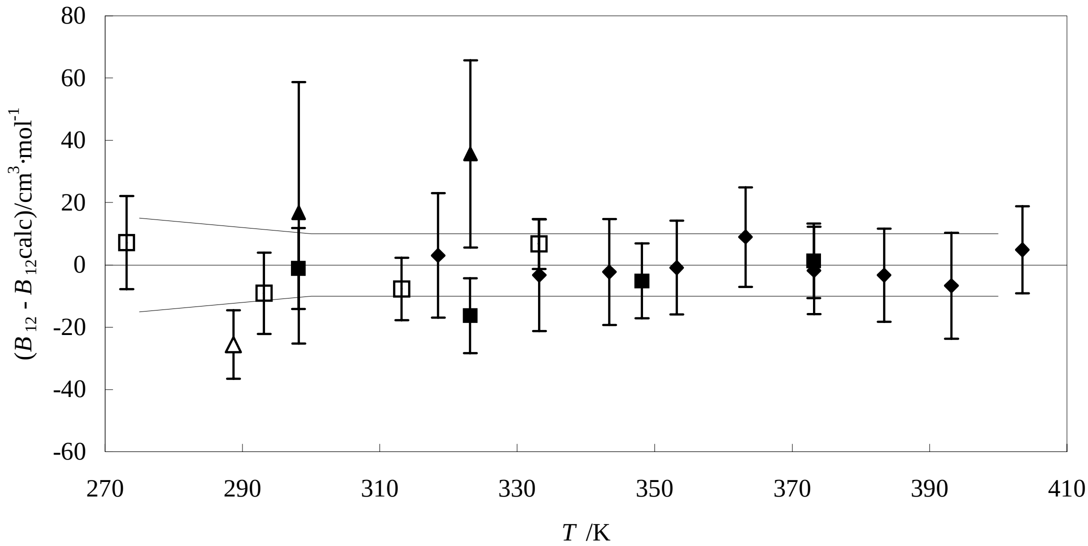

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.
298.15	0.500	397 ± 3	68-dan/kno-1	348.15	0.500	270 ± 2	68-dan/kno-1
323.15	0.500	320 ± 2	68-dan/kno-1	373.15	0.500	232 ± 2	68-dan/kno-1

cont.

Methane + Pentane (cont.)

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	13.1 ± 1.2	88-jae/aud	313.15	10.4 ± 1.2	88-jae/aud
293.15	11.8 ± 1.2	88-jae/aud	333.15	9.0 ± 1.2	88-jae/aud

Methane [74-82-8] CH_4 MW = 16.04 591
2-Methylbutane [78-78-4] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	-220 ± 5	61-mas/eak	323.20	-123 ± 36	68-pec/win
298.20	-199 ± 43	68-pec/win			

Methane [74-82-8] CH_4 MW = 16.04 592
2,2-Dimethylpropane [463-82-1] C_5H_{12} MW = 72.15

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.3314 \cdot 10^2 - 8.4264 \cdot 10^4/(T/K) - 3.3841 \cdot 10^6/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
220	-319.8 ± 20	300	-185.3 ± 20	500	-48.9 ± 15
250	-258.1 ± 20	400	-98.7 ± 20	550	-31.3 ± 15

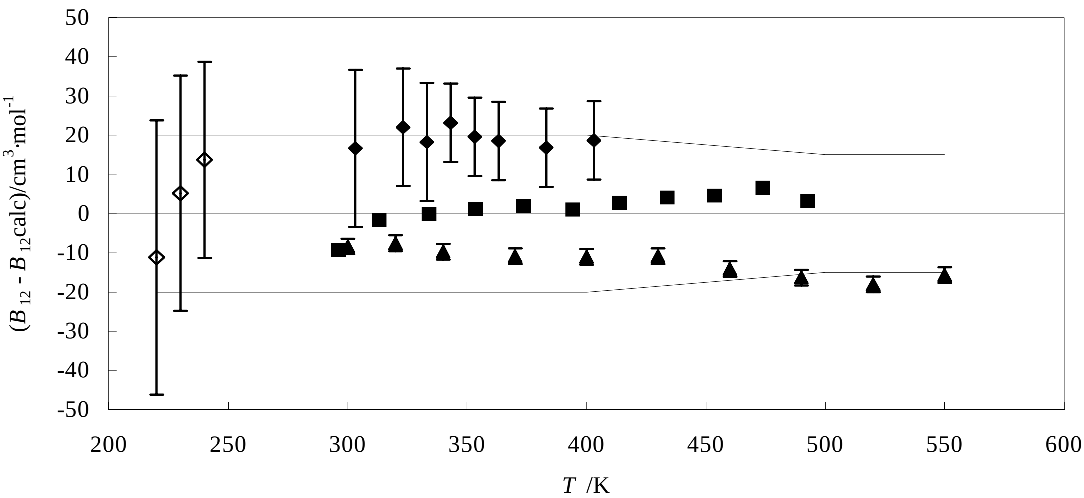

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

cont.

Methane + 2,2-Dimethylpropane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
199.99	-434.0 ± 45	-61.2	75-bau/wes[1]	353.50	-131.1 ± 1	1.2	71-str/lic(■)
210.00	-374.0 ± 40	-29.1	75-bau/wes[1]	363.16	-106.0 ± 10	18.5	55-ham/lam(◆)
220.00	-331.0 ± 35	-11.2	75-bau/wes(◇)	370.00	-130.2 ± 2	-10.9	74-bel/rei(▲)
230.00	-292.0 ± 30	5.2	75-bau/wes(◇)	373.60	-114.7 ± 1	2.0	71-str/lic(■)
240.00	-263.0 ± 25	13.7	75-bau/wes(◇)	383.16	-93.0 ± 10	16.8	55-ham/lam(◆)
249.99	-223.0 ± 20	35.1	75-bau/wes[1]	394.30	-101.3 ± 1	1.0	71-str/lic(■)
257.90	-188.0 ± 20	56.5	75-bau/wes[1]	400.00	-109.7 ± 2	-11.0	74-bel/rei(▲)
296.15	-199.2 ± 2	-9.2	71-str/lic(■)	403.16	-78.0 ± 10	18.7	55-ham/lam(◆)
300.00	-193.7 ± 2	-8.4	74-bel/rei(▲)	413.80	-87.5 ± 1	2.8	71-str/lic(■)
303.16	-165.0 ± 20	16.6	55-ham/lam(◆)	430.00	-92.0 ± 2	-10.9	74-bel/rei(▲)
313.20	-172.0 ± 2	-1.6	71-str/lic(■)	433.80	-75.0 ± 1	4.1	71-str/lic(■)
320.00	-170.8 ± 2	-7.6	74-bel/rei(▲)	453.60	-64.5 ± 1	4.6	71-str/lic(■)
323.16	-138.0 ± 15	22.0	55-ham/lam(◆)	460.00	-80.2 ± 2	-14.2	74-bel/rei(▲)
333.16	-132.0 ± 15	18.3	55-ham/lam(◆)	473.80	-53.2 ± 1	6.6	71-str/lic(■)
334.00	-149.6 ± 1	-0.1	71-str/lic(■)	490.00	-69.2 ± 2	-16.3	74-bel/rei(▲)
340.00	-153.7 ± 2	-9.7	74-bel/rei(▲)	492.60	-48.7 ± 1	3.2	71-str/lic(■)
343.15	-118.0 ± 10	23.2	55-ham/lam(◆)	520.00	-59.5 ± 2	-18.1	74-bel/rei(▲)
353.16	-113.0 ± 10	19.6	55-ham/lam(◆)	550.00	-46.9 ± 2	-15.6	74-bel/rei(▲)

[1] Not included in Figure 1.

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
303.16	0.000	-41.6 ± 1	55-ham/lam	353.16	0.000	-26.6 ± 1	55-ham/lam
303.16	0.180	-109.0 ± 5	55-ham/lam	353.16	0.180	-72.0 ± 5	55-ham/lam
303.16	0.357	-197.0 ± 10	55-ham/lam	353.16	0.357	-139.0 ± 8	55-ham/lam
303.16	0.608	-401.0 ± 20	55-ham/lam	353.16	0.608	-283.0 ± 15	55-ham/lam
303.16	0.696	-473.0 ± 25	55-ham/lam	353.16	0.696	-338.0 ± 17	55-ham/lam
303.16	1.000	-842.0 ± 40	55-ham/lam	353.16	1.000	-602.0 ± 30	55-ham/lam
323.16	0.000	-34.6 ± 1	55-ham/lam	363.16	0.000	-24.2 ± 1	55-ham/lam
323.16	0.180	-90.0 ± 5	55-ham/lam	363.16	0.180	-67.0 ± 3	55-ham/lam
323.16	0.357	-170.0 ± 10	55-ham/lam	363.16	0.357	130.0 ± 6	55-ham/lam
323.16	0.608	-344.0 ± 15	55-ham/lam	363.16	0.608	-265.0 ± 13	55-ham/lam
323.16	0.696	-414.0 ± 20	55-ham/lam	363.16	0.696	-319.0 ± 16	55-ham/lam
323.16	1.000	-734.0 ± 40	55-ham/lam	363.16	1.000	-566.0 ± 20	55-ham/lam
333.16	0.000	-31.8 ± 1	55-ham/lam	383.16	0.000	-19.5 ± 1	55-ham/lam
333.16	0.180	-84.0 ± 4	55-ham/lam	383.16	0.180	-59.0 ± 3	55-ham/lam
333.16	0.357	-161.0 ± 8	55-ham/lam	383.16	0.357	-114.0 ± 6	55-ham/lam
333.16	0.608	-325.0 ± 15	55-ham/lam	383.16	0.608	-236.0 ± 12	55-ham/lam
333.16	0.696	-385.0 ± 20	55-ham/lam	383.16	0.696	-284.0 ± 14	55-ham/lam
333.16	1.000	-686.0 ± 40	55-ham/lam	383.16	1.000	-507.0 ± 20	55-ham/lam
343.16	0.000	-29.1 ± 1	55-ham/lam	403.16	0.000	-15.4 ± 1	55-ham/lam
343.16	0.180	-76.0 ± 5	55-ham/lam	403.16	0.180	-48.0 ± 3	55-ham/lam
343.16	0.357	-149.0 ± 8	55-ham/lam	403.16	0.357	-102.0 ± 5	55-ham/lam
343.16	0.608	-299.0 ± 15	55-ham/lam	403.16	0.608	-208.0 ± 10	55-ham/lam
343.16	0.698	-361.0 ± 20	55-ham/lam	403.16	0.696	-249.0 ± 12	55-ham/lam
343.16	1.000	-643.0 ± 40	55-ham/lam	403.16	1.000	-452.0 ± 20	55-ham/lam

Methane [74-82-8] CH_4 MW = 16.04 593
Tetradecafluorohexane [355-42-0] C_6F_{14} MW = 338.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
323.15	-90 ± 10	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / cm³· mol⁻¹	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / cm³· mol⁻¹	Ref.
373.15	0.500	484 ± 7	71-dan/kno				

Methane [74-82-8] CH_4 MW = 16.04 594
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
323.15	-155 ± 15	68-eve/gai	383.20	-127 ± 10	96-zha/sat
323.20	-171 ± 3	69-coa/kin	393.20	-120 ± 10	96-zha/sat
363.20	-144 ± 10	96-zha/sat	403.20	-107 ± 10	96-zha/sat
373.20	-135 ± 10	96-zha/sat	413.20	-98 ± 20	96-zha/sat

Methane [74-82-8] CH_4 MW = 16.04 595
2,5-Hexanedione [110-13-4] $C_6H_{10}O_2$ MW = 114.14

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
503.15	-48 ± 6	78-kau/pra	545.15	43 ± 4	78-kau/pra

Methane [74-82-8] CH_4 MW = 16.04 596
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
363.20	-135 ± 10	77-wor	393.20	-120 ± 10	77-wor
373.20	-126 ± 10	77-wor	403.20	-90 ± 20	77-wor
383.20	-115 ± 10	77-wor	413.20	-86 ± 15	77-wor

Methane **[74-82-8]** CH_4 **MW = 16.04** **597**
Hexane **[110-54-3]** C_6H_{14} **MW = 86.18**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 3.0763 · 10^2 – 1.6881 · 10^5/(T/K)

T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}
275	-306.2 ± 15	350	-174.7 ± 10		
300	-255.1 ± 10	400	-114.4 ± 10		

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
273.15	-302 ± 9	8.4	88-jae/aud(▲)	343.20	-180 ± 27	4.2	79-wor/lew(■)
293.15	-270 ± 8	-1.8	88-jae/aud(▲)	348.15	-180 ± 11	-2.8	68-dan/kno-1(◆)
298.15	-261 ± 14	-2.4	68-dan/kno-1(◆)	363.20	-144 ± 24	13.2	79-wor/lew(■)
298.20	-292 ± 55	-33.5	68-pec/win[1]	373.15	-145 ± 11	-0.2	68-dan/kno-1(◆)
313.15	-238 ± 7	-6.6	88-jae/aud(▲)	373.20	-139 ± 23	5.7	79-wor/lew(■)
323.15	-225 ± 13	-10.2	68-dan/kno-1(◆)	383.20	-134 ± 21	-1.1	79-wor/lew(■)
323.20	-280 ± 54	-65.3	68-pec/win[1]	389.20	-124 ± 32	2.1	79-wor/lew(■)
333.15	-206 ± 6	-6.9	88-jae/aud(▲)	407.70	-108 ± 20	-1.6	79-wor/lew(■)

[1] Not included in Figure 1.

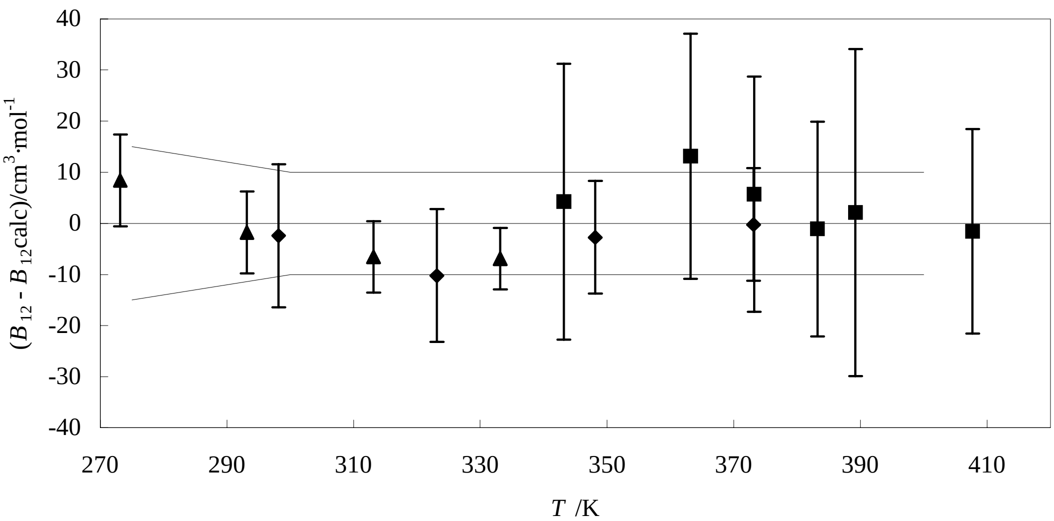

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	B^E ± δB^E / cm^3· mol^{-1}	Ref.	T/K	x_1	B^E ± δB^E / cm^3· mol^{-1}	Ref.
298.15	0.500	720 ± 40	68-dan/kno-1	348.15	0.500	454 ± 1	68-dan/kno-1
323.15	0.500	557 ± 5	68-dan/kno-1	373.15	0.500	381 ± 2	68-dan/kno-1

Methane [74-82-8] CH_4 MW = 16.04 598
2-Methylpentane [107-83-5] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-317 ± 42	68-pec/win	323.20	-144 ± 34	68-pec/win

Methane [74-82-8] CH_4 MW = 16.04 599
2,2-Dimethylbutane [75-83-2] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.30	-216 ± 42	68-pec/win	323.20	-154 ± 29	68-pec/win

Methane [74-82-8] CH_4 MW = 16.04 600
Diisopropyl ether [108-20-3] $C_6H_{14}O$ MW = 102.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
223.15	-550 ± 64	81-hic/pra	273.15	-293 ± 26	81-hic/pra
248.15	-405 ± 20	81-hic/pra	323.15	-147 ± 12	81-hic/pra

Methane [74-82-8] CH_4 MW = 16.04 601
Toluene [108-88-3] C_7H_8 MW = 92.14

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
242.60	-446 ± 25	93-sch/lan	282.70	-277 ± 25	93-sch/lan
262.00	-355 ± 15	93-sch/lan			

Methane [74-82-8] CH_4 MW = 16.04 602
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -1.6715 \cdot 10^2 + 1.4053 \cdot 10^5/(T/K) - 5.3187 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
250	-456.0 ± 25	350	-199.8 ± 10	420	-134.1 ± 10
300	-289.7 ± 15	400	-148.2 ± 10		

cont.

Methane + Heptane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp}-B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
246.20	-508 ± 30	-34.2	93-sch/lan(◆)	333.15	-228 ± 7	-3.5	88-jae/aud(■)
261.70	-404 ± 20	2.8	93-sch/lan(◆)	389.20	-162 ± 26	-4.8	79-wor/lew(▲)
273.10	-365 ± 15	0.7	93-sch/lan(◆)	390.20	-157 ± 26	-0.7	79-wor/lew(▲)
273.15	-359 ± 10	6.5	88-jae/aud(■)	405.70	-127 ± 26	16.9	79-wor/lew(▲)
293.15	-305 ± 9	1.7	88-jae/aud(■)	408.20	-135 ± 35	7.1	79-wor/lew(▲)
313.15	-261 ± 8	-0.2	88-jae/aud(■)	413.30	-131 ± 33	7.5	79-wor/lew(▲)

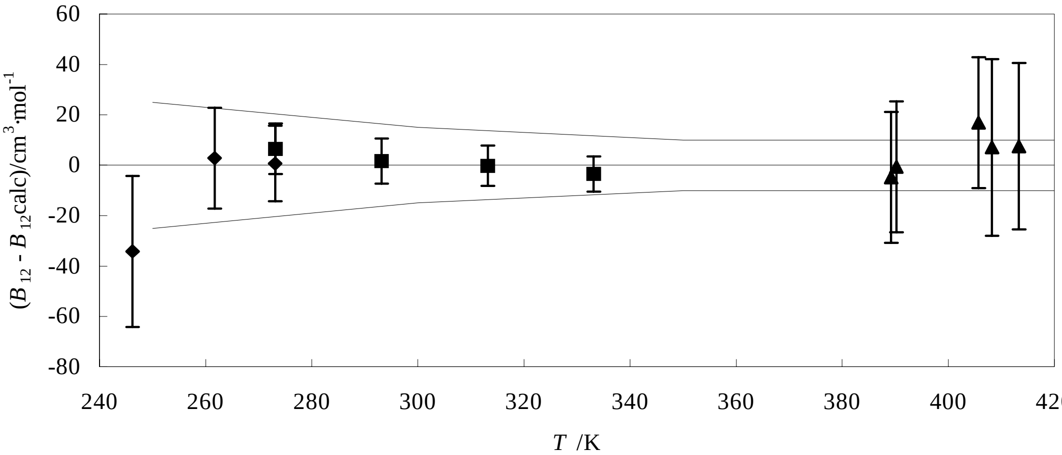

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Methane [74-82-8] CH_4 MW = 16.04 603
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-403.6 ± 12	88-jae/aud	333.15	-254.1 ± 8	88-jae/aud
293.15	-342.3 ± 11	88-jae/aud	410.20	-151 ± 38	79-wor/lew
313.15	-292.5 ± 9	88-jae/aud	418.30	-150 ± 32	79-wor/lew

Methane [74-82-8] CH_4 MW = 16.04 604
2,5,8,11-Tetraoxadodecane [112-49-2] $C_8H_{18}O_4$ MW = 178.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.20	-290 ± 10	76-dav/kau	398.20	-200 ± 10	76-dav/kau
373.20	-248 ± 10	76-dav/kau	423.20	-164 ± 10	76-dav/kau

Methane [74-82-8] CH_4 MW = 16.04 605
Nonane [111-84-2] C_9H_{20} MW = 128.26

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
246.20	-620 ± 30	93-sch/lan	273.10	-464 ± 30	93-sch/lan
261.70	-476 ± 40	93-sch/lan			

Methane [74-82-8] CH_4 MW = 16.04 606
2,2,5-Trimethylhexane [3522-94-9] C_9H_{20} MW = 128.26

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-243 ± 10	76-dav/kau	348.20	-169 ± 10	76-dav/kau
323.20	-200 ± 10	76-dav/kau	373.20	-144 ± 10	76-dav/kau

Methane [74-82-8] CH_4 MW = 16.04 607
Naphthalene [91-20-3] $C_{10}H_8$ MW = 128.17

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
294.00	-363 ± 11	66-naj/kin	333.00	-243 ± 11	66-naj/kin
296.20	-321 ± 10	62-kin/rob	341.00	-243 ± 11	66-naj/kin
307.00	-314 ± 12	66-naj/kin	342.20	-196 ± 6	62-kin/rob
307.00	-324 ± 18	66-naj/kin	348.20	-176 ± 6	62-kin/rob
327.00	-257 ± 11	66-naj/kin			

Methane [74-82-8] CH_4 MW = 16.04 608
(1,1-Dimethylethyl)benzene [98-06-6] $C_{10}H_{14}$ MW = 134.22

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-224 ± 10	76-dav/kau	373.20	-158 ± 10	76-dav/kau
348.20	-179 ± 10	76-dav/kau	398.20	-120 ± 10	76-dav/kau

Methane [74-82-8] CH_4 MW = 16.04 609
Decane [124-18-5] $C_{10}H_{22}$ MW = 142.28

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.20	-289 ± 10	76-dav/kau	373.20	-181 ± 10	76-dav/kau
348.20	-232 ± 10	76-dav/kau	398.20	-134 ± 10	76-dav/kau

Methane **[74-82-8]** **CH_4** **MW = 16.04** **610**
1-Methylnaphthalene **[90-12-0]** **$C_{11}H_{10}$** **MW = 142.20**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-205 ± 10	78-kau/pra	448.15	-91 ± 10	78-kau/pra
398.15	-146 ± 10	78-kau/pra			

Methane **[74-82-8]** **CH_4** **MW = 16.04** **611**
Bicyclohexyl **[92-51-3]** **$C_{12}H_{22}$** **MW = 166.31**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-299 ± 15	78-kau/pra	403.15	-104 ± 10	78-kau/pra
363.15	-223 ± 10	78-kau/pra	443.15	-96 ± 10	78-kau/pra

Methane **[74-82-8]** **CH_4** **MW = 16.04** **612**
Diphenylmethane **[101-81-5]** **$C_{13}H_{12}$** **MW = 168.24**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
338.15	-295 ± 15	78-kau/pra	408.15	-237 ± 10	78-kau/pra
373.15	-268 ± 12	78-kau/pra	443.15	-176 ± 10	78-kau/pra

Methane **[74-82-8]** **CH_4** **MW = 16.04** **613**
Phenanthrene **[85-01-8]** **$C_{14}H_{10}$** **MW = 178.23**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.00	-443 ± 13	70-bra/kin	359.00	-331 ± 13	70-bra/kin
320.00	-445 ± 13	70-bra/kin	361.00	-287 ± 13	70-bra/kin
327.00	-427 ± 13	70-bra/kin	363.00	-298 ± 13	70-bra/kin
329.00	-390 ± 13	70-bra/kin	365.00	-296 ± 13	70-bra/kin
334.00	-372 ± 13	70-bra/kin	368.00	-290 ± 13	70-bra/kin
340.00	-372 ± 13	70-bra/kin	371.00	-293 ± 13	70-bra/kin
348.00	-341 ± 13	70-bra/kin	380.00	-270 ± 13	70-bra/kin
352.00	-308 ± 13	70-bra/kin	395.00	-240 ± 13	70-bra/kin
356.00	-340 ± 13	70-bra/kin	411.00	-203 ± 13	70-bra/kin

Methane [74-82-8] CH_4 MW = 16.04 **614**
Anthracene [120-12-7] $C_{14}H_{10}$ MW = 178.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
339.00	-326 ± 12	70-naj/kin	382.00	-256 ± 12	70-naj/kin
346.00	-324 ± 12	70-naj/kin	396.00	-235 ± 12	70-naj/kin
348.00	-291 ± 12	70-naj/kin	407.00	-204 ± 12	70-naj/kin
350.00	-316 ± 12	70-naj/kin	423.00	-198 ± 12	70-naj/kin
355.00	-314 ± 12	70-naj/kin	445.00	-177 ± 12	70-naj/kin
362.00	-290 ± 12	70-naj/kin	449.00	-208 ± 12	70-naj/kin
369.00	-269 ± 12	70-naj/kin	458.00	-174 ± 12	70-naj/kin
373.00	-292 ± 12	70-naj/kin			

Methane [74-82-8] CH_4 MW = 16.04 **615**
Hexadecane [544-76-3] $C_{16}H_{34}$ MW = 226.45

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.20	-371 ± 15	78-kau/pra	423.20	-170 ± 10	78-kau/pra
373.20	-260 ± 14	78-kau/pra	448.20	-103 ± 10	78-kau/pra
398.20	-214 ± 12	78-kau/pra			

Methane [74-82-8] CH_4 MW = 16.04 **616**
Eicosane [112-95-8] $C_{20}H_{42}$ MW = 282.55

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
438.20	-214 ± 10	78-kau/pra	508.20	-103 ± 10	78-kau/pra
473.20	-149 ± 10	78-kau/pra	543.20	-56 ± 5	78-kau/pra

Methane [74-82-8] CH_4 MW = 16.04 **617**
2,6,10,15,19,23-Hexamethyltetracosane
[111-01-3] $C_{30}H_{62}$ MW = 422.82

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
503.20	-48 ± 6	78-kau/pra	545.20	43 ± 4	78-kau/pra

Methanol **[67-56-1]** **CH_4O** **MW = 32.04** **618**
Ethene **[74-85-1]** **C_2H_4** **MW = 28.05**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.15	-279 ± 6	72-hem/kin	311.46	-719 ± 22	71-rae/fre
298.15	-247 ± 6	72-hem/kin	323.15	-192 ± 6	72-hem/kin
303.78	-872 ± 26	71-rae/fre	333.15	-179 ± 4	72-hem/kin
310.15	-213 ± 7	72-hem/kin	333.36	-685 ± 20	71-rae/fre

Methanol **[67-56-1]** **CH_4O** **MW = 32.04** **619**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
267.20	-376 ± 8	80-laz/bre	310.15	-234 ± 4	72-hem/kin
278.20	-331 ± 17	80-laz/bre	323.15	-220 ± 7	72-hem/kin
288.15	-306 ± 5	72-hem/kin	333.15	-203 ± 7	72-hem/kin
298.15	-276 ± 8	72-hem/kin			

Methanol **[67-56-1]** **CH_4O** **MW = 32.04** **620**
Methyl ethanoate **[79-20-9]** **$C_3H_6O_2$** **MW = 74.08**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
393.25	-569.7 ± 40.0	89-olf/sch	423.15	-476.8 ± 40.0	89-olf/sch
393.55	-595.0 ± 40.0	89-olf/sch	423.15	-449.4 ± 40.0	89-olf/sch
402.65	-524.1 ± 40.0	89-olf/sch	433.15	-431.5 ± 40.0	89-olf/sch
403.25	-564.1 ± 40.0	89-olf/sch	433.15	-444.9 ± 40.0	89-olf/sch
413.25	-482.5 ± 40.0	89-olf/sch			

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
393.25	0.541	-547.1 ± 30	89-olf/sch	423.15	0.548	-439.6 ± 25	89-olf/sch
393.55	0.552	-556.7 ± 30	89-olf/sch	423.15	0.504	-435.4 ± 25	89-olf/sch
402.65	0.517	-507.9 ± 30	89-olf/sch	433.15	0.515	-408.7 ± 25	89-olf/sch
403.25	0.528	-524.2 ± 30	89-olf/sch	433.15	0.504	-417.9 ± 25	89-olf/sch
413.25	0.517	-466.3 ± 30	89-olf/sch				

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
393.15	0.550	-37.4 ± 10	89-olf/sch	402.65	0.517	-10.7 ± 5	89-olf/sch
393.55	0.552	-24.2 ± 20	89-olf/sch	403.25	0.528	10.3 ± 5	89-olf/sch

cont.

Methanol + Methyl ethanoate (cont.)

Table 5. (cont.)

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
413.25	0.517	26.0 ± 5	89-olf/sch	433.15	0.515	46.5 ± 5	89-olf/sch
423.25	0.548	52.0 ± 5	89-olf/sch	433.15	0.504	69.0 ± 5	89-olf/sch
423.15	0.504	44.0 ± 5	89-olf/sch				

Methanol [67-56-1] CH_4O MW = 32.04 621
Diethyl ether [60-29-7] $C_4H_{10}O$ MW = 74.12

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
398.15	-370.9 ± 40.0	89-olf/sch	413.35	-312.0 ± 40.0	89-olf/sch
398.25	-390.6 ± 40.0	89-olf/sch	433.35	-235.5 ± 30.0	89-olf/sch
413.35	-287.3 ± 40.0	89-olf/sch	433.45	-217.3 ± 30.0	89-olf/sch

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
398.15	0.4580	-432.0 ± 30	89-olf/sch	413.35	0.4677	-362.8 ± 30	89-olf/sch
398.25	0.4622	-441.0 ± 30	89-olf/sch	433.35	0.4741	-308.0 ± 30	89-olf/sch
413.35	0.4647	-375.6 ± 30	89-olf/sch	433.45	0.4824	-297.3 ± 30	89-olf/sch

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
398.15	0.485	-78.8 ± 10	89-olf/sch	413.35	0.468	-75.4 ± 8	89-olf/sch
398.25	0.462	-43.5 ± 8	89-olf/sch	433.35	0.474	-90.1 ± 8	89-olf/sch
413.35	0.465	-48.5 ± 8	89-olf/sch	433.45	0.482	-103.7 ± 10	89-olf/sch

Methanol [67-56-1] CH_4O MW = 32.04 622
Pentane [109-66-0] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.69	-1019 ± 31	71-rae/fre	313.00	-950 ± 28	71-rae/fre

Methanol **[67-56-1]** **CH_4O** **MW = 32.04** **623**
Pentylamine **[110-58-7]** **$C_5H_{13}N$** **MW = 87.16**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.15	-1201 ± 160	89-abu/ver	363.15	-1200 ± 160	89-abu/ver

Methanol **[67-56-1]** **CH_4O** **MW = 32.04** **624**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 6.4967 \cdot 10 + 9.8356 \cdot 10^3/(T/K) - 6.7332 \cdot 10^7/(T/K)^2$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
350	-456.6 ± 20	450	-245.7 ± 10	550	-139.7 ± 10
400	-331.3 ± 10	500	-184.7 ± 10	600	-105.7 ± 10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
313.15	-545 ± 52	45.2	68-kno/edm[1]	423.15	-286 ± 4	1.8	88-pie/ope(◆)
313.15	-823 ± 5	-232.8	73-koh/ope[1]	423.20	-288 ± 15	-0.3	97-wor/sow-1(■)
333.15	-507 ± 52	5.2	68-kno/edm[1]	433.20	-272 ± 20	-0.9	97-wor/sow-1(■)
333.15	-522 ± 5	-9.8	73-koh/ope[1]	448.15	-245 ± 5	3.3	88-pie/ope(◆)
353.15	-319 ± 52	128.1	68-kno/edm[1]	473.15	-209 ± 6	6.0	88-pie/ope(◆)
353.15	-340 ± 5	107.1	73-koh/ope[1]	473.20	-218 ± 15	-3.1	97-wor/sow-1(■)
363.20	-424 ± 30	-5.6	97-wor/sow-1(■)	483.20	-207 ± 15	-3.9	97-wor/sow-1(■)
368.20	-409 ± 30	-4.0	97-wor/sow-1(■)	493.20	-196 ± 15	-4.1	97-wor/sow-1(■)
373.15	-281 ± 52	111.2	68-kno/edm[1]	498.15	-180 ± 6	6.6	88-pie/ope(◆)
373.15	-236 ± 5	156.2	73-koh/ope[1]	503.20	-186 ± 15	-4.6	97-wor/sow-1(■)
373.15	-386 ± 4	6.2	88-pie/ope(◆)	513.20	-177 ± 15	-5.5	97-wor/sow-1(■)
373.20	-395 ± 25	-2.9	97-wor/sow-1(■)	523.15	-156 ± 6	6.3	88-pie/ope(◆)
378.20	-382 ± 20	-2.2	97-wor/sow-1(■)	523.20	-168 ± 10	-5.8	97-wor/sow-1(■)
383.20	-370 ± 20	-2.1	97-wor/sow-1(■)	548.15	-136 ± 6	5.2	88-pie/ope(◆)
393.20	-346 ± 20	-0.5	97-wor/sow-1(■)	573.15	-121 ± 6	1.8	88-pie/ope(◆)
398.15	-334 ± 3	1.1	88-pie/ope(◆)	598.15	-104 ± 3	2.8	88-pie/ope(◆)
403.20	-325 ± 15	-0.2	97-wor/sow-1(■)	623.15	-94 ± 3	-1.4	88-pie/ope(◆)
413.20	-306 ± 15	-0.4	97-wor/sow-1(■)				

[1] Not included in Figure 1.

cont.

Methanol + Benzene (cont.)

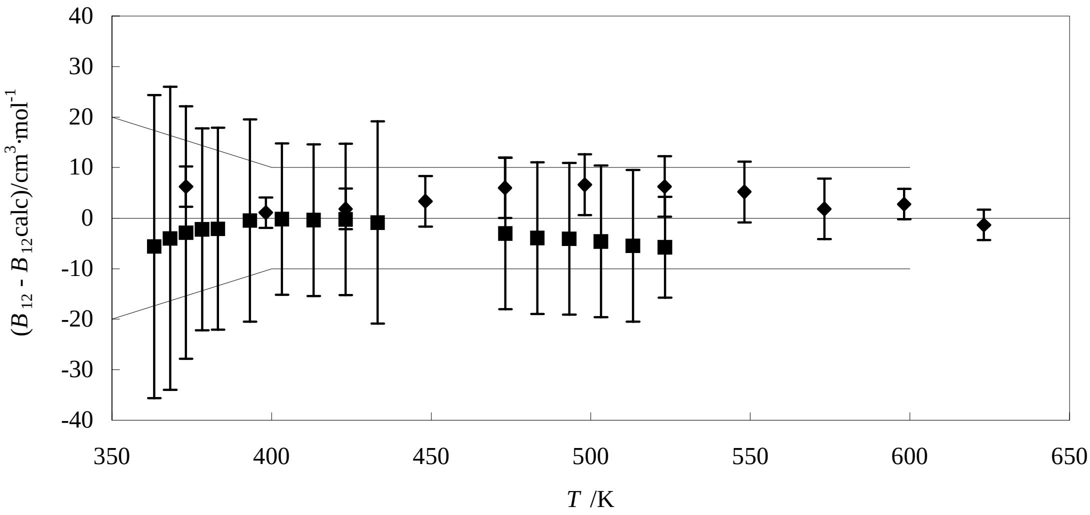

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Methanol **[67-56-1]** **CH_4O** **MW = 32.04** **625**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 9.6586 · 10 – 4.5832 · 10^4/(T/K) – 3.4819 · 10^7/(T/K)^2

T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}
350	-318.6 ± 30	450	-177.2 ± 20	550	-101.8 ± 10
400	-235.6 ± 25	500	-134.4 ± 15		

Table 2. Experimental B_{12} values with uncertainty.

T / K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T / K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
363.20	-294 ± 30	-0.4	77-wor/sow(◆)	423.20	-206 ± 20	0.1	77-wor/sow(◆)
368.20	-285 ± 30	-0.3	77-wor/sow(◆)	433.20	-195 ± 20	-0.2	77-wor/sow(◆)
373.20	-276 ± 25	0.2	77-wor/sow(◆)	473.20	-156 ± 15	-0.2	77-wor/sow(◆)
378.20	-268 ± 25	0.0	77-wor/sow(◆)	483.20	-147 ± 15	0.4	77-wor/sow(◆)
383.20	-260 ± 25	0.1	77-wor/sow(◆)	493.20	-140 ± 15	-0.5	77-wor/sow(◆)
393.20	-245 ± 20	0.2	77-wor/sow(◆)	503.20	-132 ± 10	0.0	77-wor/sow(◆)
403.20	-231 ± 20	0.3	77-wor/sow(◆)	513.20	-125 ± 10	-0.1	77-wor/sow(◆)
413.20	-218 ± 20	0.3	77-wor/sow(◆)	523.20	-118 ± 10	0.2	77-wor/sow(◆)

cont.

Methanol + Cyclohexane (cont.)

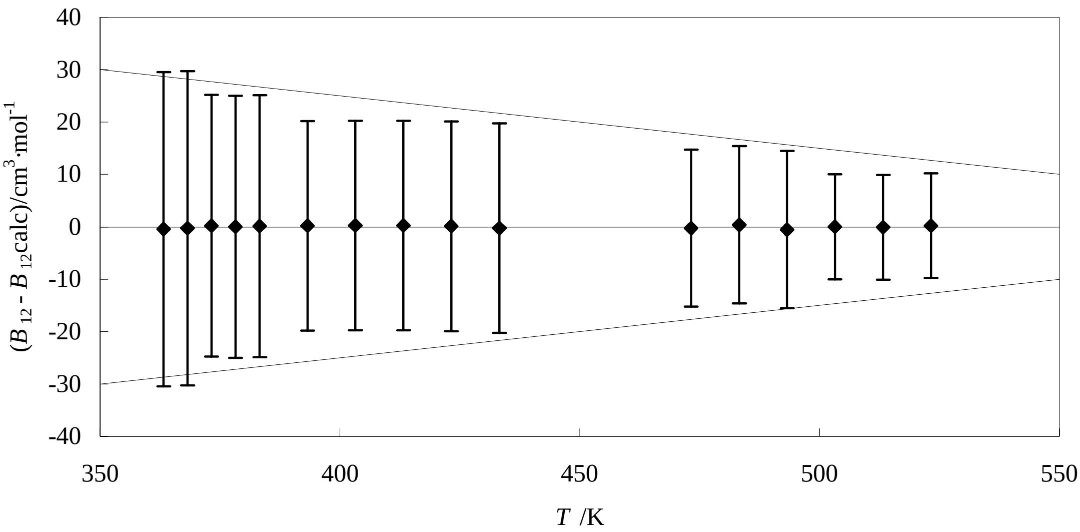

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Methanol	**[67-56-1]**	**CH_4O**	**MW = 32.04**	**626**
Hexane	**[110-54-3]**	**C_6H_{14}**	**MW = 86.18**	

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = -2.7957 \cdot 10^2 + 3.3896 \cdot 10^5/(T/K) - 1.2459 \cdot 10^8/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
350	-328.2 ± 30	450	-141.6 ± 25	550	-75.1 ± 25
400	-210.9 ± 25	500	-100.0 ± 25	600	-60.7 ± 25

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
348.03	-347 ± 29	-12.8	96-hen/vog(◆)	496.93	-103 ± 25	-1.0	96-hen/vog(◆)
374.27	-242 ± 27	21.3	96-hen/vog(◆)	525.61	-77 ± 24	8.7	96-hen/vog(◆)
397.43	-212 ± 26	3.5	96-hen/vog(◆)	548.51	-69 ± 24	6.7	96-hen/vog(◆)
422.26	-179 ± 26	-3.4	96-hen/vog(◆)	574.25	-70 ± 29	-2.9	96-hen/vog(◆)
446.94	-157 ± 25	-12.1	96-hen/vog(◆)	599.45	-65 ± 29	-4.2	96-hen/vog(◆)
473.96	-123 ± 25	-4.0	96-hen/vog(◆)				

cont.

Methanol + Hexane (cont.)

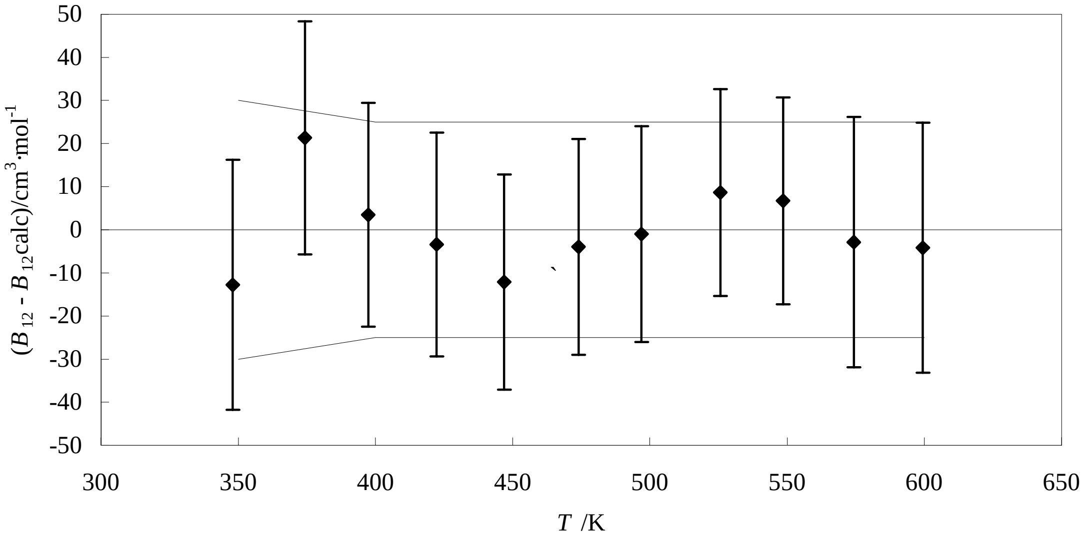

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Hexafluoroethane **[76-16-4]** **C_2F_6** **MW = 138.01** **627**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-145.0 ± 5.0	71-dan/kno	373.15	-90.0 ± 5.0	71-dan/kno

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	33 ± 1	71-dan/kno	373.15	0.500	28 ± 1	71-dan/kno

Hexafluoroethane **[76-16-4]** **C_2F_6** **MW = 138.01** **628**
Octafluoropropane **[76-19-7]** **C_3F_8** **MW = 188.02**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-299 ± 20	69-dan/kno	373.15	-192 ± 15	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	18 ± 1	69-dan/kno	373.15	0.500	14 ± 1	69-dan/kno

Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01 629
Decafluorobutane [355-25-9] C_4F_{10} MW = 238.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-388 ± 23	69-dan/kno	373.15	-254 ± 23	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	84 ± 2	69-dan/kno	373.15	0.500	52 ± 2	69-dan/kno

Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01 630
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-282 ± 7	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	114 ± 1	71-dan/kno				

Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01 631
Dodecafluoropentane [678-26-2] C_5F_{12} MW = 288.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-482 ± 30	69-dan/kno	373.15	-314 ± 25	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	212 ± 4	69-dan/kno	373.15	0.500	143 ± 5	69-dan/kno

Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01 632
Pentane [109-66-0] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-353 ± 10	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	233 ± 2	71-dan/kno				

Hexafluoroethane [76-16-4] C_2F_6 MW = 138.01 633
Tetradecafluorohexane [355-42-0] C_6F_{14} MW = 338.04

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-536 ± 40	69-dan/kno	373.15	-354 ± 30	69-dan/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	420 ± 12	69-dan/kno	373.15	0.500	272 ± 8	69-dan/kno

Pentafluoroethane [354-33-6] C_2HF_5 MW = 120.02 634
1,1,1,2-Tetrafluoroethane [811-97-2] $C_2H_2F_4$ MW = 102.03

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-337.0 ± 2	94-web/def	353.15	-263.7 ± 2	94-web/def
338.15	-296.7 ± 2	94-web/def	373.15	-227.9 ± 2	94-web/def

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	-349.3 ± 0.5	94-web/def	353.15	0.500	-273.9 ± 0.5	94-web/def
338.15	0.500	-306.9 ± 0.5	94-web/def	373.15	0.500	-237.4 ± 0.5	94-web/def

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
323.15	0.500	33.2 ± 0.5	94-web/def	353.15	0.500	25.7 ± 0.5	94-web/def
338.15	0.500	28.2 ± 0.5	94-web/def	373.15	0.500	22.9 ± 0.5	94-web/def

Pentafluoroethane [354-33-6] C_2HF_5 MW = 120.02 635
1,1,1-Trifluoroethane [420-46-2] $C_2H_3F_3$ MW = 84.04

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
333.15	-280.0 ± 5.0	94-web/def	363.15	-230.6 ± 2.0	94-web/def
343.15	-267.6 ± 2.8	94-web/def	373.15	-214.4 ± 2.0	94-web/def
353.15	-246.2 ± 2.4	94-web/def			

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
333.15	0.510	-298.0 ± 1.0	94-web/def	363.15	0.510	-234.6 ± 1.0	94-web/def
343.15	0.510	-271.8 ± 1.0	94-web/def	373.15	0.510	-219.1 ± 1.0	94-web/def
353.15	0.510	-241.2 ± 1.0	94-web/def				

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
343.15	0.510	27.3 ± 1.0	94-web/def	363.15	0.510	23.5 ± 1.0	94-web/def
353.15	0.510	24.5 ± 1.0	94-web/def	373.15	0.510	22.3 ± 1.0	94-web/def

1,1,1,2-Tetrafluoroethane [811-97-2] $C_2H_2F_4$ MW = 102.03 636
1,1-Difluoroethane [75-37-6] $C_2H_4F_2$ MW = 66.05

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.15	-330.1 ± 1.0	94-web/def	373.15	-285.0 ± 1.0	94-web/def

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
353.15	0.503	-326.4 ± 0.5	94-web/def	373.15	0.503	-282.0 ± 0.5	94-web/def

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
353.15	0.503	31.8 ± 1.0	94-web/def	373.15	0.503	28.8 ± 1.0	94-web/def

1,1,1,2-Tetrafluoroethane [811-97-2] $C_2H_2F_4$ MW = 102.03 **637**
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
299.93	-308.4 ± 5	95-mce	328.15	-252.8 ± 5	95-mce
299.93	-308.8 ± 5	95-mce	328.15	-252.1 ± 5	95-mce
313.15	-280.0 ± 5	95-mce	343.15	-228.3 ± 5	95-mce
313.15	-280.8 ± 5	95-mce	343.15	-228.3 ± 5	95-mce

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
299.93	0.50	124.6 ± 1.5	95-mce	328.15	0.50	96.3 ± 1.5	95-mce
299.93	0.50	124.2 ± 1.5	95-mce	328.15	0.50	97.0 ± 1.5	95-mce
313.15	0.50	110.2 ± 1.5	95-mce	343.15	0.50	85.6 ± 1.5	95-mce
313.15	0.50	109.4 ± 1.5	95-mce	343.15	0.50	85.6 ± 1.5	95-mce

Acetonitrile [75-05-8] C_2H_3N MW = 41.05 **638**
Ethanal [75-07-0] C_2H_4O MW = 44.05

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.15	-8710 ± 150	60-pra/car	353.15	-3450 ± 150	60-pra/car
333.15	-6170 ± 150	60-pra/car	373.15	-2390 ± 150	60-pra/car

Acetonitrile [75-05-8] C_2H_3N MW = 41.05 **639**
Propanone [67-64-1] C_3H_6O MW = 58.08

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-2465 ± 100	78-die/pat			

Acetonitrile [75-05-8] C_2H_3N MW = 41.05 **640**
Methyl ethanoate [79-20-9] $C_3H_6O_2$ MW = 74.08

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-2280 ± 100	78-die/pat	419.95	-576 ± 60	89-olf/sch
393.35	-746 ± 60	89-olf/sch	419.95	-606 ± 60	89-olf/sch
406.65	-663 ± 60	89-olf/sch	433.15	-538 ± 60	89-olf/sch
406.65	-665 ± 60	89-olf/sch			

cont.

Acetonitrile + Methyl ethanoate (cont.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
393.35	0.509	-943.3 ± 50	89-olf/sch	419.35	0.534	-742.0 ± 50	89-olf/sch
406.65	0.513	-831.3 ± 50	89-olf/sch	419.95	0.513	-741.0 ± 50	89-olf/sch
406.65	0.532	-848.4 ± 50	89-olf/sch	433.15	0.499	-650.7 ± 50	89-olf/sch

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
393.35	0.509	366.7 ± 60	89-olf/sch	419.35	0.534	265.3 ± 60	89-olf/sch
406.65	0.513	365.5 ± 60	89-olf/sch	419.95	0.513	230.7 ± 60	89-olf/sch
406.65	0.532	354.8 ± 60	89-olf/sch	433.15	0.499	163.3 ± 60	89-olf/sch

Acetonitrile [75-05-8] C_2H_3N MW = 41.05 641
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.15	-250 ± 20	98-war	413.12	-173 ± 15	98-war
393.12	-208 ± 20	98-war	433.11	-143 ± 15	98-war

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
373.15	0.049	-421.1 ± 3	98-war	413.12	0.049	-330.5 ± 3	98-war
373.15	0.223	-447.9 ± 3	98-war	413.12	0.107	-322.1 ± 3	98-war
393.12	0.049	-371.3 ± 3	98-war	413.12	0.223	-334.3 ± 3	98-war
393.12	0.107	-364.8 ± 3	98-war	413.12	0.616	-638.5 ± 3	98-war
393.12	0.223	-382.7 ± 3	98-war	413.12	0.740	-821.1 ± 3	98-war
393.12	0.616	-747.4 ± 3	98-war	433.11	0.107	-287.3 ± 3	98-war
393.12	0.740	-956.3 ± 3	98-war	433.11	0.242	-296.2 ± 3	98-war

Table 5. Experimental C_m values with uncertainty.

T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
373.15	0.049	48.3 ± 5.0	98-war	413.12	0.049	34.6 ± 3.5	98-war
373.15	0.223	31.1 ± 3.0	98-war	413.12	0.107	24.1 ± 2.5	98-war
393.12	0.049	40.9 ± 4.0	98-war	413.12	0.223	20.8 ± 2.0	98-war
393.12	0.107	31.8 ± 3.0	98-war	413.12	0.616	314.3 ± 31.0	98-war
393.12	0.223	25.9 ± 2.5	98-war	413.12	0.740	562.3 ± 56.0	98-war
393.12	0.616	332.8 ± 33.0	98-war	433.11	0.107	12.6 ± 1.3	98-war
393.12	0.740	621.9 ± 62.0	98-war	433.11	0.242	13.3 ± 1.3	98-war

Acetonitrile **[75-05-8]** **C_2H_3N** **MW = 41.05** **642**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
326.00	-1020 ± 50	54-lam/mur	349.00	-850 ± 50	54-lam/mur

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **643**
Ethane **[74-84-0]** **C_2H_6** **MW = 30.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-157.3 ± 1.2	81-ohg/miz			

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
283.15	0.36	-182.8 ± 10.3	93-mce/fan	313.15	0.32	-150.2 ± 9.0	93-mce/fan
283.15	0.64	-173.8 ± 10.0	93-mce/fan	313.15	0.65	-138.8 ± 8.6	93-mce/fan
293.15	0.37	-172.3 ± 9.9	93-mce/fan	323.15	0.38	-136.3 ± 8.4	93-mce/fan
293.15	0.80	-154.0 ± 9.2	93-mce/fan	323.15	0.65	-126.6 ± 8.1	93-mce/fan
303.15	0.39	-158.0 ± 9.3	93-mce/fan	333.15	0.31	-132.5 ± 8.3	93-mce/fan
303.15	0.78	-142.3 ± 8.7	93-mce/fan	333.15	0.67	-120.8 ± 7.8	93-mce/fan

Table 5. Experimental C_m values with uncertainty.

T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_1	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
283.15	0.363	8.3 ± 0.8	93-mce/fan	313.15	0.323	8.4 ± 0.8	93-mce/fan
283.15	0.639	9.2 ± 0.9	93-mce/fan	313.15	0.651	8.0 ± 0.8	93-mce/fan
293.15	0.373	9.7 ± 0.9	93-mce/fan	323.15	0.375	6.9 ± 0.8	93-mce/fan
293.15	0.797	8.7 ± 0.8	93-mce/fan	323.15	0.651	6.5 ± 0.7	93-mce/fan
303.15	0.392	8.9 ± 0.8	93-mce/fan	333.15	0.310	8.3 ± 0.8	93-mce/fan
303.15	0.776	7.7 ± 0.8	93-mce/fan	333.15	0.665	7.4 ± 0.8	93-mce/fan

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **644**
Ethanol **[64-17-5]** **C_2H_6O** **MW = 46.07**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-243 ± 10	73-gup/les			

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **645**
Propene **[115-07-1]** **C_3H_6** **MW = 42.08**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-220.9 ± 1.2	81-ohg/miz	398.15	-117.8 ± 0.6	82-ohg/nak-1

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **646**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-282 ± 5	69-coa/kin			

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **647**
Naphthalene **[91-20-3]** **$C_{10}H_8$** **MW = 128.17**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
296.2	-666 ± 25	62-kin/rob	326.0	-553 ± 12	66-naj/kin
296.5	-693 ± 6	66-naj/kin	333.0	-520 ± 12	66-naj/kin
298.0	-681 ± 10	66-naj/kin	337.2	-491 ± 10	62-kin/rob
308.0	-629 ± 9	66-naj/kin	342.5	-481 ± 12	66-naj/kin
312.5	-577 ± 23	66-naj/kin			

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **648**
1-Methylnaphthalene **[90-12-0]** **$C_{11}H_{10}$** **MW = 142.20**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-571 ± 20	78-kau/pra	448.15	-235 ± 15	78-kau/pra
398.15	-381 ± 16	78-kau/pra			

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **649**
Bicyclohexyl **[92-51-3]** **$C_{12}H_{22}$** **MW = 166.37**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-607 ± 25	78-kau/pra	443.15	-257 ± 12	78-kau/pra
383.15	-432 ± 25	78-kau/pra			

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **650**
Diphenylmethane **[101-81-5]** **$C_{13}H_{12}$** **MW = 168.24**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
338.15	-645	±	27	78-kau/pra	448.15	-293	±	10	78-kau/pra
393.15	-416	±	22	78-kau/pra					

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **651**
Phenanthrene **[85-01-8]** **$C_{14}H_{10}$** **MW = 178.23**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
310.00	-884	±	24	70-bra/kin	349.00	-623	±	24	70-bra/kin
315.00	-817	±	24	70-bra/kin	350.00	-639	±	24	70-bra/kin
317.00	-827	±	24	70-bra/kin	357.00	-607	±	24	70-bra/kin
321.00	-855	±	24	70-bra/kin	358.00	-593	±	24	70-bra/kin
323.00	-786	±	24	70-bra/kin	361.00	-605	±	24	70-bra/kin
326.00	-751	±	24	70-bra/kin	367.00	-548	±	24	70-bra/kin
329.00	-814	±	24	70-bra/kin	380.00	-528	±	24	70-bra/kin
334.00	-734	±	24	70-bra/kin	395.00	-462	±	24	70-bra/kin
345.00	-674	±	24	70-bra/kin	415.00	-385	±	24	70-bra/kin
347.00	-659	±	24	70-bra/kin					

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **652**
Anthracene **[120-12-7]** **$C_{14}H_{10}$** **MW = 178.23**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
338.00	-686	±	12	70-naj/kin	423.00	-386	±	12	70-naj/kin
348.00	-657	±	12	70-naj/kin	445.00	-356	±	12	70-naj/kin
373.00	-552	±	12	70-naj/kin	453.00	-352	±	12	70-naj/kin
398.00	-448	±	12	70-naj/kin					

Ethene **[74-85-1]** **C_2H_4** **MW = 28.05** **653**
Hexadecane **[544-76-3]** **$C_{16}H_{34}$** **MW = 226.45**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$			Ref.
348.15	-735	±	32	78-kau/pra	448.15	-357	±	20	78-kau/pra
398.15	-524	±	31	78-kau/pra					

Oxirane **[75-21-8]** **C_2H_4O** **MW = 44.05** **654**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-692 ± 40	66-str-3	348.15	-468 ± 50	66-str-3
323.15	-562 ± 40	66-str-3	368.15	-441 ± 35	66-str-3

Methyl methanoate **[107-31-3]** **$C_2H_4O_2$** **MW = 60.05** **655**
Propyl methanoate **[110-74-7]** **$C_4H_8O_2$** **MW = 88.11**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-1133 ± 40	67-str-4	348.15	-799 ± 43	67-str-4
323.15	-1145 ± 5	67-str-4	373.15	-655 ± 46	67-str-4

Bromoethane **[74-96-4]** **C_2H_5Br** **MW = 108.97** **656**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
293.10	-1356 ± 38	65-rae/bit	313.10	-1160 ± 78	65-rae/bit

Bromoethane **[74-96-4]** **C_2H_5Br** **MW = 108.97** **657**
Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.10	-945 ± 25	65-rae/bit			

Chloroethane **[75-00-3]** **C_2H_5Cl** **MW = 64.51** **658**
1-Chloropropane **[540-54-5]** **C_3H_7Cl** **MW = 78.54**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	-803 ± 26	68-rae	333.20	-683 ± 12	68-rae
313.20	-774 ± 16	68-rae			

Chloroethane [75-00-3] C_2H_5Cl MW = 64.51 **659**
2-Chloro-2-methylpropane [507-20-0] C_4H_9Cl MW = 92.57

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
313.20	-712 ± 10	68-rae	333.20	-591 ± 13	68-rae

Nitroethane [79-24-3] $C_2H_5NO_2$ MW = 75.07 **660**
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.21	0.500	1954 ± 150	83-mar/rog	348.38	0.500	893 ± 50	83-mar/rog
298.28	0.500	2145 ± 150	83-mar/rog	348.38	0.500	839 ± 50	83-mar/rog
323.16	0.500	1206 ± 60	83-mar/rog	348.39	0.500	947 ± 50	83-mar/rog
323.17	0.500	1210 ± 60	83-mar/rog				

Ethane [74-84-0] C_2H_6 MW = 30.07 **661**
Ethanol [64-17-5] C_2H_6O MW = 46.07

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-276 ± 13	73-gup/les	348.15	-190 ± 7	73-gup/les
323.15	-200 ± 7	73-gup/les			

Ethane [74-84-0] C_2H_6 MW = 30.07 **662**
Propene [115-07-1] C_2H_6 MW = 42.08

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-245.6 ± 1.4	81-ohg/miz	444.30	-102.7 ± 10.0	58-gun
377.60	-146.3 ± 15.0	58-gun	477.60	-82.3 ± 10.0	58-gun
410.90	-120.7 ± 15.0	58-gun			

Ethane [74-84-0] C_2H_6 MW = 30.07 **663**
Propane [74-98-6] C_3H_8 MW = 44.10

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$B_{12}/cm^3 \cdot mol^{-1} = 2.7832 \cdot 10^2 - 1.6449 \cdot 10^5/(T/K)$

cont.

Ethane + Propane (cont.)

Table 1. (cont.)

T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}
275	-319.8 ± 5	350	-191.7 ± 3		
300	-270.0 ± 4	375	-160.3 ± 2		

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
273.15	-327 ± 30	-2.6	88-jae/aud(◇)	320.72	-237 ± 1	-2.5	88-fon/mar(▲)
273.92	-322 ± 1	0.2	88-fon/mar(▲)	320.73	-239 ± 1	-4.0	88-fon/mar(▲)
275.17	-323 ± 1	-3.2	88-fon/mar(▲)	323.15	-230 ± 23	0.7	68-dan/kno-1(■)
275.64	-319 ± 1	-0.4	88-fon/mar(▲)	325.01	-227 ± 1	1.2	88-fon/mar(▲)
281.57	-302 ± 1	3.6	88-fon/mar(▲)	327.77	-222 ± 1	1.6	88-fon/mar(▲)
288.54	-289 ± 1	2.8	88-fon/mar(▲)	329.33	-219 ± 1	2.1	88-fon/mar(▲)
288.70	-284 ± 5	7.3	61-mas/eak(◆)	332.99	-214 ± 1	1.5	88-fon/mar(▲)
293.15	-284 ± 26	-1.1	88-jae/aud(◇)	333.15	-214 ± 18	1.2	88-jae/aud(◇)
298.15	-274 ± 27	-0.6	68-dan/kno-1(■)	340.75	-204 ± 1	0.2	88-fon/mar(▲)
305.22	-257 ± 1	3.4	88-fon/mar(▲)	347.53	-195 ± 1	-0.3	88-fon/mar(▲)
313.15	-247 ± 22	0.5	88-jae/aud(◇)	348.15	-193 ± 19	1.1	68-dan/kno-1(■)
316.14	-243 ± 1	-0.9	88-fon/mar(▲)	355.96	-183 ± 1	1.2	88-fon/mar(▲)
316.14	-244 ± 1	-1.6	88-fon/mar(▲)	373.15	-165 ± 16	-2.5	68-dan/kno-1(■)
316.15	-243 ± 1	-0.9	88-fon/mar(▲)				

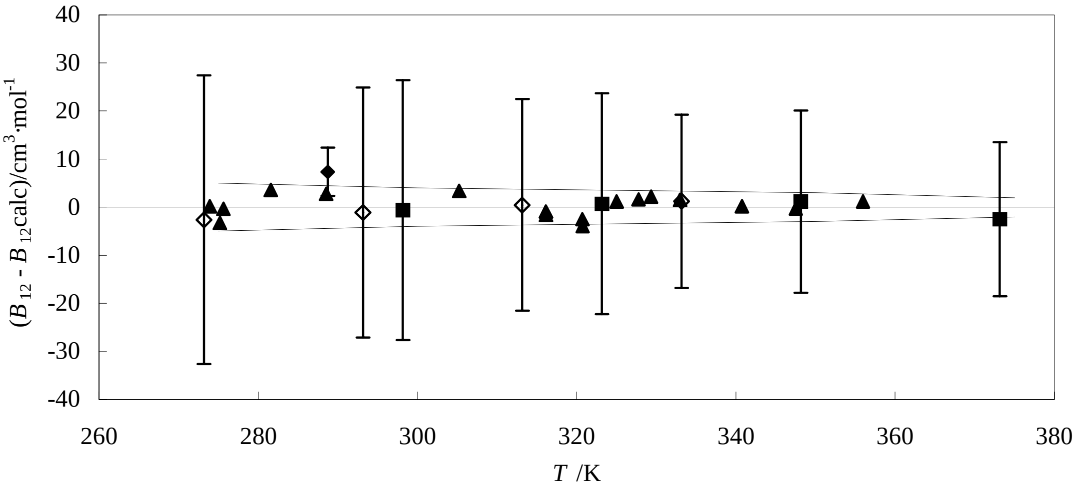

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

$\frac{T}{K}$	x_1	$\frac{B^E \pm \delta B^E}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	x_1	$\frac{B^E \pm \delta B^E}{cm^3 \cdot mol^{-1}}$	Ref.
298.15	0.500	17.0 ± 1.0	68-dan/kno-1	348.15	0.500	12.0 ± 2.0	68-dan/kno-1
323.15	0.500	14.0 ± 1.0	68-dan/kno-1	373.15	0.500	10.0 ± 1.0	68-dan/kno-1

cont.

Ethane + Propane (cont.)

Table 6. Experimental C_{112} values with uncertainty.

T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{112} \pm \delta C_{112}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	10.6 ± 1.0	88-jae/aud	313.15	12.8 ± 1.0	88-jae/aud
293.15	12.3 ± 1.0	88-jae/aud	333.15	12.0 ± 1.0	88-jae/aud

Table 7. Experimental C_{122} values with uncertainty.

T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T/K	$C_{122} \pm \delta C_{122}$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
273.15	10.5 ± 1.0	88-jae/aud	313.15	16.1 ± 1.5	88-jae/aud
293.15	14.2 ± 1.5	88-jae/aud	333.15	16.2 ± 1.5	88-jae/aud

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **664**
Decafluorobutane **[355-25-9]** **C_4F_{10}** **MW = 238.03**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-273 ± 10	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	178 ± 1	71-dan/kno				

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **665**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 2.3606 \cdot 10^2 - 1.7765 \cdot 10^5/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
275	-409.9 ± 30	350	-271.5 ± 20		
300	-356.1 ± 25	375	-237.7 ± 20		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
273.15	-452 ± 34	-37.7	88-jae/aud(◇)	323.15	-307 ± 30	6.7	68-dan/kno-1(■)
288.70	-374 ± 5	5.3	61-mas/eak(◆)	333.15	-291 ± 22	6.2	88-jae/aud(◇)
293.15	-384 ± 30	-14.1	88-jae/aud(◇)	333.20	-333 ± 9	-35.9	79-wor/lew(▲)
298.15	-362 ± 36	-2.2	68-dan/kno-1(■)	348.15	-258 ± 26	16.2	68-dan/kno-1(■)
304.50	-332 ± 10	15.4	79-wor/lew(▲)	363.20	-233 ± 9	20.1	79-wor/lew(▲)
313.15	-330 ± 26	1.2	88-jae/aud(◇)	373.15	-215 ± 22	25.0	68-dan/kno-1(■)

cont.

Ethane + Butane (cont.)

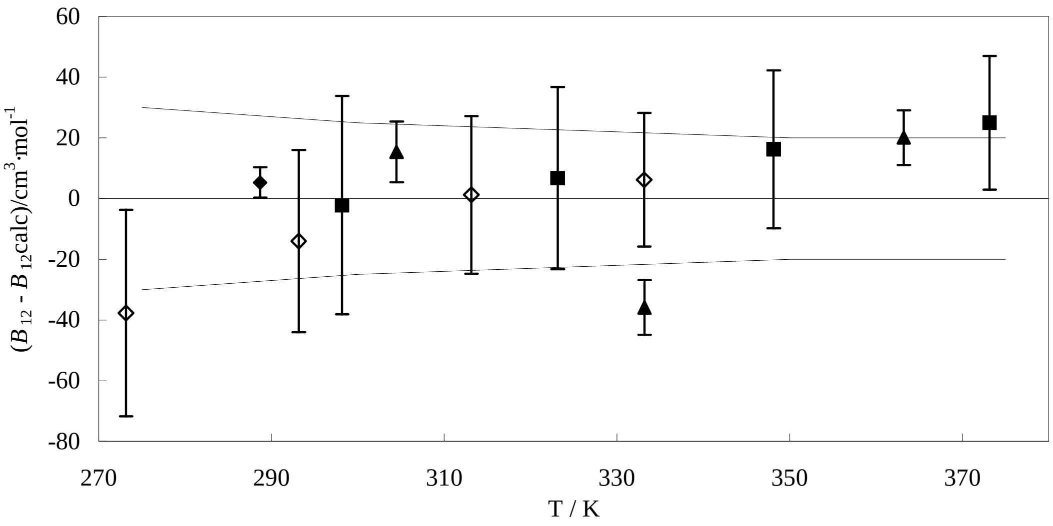

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	92 ± 1	68-dan/kno-1	348.15	0.500	60 ± 1	68-dan/kno-1
323.15	0.500	72 ± 2	68-dan/kno-1	373.15	0.500	54 ± 2	68-dan/kno-1

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **666**
Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-388 ± 30	73-mas/kin			

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **667**
1-Butanol **[71-36-3]** **$C_4H_{10}O$** **MW = 74.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-375 ± 35	73-mas/kin			

Ethane **[74-84-0]** C_2H_6 **MW = 30.07** **668**
Pentane **[109-66-0]** C_5H_{12} **MW = 72.15**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\text{cm}^3\cdot\text{mol}^{-1} = -9.9870\cdot 10^2 + 6.7418\cdot 10^5/(T/\text{K}) - 1.5158\cdot 10^8/(T/\text{K})^2$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm$^3\cdot$ mol^{-1}
275	-551.5 ± 45	350	-309.9 ± 30		
300	-435.7 ± 40	375	-278.8 ± 25		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm$^3\cdot$ mol^{-1}	$B_{exp} - B_{calc}$ / cm$^3\cdot$ mol^{-1}	Ref. (Symbol in Fig. 1)
273.15	-572 ± 45	-10.0	88-jae/aud(▲)	313.15	-407 ± 35	-15.7	88-jae/aud(▲)
293.15	-482 ± 40	-19.3	88-jae/aud(▲)	323.15	-377 ± 38	-13.0	68-dan/kno-1(◆)
298.15	-448 ± 45	-5.3	68-dan/kno-1(◆)	348.15	-315 ± 32	-2.2	68-dan/kno-1(◆)
298.15	-386 ± 30	56.7	73-mas/kin[1]	373.15	-272 ± 27	8.6	68-dan/kno-1(◆)
298.20	-414 ± 171	28.5	68-pec/win[1]				

[1] Not included in Figure 1.

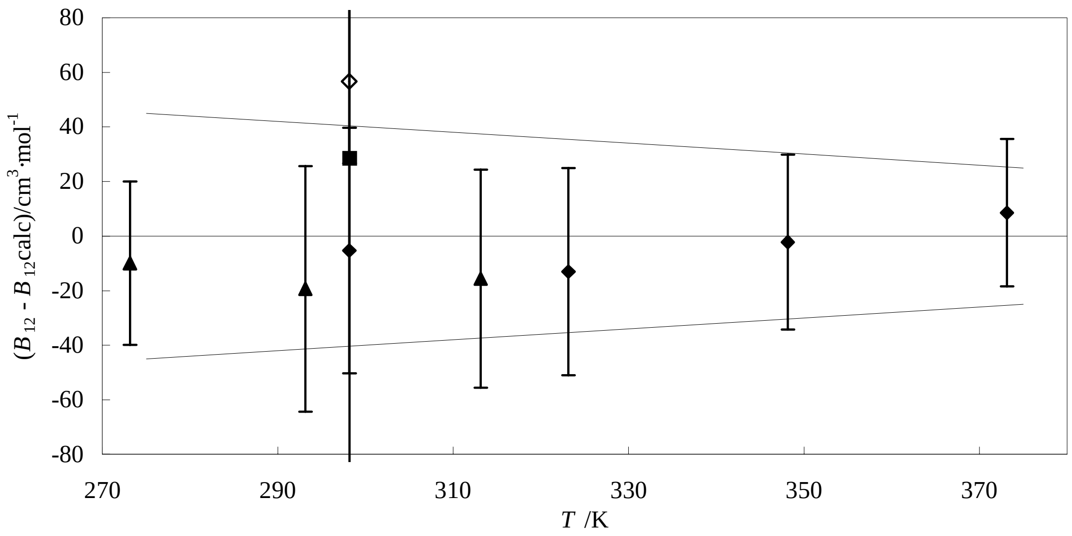

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / cm$^3\cdot$ mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / cm$^3\cdot$ mol^{-1}	Ref.
298.15	0.500	242 ± 3	68-dan/kno-1	348.15	0.500	158 ± 2	68-dan/kno-1
323.15	0.500	192 ± 2	68-dan/kno-1	373.15	0.500	129 ± 2	68-dan/kno-1

Ethane [74-84-0] C_2H_6 MW = 30.07 **669**
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-540 ± 54	68-dan/kno-1	373.15	-319 ± 32	68-dan/kno-1
323.15	-458 ± 46	68-dan/kno-1	383.20	-310 ± 15	79-wor/lew
348.15	-373 ± 37	68-dan/kno-1	403.20	-274 ± 13	79-wor/lew
372.20	-330 ± 18	79-wor/lew			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	510 ± 30	68-dan/kno-1	348.15	0.500	312 ± 2	68-dan/kno-1
323.15	0.500	386 ± 5	68-dan/kno-1	373.15	0.500	254 ± 2	68-dan/kno-1

Ethane [74-84-0] C_2H_6 MW = 30.07 **670**
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
403.20	-354 ± 64	79-wor/lew	413.20	-331 ± 51	79-wor/lew

Ethane [74-84-0] C_2H_6 MW = 30.07 **671**
Naphthalene [91-20-3] $C_{10}H_8$ MW = 128.17

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
299.00	-724 ± 10	68-kin-1	323.00	-579 ± 10	68-kin-1
301.00	-699 ± 10	68-kin-1	330.00	-562 ± 10	68-kin-1
309.50	-642 ± 18	68-kin-1	340.00	-528 ± 10	68-kin-1
318.00	-608 ± 8	68-kin-1			

Ethane [74-84-0] C_2H_6 MW = 30.07 **672**
1-Methylnaphthalene [90-12-0] $C_{11}H_{10}$ MW = 142.20

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-672 ± 28	78-kau/pra	448.15	-322 ± 15	78-kau/pra
398.15	-462 ± 23	78-kau/pra			

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **673**
Bicyclohexyl **[92-51-3]** **$C_{12}H_{22}$** **MW = 166.37**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-777 ± 32	78-kau/pra	443.15	-326 ± 15	78-kau/pra
383.15	-545 ± 27	78-kau/pra			

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **674**
Diphenylmethane **[101-81-5]** **$C_{13}H_{12}$** **MW = 168.24**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
338.15	-734 ± 35	78-kau/pra	448.15	-343 ± 20	78-kau/pra
393.15	-481 ± 35	78-kau/pra			

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **675**
Anthracene **[120-12-7]** **$C_{14}H_{10}$** **MW = 178.23**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
336.00	-781 ± 12	70-naj/kin	398.00	-526 ± 12	70-naj/kin
348.00	-719 ± 12	70-naj/kin	423.00	-452 ± 12	70-naj/kin
373.00	-619 ± 12	70-naj/kin	448.00	-419 ± 12	70-naj/kin

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **676**
Hexadecane **[544-76-3]** **$C_{16}H_{34}$** **MW = 226.45**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-928 ± 40	78-kau/pra	448.15	-434 ± 21	78-kau/pra
398.15	-645 ± 30	78-kau/pra			

Ethane **[74-84-0]** **C_2H_6** **MW = 30.07** **677**
Eicosane **[112-95-8]** **$C_{20}H_{42}$** **MW = 282.55**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
438.15	-517 ± 25	78-kau/pra	508.15	-336 ± 15	78-kau/pra
473.15	-402 ± 20	78-kau/pra	543.15	-256 ± 10	78-kau/pra

Ethane [74-84-0] C_2H_6 MW = 30.07 678
2,6,10,15,19,23-Hexamethyltetracosane [111-01-3] $C_{30}H_{62}$ MW = 422.82

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
503.15	-293 ± 20	78-kau/pra	545.15	-165 ± 10	78-kau/pra

Dimethyl ether [115-10-6] C_2H_6O MW = 46.07 679
1*H*-Perfluoropropane [2252-84-8] C_3HF_7 MW = 170.03

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
283.15	-1280 ± 50	62-tri/dun	303.03	-1080 ± 50	62-tri/dun
283.15	-1224 ± 50	62-tri/dun	323.20	-676 ± 50	62-tri/dun
283.15	-1362 ± 50	62-tri/dun	323.20	-662 ± 50	62-tri/dun
303.03	-951 ± 50	62-tri/dun	323.20	-800 ± 50	62-tri/dun
303.03	-920 ± 50	62-tri/dun			

Ethanol [64-17-5] C_2H_6O MW = 46.07 680
Pentylamine [110-58-7] $C_5H_{13}N$ MW = 87.16

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
363.15	-1112 ± 160	89-abu/ver-1	363.15	-1138 ± 160	89-abu/ver-1

Ethanol [64-17-5] C_2H_6O MW = 46.07 681
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 4.5376 \cdot 10^2 - 3.5275 \cdot 10^5/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
350	-554.1 ± 40	450	-330.1 ± 25	525	-218.1 ± 20
400	-428.1 ± 30	500	-251.7 ± 20		

cont.

Ethanol + Benzene (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T / K	B_{exp} ± δB / $cm^3 \cdot mol^{-1}$	B_{exp} - B_{calc} / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T / K	B_{exp} ± δB / $cm^3 \cdot mol^{-1}$	B_{exp} - B_{calc} / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
333.15	-567 ± 52	38.1	68-kno/edm(◆)	413.20	-403 ± 40	-3.1	97-wor/sow(■)
353.15	-421 ± 52	124.1	68-kno/edm[1]	423.20	-379 ± 35	0.8	97-wor/sow(■)
363.20	-562 ± 55	-44.5	97-wor/sow(■)	433.20	-357 ± 35	3.5	97-wor/sow(■)
368.20	-542 ± 55	-37.7	97-wor/sow(■)	473.20	-286 ± 30	5.7	97-wor/sow(■)
373.15	-490 ± 52	1.6	68-kno/edm(◆)	483.20	-271 ± 25	5.3	97-wor/sow(■)
373.20	-523 ± 50	-31.6	97-wor/sow(■)	493.20	-258 ± 25	3.5	97-wor/sow(■)
378.20	-505 ± 50	-26.1	97-wor/sow(■)	503.20	-245 ± 20	2.3	97-wor/sow(■)
383.20	-488 ± 45	-21.2	97-wor/sow(■)	513.20	-233 ± 20	0.6	97-wor/sow(■)
393.20	-457 ± 45	-13.6	97-wor/sow(■)	523.20	-221 ± 20	-0.5	97-wor/sow(■)
403.20	-428 ± 40	-6.9	97-wor/sow(■)				

[1] Not included in Figure 1.

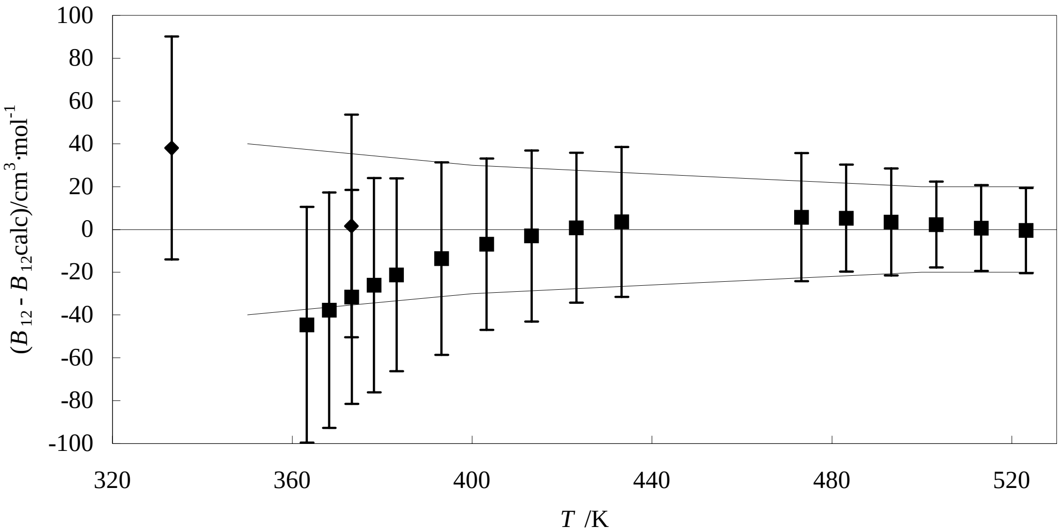

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Ethanol **[64-17-5]** **C_2H_6O** **MW = 46.07** **682**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 86.16**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 7.8868 \cdot 10 - 2.2292 \cdot 10^4/(T/K) - 5.9299 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
375	-402.3 ± 35	450	-263.5 ± 25	525	-178.7 ± 20
400	-347.5 ± 30	500	-202.9 ± 20		

cont.

Ethanol + Cyclohexane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)	$\frac{T}{K}$	$\frac{B_{exp} \pm \delta B}{cm^3 \cdot mol^{-1}}$	$\frac{B_{exp} - B_{calc}}{cm^3 \cdot mol^{-1}}$	Ref. (Symbol in Fig. 1)
363.20	-432 ± 40	0.0	97-wor/sow(▲)	423.20	-305 ± 30	-0.1	97-wor/sow(▲)
368.20	-419 ± 40	0.1	97-wor/sow(▲)	433.20	-289 ± 25	-0.4	97-wor/sow(▲)
373.20	-407 ± 40	-0.4	97-wor/sow(▲)	483.20	-221 ± 20	0.2	97-wor/sow(▲)
378.20	-395 ± 35	-0.3	97-wor/sow(▲)	493.20	-210 ± 20	0.1	97-wor/sow(▲)
383.20	-383 ± 35	0.1	97-wor/sow(▲)	503.20	-200 ± 20	-0.4	97-wor/sow(▲)
393.20	-361 ± 35	0.4	97-wor/sow(▲)	513.20	-190 ± 20	-0.3	97-wor/sow(▲)
403.20	-341 ± 30	0.2	97-wor/sow(▲)	523.20	-180 ± 20	0.4	97-wor/sow(▲)
413.20	-322 ± 30	0.4	97-wor/sow(▲)				

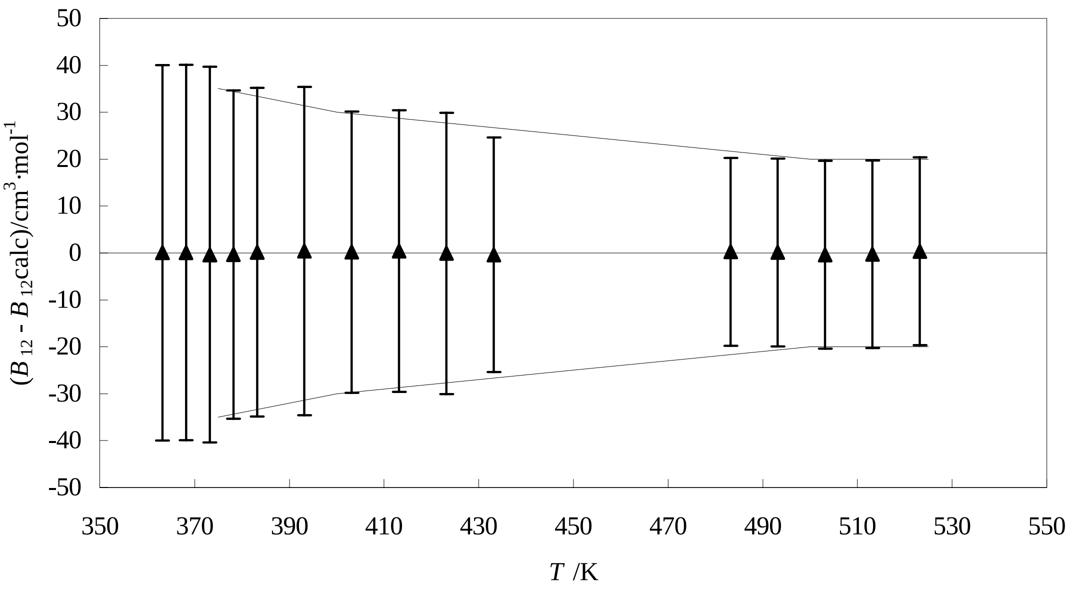

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Ethanol **[64-17-5]** **C_2H_6O** **MW = 46.07** **683**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.	$\frac{T}{K}$	$\frac{B_{12} \pm \delta B_{12}}{cm^3 \cdot mol^{-1}}$	Ref.
308.15	-2140 ± 64	73-mar/bai			

Octafluoropropane [76-19-7] C_3F_8 MW = 188.02 684
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-311 ± 20	71-dan/kno	373.15	-212 ± 20	71-dan/kno

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	70 ± 1	71-dan/kno	373.15	0.500	54 ± 1	71-dan/kno

Propene [115-07-1] C_3H_6 MW = 42.08 685
Propane [74-98-6] C_3H_8 MW = 44.10

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
393.19	-199.0 ± 3	78-war/wie-1	407.52	-185.1 ± 3	78-war/wie-1
288.70	-407.1 ± 5	61-mas/eak	407.53	-184.6 ± 3	78-war/wie-1
393.29	-196.3 ± 3	78-war/wie-1	423.00	-169.7 ± 3	78-war/wie-1
407.50	-185.8 ± 3	78-war/wie-1			

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
393.19	0.381	-197 ± 2.5	78-war/wie-1	407.52	0.457	-186 ± 3.0	78-war/wie-1
393.19	0.381	-199 ± 3.0	78-war/wie-1	407.53	0.666	-188 ± 2.5	78-war/wie-1
393.29	0.385	-196 ± 2.5	78-war/wie-1	407.53	0.666	-190 ± 3.0	78-war/wie-1
393.29	0.385	-198 ± 3.0	78-war/wie-1	422.99	0.637	-173 ± 2.5	78-war/wie-1
407.50	0.443	-184 ± 2.5	78-war/wie-1	422.99	0.637	-174 ± 3.0	78-war/wie-1
407.50	0.443	-185 ± 3.0	78-war/wie-1	423.00	0.488	-169 ± 2.5	78-war/wie-1
407.52	0.457	-184 ± 2.5	78-war/wie-1				

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
393.19	0.381	15.9 ± 0.5	78-war/wie-1	407.52	0.457	16.3 ± 0.6	78-war/wie-1
393.19	0.381	16.6 ± 0.6	78-war/wie-1	407.53	0.666	15.7 ± 0.5	78-war/wie-1
393.29	0.385	15.6 ± 0.5	78-war/wie-1	407.53	0.666	16.4 ± 0.6	78-war/wie-1
393.29	0.385	16.4 ± 0.6	78-war/wie-1	422.99	0.637	14.9 ± 0.5	78-war/wie-1
407.50	0.443	15.3 ± 0.5	78-war/wie-1	422.99	0.637	15.5 ± 0.6	78-war/wie-1
407.50	0.443	15.9 ± 0.6	78-war/wie-1	423.00	0.488	14.6 ± 0.5	78-war/wie-1
407.52	0.457	15.2 ± 0.5	78-war/wie-1				

Propene **[115-07-1]** **C_3H_6** **MW = 42.08** **686**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	-529.6 ± 5.0	61-mas/eak			

Propene **[115-07-1]** **C_3H_6** **MW = 42.08** **687**
2-Methylpropane **[75-28-5]** **C_4H_{10}** **MW = 58.12**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
288.70	-510.5 ± 5.0	61-mas/eak			

Propene **[115-07-1]** **C_3H_6** **MW = 42.08** **688**
1-Heptene **[592-76-7]** **C_7H_{14}** **MW = 98.19**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
324.30	-983 ± 20	64-mcg/wor	363.20	-702 ± 14	64-mcg/wor
328.70	-929 ± 19	64-mcg/wor	374.30	-659 ± 13	64-mcg/wor
333.20	-882 ± 17	64-mcg/wor	384.60	-616 ± 12	64-mcg/wor
338.50	-850 ± 17	64-mcg/wor	394.60	-571 ± 11	64-mcg/wor
344.80	-806 ± 16	64-mcg/wor	403.30	-534 ± 11	64-mcg/wor
348.80	-783 ± 16	64-mcg/wor	411.50	-506 ± 10	64-mcg/wor
355.50	-751 ± 15	64-mcg/wor			

Propanone **[67-64-1]** **C_3H_6O** **MW = 58.08** **689**
Methyl ethanoate **[79-20-9]** **$C_3H_6O_2$** **MW = 74.08**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
273.15	-905 ± 50	78-die/pat			

Table 3. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
348.30	0.500	76.3 ± 15	83-mce/has	373.64	0.500	49.0 ± 15	83-mce/has

Propanone [67-64-1] C_3H_6O MW = 58.08 690
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
282.30	-805.0 ± 50.3	63-kap/lun	312.00	-569.0 ± 38.5	63-kap/lun
297.00	-656.0 ± 42.8	63-kap/lun	321.00	-504.0 ± 35.2	63-kap/lun

Propanone [67-64-1] C_3H_6O MW = 58.08 691
Tetradecafluorohexane [355-42-0] C_6F_{14} MW = 338.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.00	-860 ± 20	80-pas/han	348.00	-620 ± 15	80-pas/han
323.00	-800 ± 15	80-pas/han	373.00	-500 ± 14	80-pas/han

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
308.00	0.500	980 ± 100	80-pas/han	348.00	0.500	652 ± 20	80-pas/han
323.00	0.500	802 ± 40	80-pas/han	373.00	0.500	480 ± 5	80-pas/han

Propanone [67-64-1] C_3H_6O MW = 58.08 692
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.4272 \cdot 10^3 - 7.9349 \cdot 10^5/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
300	-1217.8 ± 80	340	-906.6 ± 60	380	-660.9 ± 50
320	-1052.5 ± 70	360	-776.9 ± 50	400	-556.5 ± 50

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
313.15	-1372 ± 52	-265.3	68-kno/edm[1]	373.15	-593 ± 52	106.3	68-kno/edm[1]
333.15	-930 ± 52	24.6	68-kno/edm(■)	373.20	-735 ± 50	-36.0	64-zaa/bel(◆)
353.15	-642 ± 20	177.7	65-cha/wan[1]	373.20	-677 ± 50	22.0	98-wor/may(▲)
353.15	-698 ± 52	121.7	68-kno/edm[1]	383.20	-710 ± 50	-66.5	64-zaa/bel(◆)
353.20	-910 ± 50	-90.6	64-zaa/bel[1]	383.20	-634 ± 50	9.5	98-wor/may(▲)
353.20	-781 ± 60	38.4	98-wor/may(▲)	393.20	-595 ± 40	-4.2	98-wor/may(▲)
363.20	-807 ± 50	-49.5	64-zaa/bel(◆)	403.20	-561 ± 40	-20.2	98-wor/may(▲)
363.20	-725 ± 60	32.5	98-wor/may(▲)				

[1] Not included in Figure 1.

cont.

Propanone + Benzene (cont.)

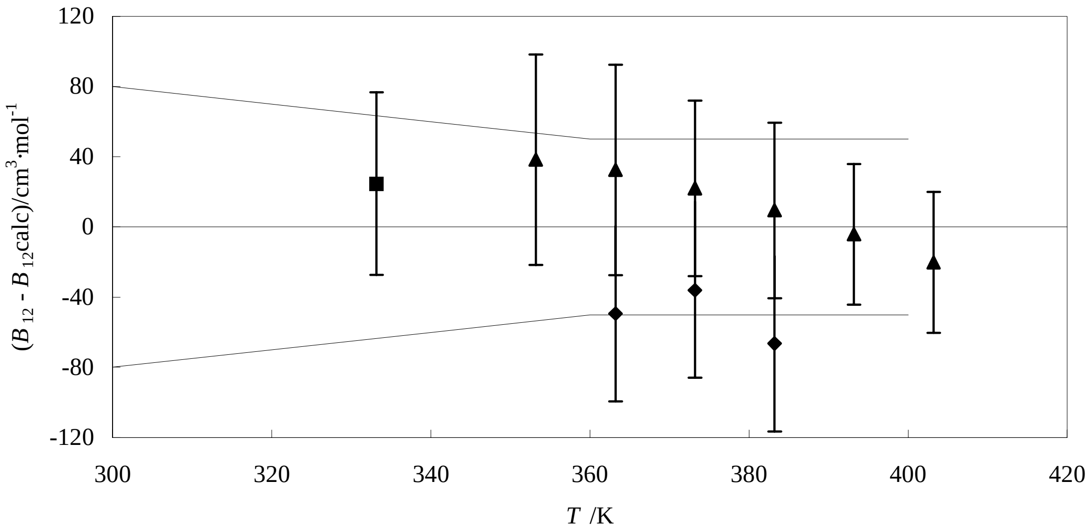

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Propanone [67-64-1] C_3H_6O MW = 58.08 693
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
326.00	-1010 ± 50	54-lam/mur	373.20	-552 ± 50	98-wor/may
349.00	-850 ± 50	54-lam/mur	383.20	-524 ± 50	98-wor/may
353.20	-624 ± 70	98-wor/may	393.20	-502 ± 40	98-wor/may
363.20	-589 ± 60	98-wor/may	403.20	-481 ± 50	98-wor/may

Propanone [67-64-1] C_3H_6O MW = 58.08 694
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
352.95	-865 ± 20	87-spi/gau			

Propanone [67-64-1] C_3H_6O MW = 58.08 **695**
1*H*-Perfluoroheptane [375-83-7] C_7HF_{15} MW = 370.06

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.00	-2900 ± 300	80-pas/han	348.00	-1610 ± 20	80-pas/han
323.00	-2280 ± 20	80-pas/han	373.00	-1200 ± 20	80-pas/han

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
308.00	0.500	-220 ± 40	80-pas/han	348.00	0.500	108 ± 20	80-pas/han
323.00	0.500	-50 ± 20	80-pas/han	373.00	0.500	173 ± 6	80-pas/han

Methyl ethanoate [79-20-9] $C_3H_6O_2$ MW = 74.08 **696**
Diethyl ether [60-29-7] $C_4H_{10}O$ MW = 74.12

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
302.79	-1196.0 ± 5.0	90-mce/rob	344.96	-817.5 ± 4.0	90-mce/rob
302.93	-1201.0 ± 5.0	90-mce/rob	344.97	-824.3 ± 4.0	90-mce/rob
322.74	-994.0 ± 3.0	90-mce/rob	363.26	-715.0 ± 1.5	90-mce/rob
322.75	-994.0 ± 3.0	90-mce/rob			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
302.79	0.500	133.0 ± 1.5	90-mce/rob	344.96	0.500	75.5 ± 1.5	90-mce/rob
302.93	0.500	128.0 ± 1.5	90-mce/rob	344.97	0.500	68.7 ± 1.5	90-mce/rob
322.74	0.500	97.0 ± 1.5	90-mce/rob	363.26	0.500	55.5 ± 1.5	90-mce/rob
322.75	0.500	97.0 ± 1.5	90-mce/rob				

Methyl ethanoate [79-20-9] $C_3H_6O_2$ MW = 74.08 **697**
3-Thiapentane [352-93-2] $C_4H_{10}S$ MW = 90.19

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.16	0.500	154 ± 10	90-mce/gel	373.15	0.500	107 ± 9	90-mce/gel
348.15	0.500	115 ± 10	90-mce/gel				

Methyl ethanoate [79-20-9] $C_3H_6O_2$ MW = 74.08 698
Diethylamine [109-89-7] $C_4H_{11}N$ MW = 73.14

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{12} ± δB_{12} / $cm^3 \cdot mol^{-1}$			Ref.	T/K	B_{12} ± δB_{12} / $cm^3 \cdot mol^{-1}$			Ref.
393.45	-714.8	±	50.0	89-olf/sch	413.20	-547.2	±	50.0	89-olf/sch
393.70	-686.8	±	50.0	89-olf/sch	433.15	-535.4	±	50.0	89-olf/sch
413.20	-561.8	±	50.0	89-olf/sch	433.20	-511.5	±	50.0	89-olf/sch

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	B_m ± δB_m / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_2	B_m ± δB_m / $cm^3 \cdot mol^{-1}$			Ref.
393.45	0.470	-695.6	±	50	89-olf/sch	413.20	0.490	-574.4	±	50	89-olf/sch
393.70	0.470	-681.0	±	50	89-olf/sch	433.15	0.484	-523.4	±	50	89-olf/sch
413.20	0.490	-567.1	±	50	89-olf/sch	433.20	0.484	-511.5	±	50	89-olf/sch

Table 5. Experimental C_m values with uncertainty.

T/K	x_2	C_m ± δC_m / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.	T/K	x_2	C_m ± δC_m / $10^3 \cdot cm^6 \cdot mol^{-2}$			Ref.
393.45	0.470	301.4	±	60	89-olf/sch	413.20	0.490	55.6	±	20	89-olf/sch
393.70	0.470	251.0	±	60	89-olf/sch	433.15	0.484	169.6	±	20	89-olf/sch
413.20	0.490	105.1	±	40	89-olf/sch	433.20	0.484	117.7	±	20	89-olf/sch

Propane [74-98-6] C_3H_8 MW = 44.10 699
Octafluorocyclobutane [115-25-3] C_4F_8 MW = 200.03

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	B_m ± δB_m / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_2	B_m ± δB_m / $cm^3 \cdot mol^{-1}$			Ref.
329.41	0.000	-310	±	5.0	82-bar/kay	348.57	0.207	-299	±	1.2	82-bar/kay
329.41	0.207	-333	±	1.2	82-bar/kay	348.57	0.254	-304	±	1.5	82-bar/kay
329.41	0.254	-348	±	1.5	82-bar/kay	348.57	0.364	-321	±	2.2	82-bar/kay
329.41	0.364	-370	±	2.2	82-bar/kay	348.57	0.519	-354	±	3.1	82-bar/kay
329.41	0.519	-406	±	3.1	82-bar/kay	348.57	0.752	-426	±	4.5	82-bar/kay
329.41	0.752	-483	±	4.5	82-bar/kay	348.57	1.000	-517	±	5.0	82-bar/kay
329.41	1.000	-595	±	5.0	82-bar/kay	358.97	0.000	-256	±	5.0	82-bar/kay
338.42	0.000	-292	±	5.0	82-bar/kay	358.97	0.075	-262	±	4.5	82-bar/kay
338.42	0.075	-308	±	4.5	82-bar/kay	358.97	0.141	-263	±	0.8	82-bar/kay
338.42	0.141	-310	±	0.9	82-bar/kay	358.97	0.207	-273	±	1.2	82-bar/kay
338.42	0.207	-313	±	1.2	82-bar/kay	358.97	0.254	-283	±	1.5	82-bar/kay
338.42	0.254	-322	±	1.5	82-bar/kay	358.97	0.364	-299	±	2.2	82-bar/kay
338.42	0.364	-348	±	2.2	82-bar/kay	358.97	0.519	-328	±	3.1	82-bar/kay
338.42	0.519	-382	±	3.0	82-bar/kay	358.97	0.752	-392	±	4.5	82-bar/kay
338.42	0.752	-453	±	4.5	82-bar/kay	368.19	0.000	-244	±	5.0	82-bar/kay
338.42	1.000	-553	±	5.0	82-bar/kay	368.19	0.075	-246	±	4.5	82-bar/kay
348.57	0.000	-274	±	5.0	82-bar/kay	368.19	0.254	-263	±	1.5	82-bar/kay
348.57	0.075	-279	±	4.5	82-bar/kay	368.19	0.514	-310	±	3.2	82-bar/kay
348.57	0.141	-290	±	0.8	82-bar/kay	368.19	0.752	-371	±	4.5	82-bar/kay

cont.

Propane + Octafluorocyclobutane (cont.)

Table 3. (cont.)

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
368.19	1.000	-450 ± 5.0	82-bar/kay	387.74	0.514	-269 ± 3.1	82-bar/kay
377.99	0.000	-231 ± 5.0	82-bar/kay	387.74	0.752	-323 ± 4.5	82-bar/kay
377.99	0.254	-246 ± 1.5	82-bar/kay	387.74	1.000	-389 ± 5.0	82-bar/kay
377.99	0.514	-288 ± 3.1	82-bar/kay	397.72	0.254	-222 ± 1.5	82-bar/kay
377.99	0.752	-340 ± 4.5	82-bar/kay	397.73	0.000	-204 ± 5.0	82-bar/kay
377.99	1.000	-424 ± 5.0	82-bar/kay	397.73	0.514	-251 ± 3.1	82-bar/kay
387.74	0.000	-219 ± 5.0	82-bar/kay	397.73	0.752	-296 ± 4.5	82-bar/kay
387.74	0.254	-232 ± 1.5	82-bar/kay	397.73	1.000	-363 ± 5.0	82-bar/kay

Propane [74-98-6] C_3H_8 MW = 44.10 700
1,4-Dioxane [123-91-1] $C_4H_8O_2$ MW = 88.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-364 ± 30	99-wor/joh	413.20	-286 ± 30	99-wor/joh
383.20	-345 ± 30	99-wor/joh	423.20	-271 ± 30	99-wor/joh
393.20	-326 ± 30	99-wor/joh	433.20	-258 ± 30	99-wor/joh
403.20	-301 ± 30	99-wor/joh			

Propane [74-98-6] C_3H_8 MW = 44.10 701
Butane [106-97-8] C_4H_{10} MW = 58.12

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3{\cdot}mol^{-1} = 1.6045 \cdot 10^2 - 5.6412 \cdot 10^4/(T/K) - 4.5336 \cdot 10^7/(T/K)^2$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
275	-644.2 ± 15	325	-442.3 ± 10	375	-312.4 ± 10
300	-531.3 ± 10	350	-370.8 ± 10		

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
273.15	-659 ± 44	-5.6	88-jae/aud(▲)	323.15	-447 ± 9	1.3	68-dan/kno-1(■)
288.70	-577 ± 5	1.8	61-mas/eak(◆)	333.15	-422 ± 25	-5.0	88-jae/aud(▲)
293.15	-557 ± 35	2.2	88-jae/aud(▲)	348.15	-373 ± 8	2.6	68-dan/kno-1(■)
298.15	-540 ± 10	-1.2	68-dan/kno-1(■)	373.15	-316 ± 7	0.3	68-dan/kno-1(■)
313.15	-478 ± 28	3.6	88-jae/aud(▲)				

cont.

Propane + Butane (cont.)

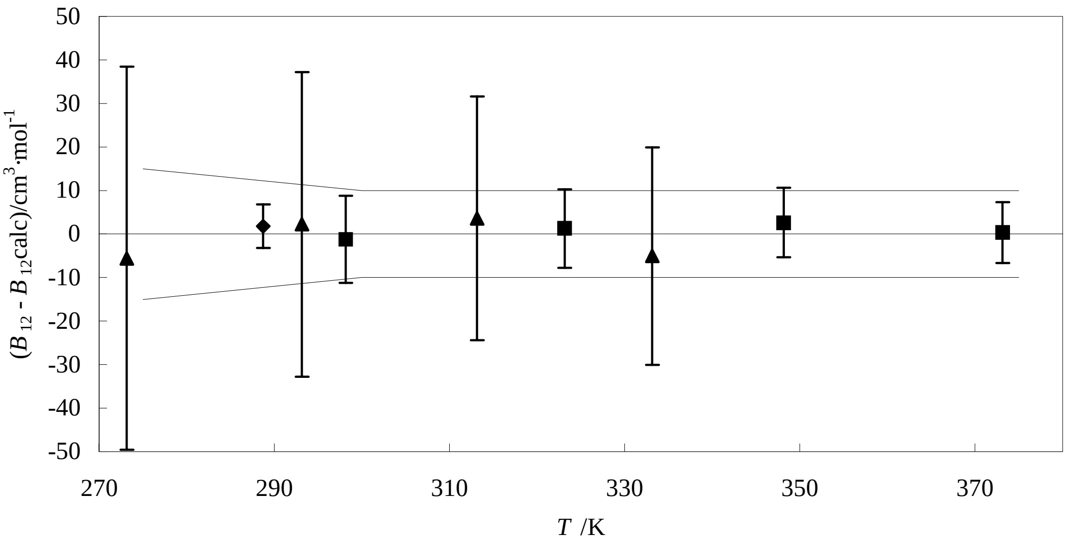

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.
298.15	0.500	26 ± 1	68-dan/kno-1	348.15	0.500	15 ± 1	68-dan/kno-1
323.15	0.500	18 ± 1	68-dan/kno-1	373.15	0.500	12 ± 1	68-dan/kno-1

Propane	**[74-98-6]**	**C_3H_8**	**MW = 44.10**	**702**
Pentane	**[109-66-0]**	**C_5H_{12}**	**MW = 72.15**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ cm^3· mol^{-1}	Ref.	T/K	$B_{12} \pm \delta B_{12}$ cm^3· mol^{-1}	Ref.
298.15	-671 ± 14	68-dan/kno-1	348.15	-466 ± 11	68-dan/kno-1
323.15	-558 ± 12	68-dan/kno-1	373.15	-399 ± 10	68-dan/kno-1

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.	T/K	x_1	$B^E \pm \delta B^E$ cm^3· mol^{-1}	Ref.
298.15	0.500	126 ± 3	68-dan/kno-1	348.15	0.500	76 ± 2	68-dan/kno-1
323.15	0.500	97 ± 2	68-dan/kno-1	373.15	0.500	60 ± 2	68-dan/kno-1

Propane **[74-98-6]** **C_3H_8** **MW = 44.10** **703**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/\mathrm{cm^3\cdot mol^{-1}} = -\,4.1284 \cdot 10^2 + 3.6086 \cdot 10^5/(T/\mathrm{K}) - 1.4408 \cdot 10^8/(T/\mathrm{K})^2$$

T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}	T/K	$(B_{12} \pm 2\sigma_{est})$/cm^3· mol^{-1}
300	-810.9 ± 30	340	-597.9 ± 20	380	-461.0 ± 15
320	-692.2 ± 25	360	-522.2 ± 20	400	-411.2 ± 15

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / cm^3· mol^{-1}	$B_{exp} - B_{calc}$ / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
298.15	-822 ± 30	1.3	68-dan/kno-1(■)	363.20	-519 ± 16	-7.5	79-wor/lew(▲)
323.15	-682 ± 25	-6.1	68-dan/kno-1(■)	373.15	-478 ± 15	2.5	68-dan/kno-1(■)
344.20	-574 ± 19	6.6	79-wor/lew(▲)	396.90	-418 ± 14	0.3	79-wor/lew(▲)
348.15	-562 ± 20	3.0	68-dan/kno-1(■)				

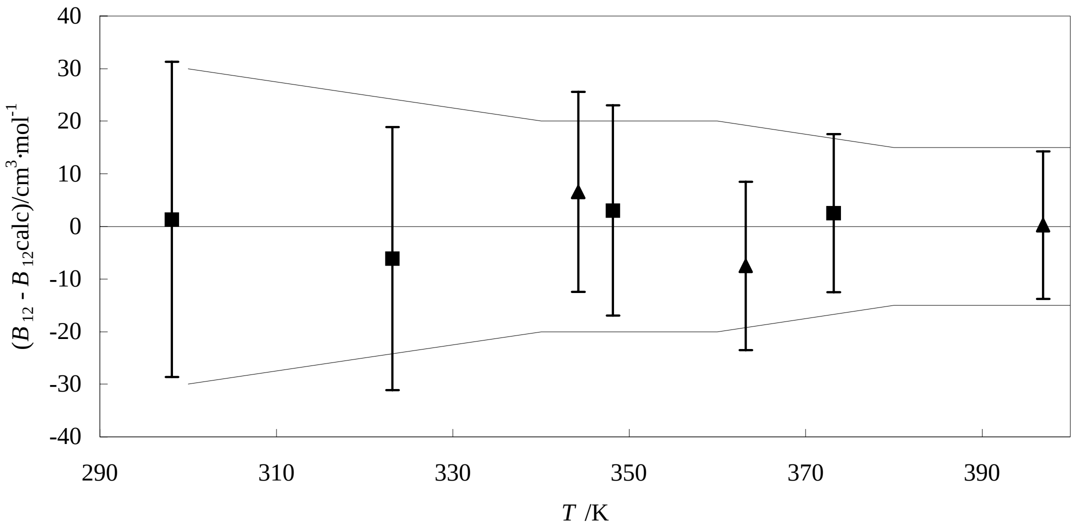

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / cm^3· mol^{-1}	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / cm^3· mol^{-1}	Ref.
373.15	0.000	-1100 ± 65	81-chu/kay	393.15	0.000	-862 ± 53	81-chu/kay
373.15	0.144	-904 ± 85	81-chu/kay	393.15	0.144	-806 ± 78	81-chu/kay
373.15	0.444	-653 ± 65	81-chu/kay	393.15	0.444	-577 ± 59	81-chu/kay
373.15	0.700	-391 ± 44	81-chu/kay	393.15	0.700	-336 ± 40	81-chu/kay
373.15	0.820	-321 ± 39	81-chu/kay	393.15	0.820	-283 ± 36	81-chu/kay
373.15	0.922	-276 ± 35	81-chu/kay	393.15	0.922	-242 ± 32	81-chu/kay
387.55	0.922	-254 ± 33	81-chu/kay	409.50	0.820	-258 ± 34	81-chu/kay

cont.

Propane + Hexane (cont.)

Table 3. (cont.)

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
413.15	0.144	-686	±	68	81-chu/kay	453.15	0.444	-383	±	44	81-chu/kay
413.15	0.444	-505	±	53	81-chu/kay	453.15	0.700	-235	±	32	81-chu/kay
413.15	0.700	-300	±	37	81-chu/kay	453.15	0.820	-194	±	29	81-chu/kay
413.15	0.820	-236	±	32	81-chu/kay	453.15	0.922	-162	±	26	81-chu/kay
413.15	0.922	-217	±	30	81-chu/kay	473.15	0.000	-555	±	38	81-chu/kay
426.15	0.000	-720	±	46	81-chu/kay	473.15	0.144	-502	±	53	81-chu/kay
426.15	0.144	-675	±	67	81-chu/kay	473.15	0.700	-210	±	30	81-chu/kay
426.15	0.444	-461	±	50	81-chu/kay	493.15	0.000	-524	±	36	81-chu/kay
426.15	0.700	-281	±	36	81-chu/kay	493.15	0.444	-309	±	38	81-chu/kay
426.15	0.820	-224	±	31	81-chu/kay	493.15	0.700	-190	±	28	81-chu/kay
426.15	0.922	-200	±	29	81-chu/kay	493.15	0.922	-134	±	24	81-chu/kay
431.26	0.700	-271	±	35	81-chu/kay	496.30	0.144	-432	±	48	81-chu/kay
453.15	0.000	-658	±	43	81-chu/kay	507.95	0.000	-469	±	34	81-chu/kay
453.15	0.144	-576	±	59	81-chu/kay						

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$			Ref.
298.15	0.500	330	±	35	68-dan/kno-1	348.15	0.500	196	±	2	68-dan/kno-1
323.15	0.500	248	±	5	68-dan/kno-1	373.15	0.500	154	±	2	68-dan/kno-1

Propane **[74-98-6]** **C_3H_8** **MW = 44.10** **704**
2-Methylpentane **[107-83-5]** **C_6H_{14}** **MW = 86.18**

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T / K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
383.15	0.000	-895	±	54.8	81-chu/kay	431.97	0.645	-300	±	31.0	81-chu/kay
383.15	0.150	-754	±	62.8	81-chu/kay	453.15	0.000	-574	±	38.7	81-chu/kay
383.15	0.445	-533	±	47.3	81-chu/kay	453.15	0.150	-499	±	44.9	81-chu/kay
383.15	0.649	-400	±	38.0	81-chu/kay	453.15	0.445	-347	±	34.3	81-chu/kay
383.15	0.919	-266	±	28.6	81-chu/kay	453.15	0.649	-257	±	28.0	81-chu/kay
386.58	0.919	-265	±	28.5	81-chu/kay	458.19	0.445	-328	±	33.0	81-chu/kay
403.15	0.000	-779	±	49.0	81-chu/kay	473.15	0.000	-520	±	36.0	81-chu/kay
403.15	0.150	-677	±	57.4	81-chu/kay	473.15	0.150	-445	±	41.1	81-chu/kay
403.15	0.445	-473	±	43.0	81-chu/kay	473.15	0.445	-316	±	32.1	81-chu/kay
403.15	0.649	-357	±	35.0	81-chu/kay	473.15	0.649	-228	±	26.0	81-chu/kay
403.15	0.820	-274	±	29.2	81-chu/kay	473.15	0.919	-161	±	21.3	81-chu/kay
403.15	0.919	-236	±	24.7	81-chu/kay	486.49	0.150	-426	±	39.8	81-chu/kay
405.45	0.820	-253	±	27.7	81-chu/kay	493.15	0.000	-474	±	33.7	81-chu/kay
426.15	0.000	-679	±	44.0	81-chu/kay	493.15	0.150	-411	±	38.8	81-chu/kay
426.15	0.150	-588	±	51.2	81-chu/kay	493.15	0.445	-280	±	29.6	81-chu/kay
426.15	0.445	-403	±	38.2	81-chu/kay	493.15	0.649	-214	±	25.0	81-chu/kay
426.15	0.649	-304	±	31.3	81-chu/kay	493.15	0.919	-148	±	20.4	81-chu/kay
426.15	0.820	-230	±	26.1	81-chu/kay	497.85	0.000	-459	±	33.0	81-chu/kay
426.15	0.919	-210	±	22.2	81-chu/kay						

Propane [74-98-6] C_3H_8 MW = 44.10 **705**
3-Methylpentane [96-14-0] C_6H_{14} MW = 86.18

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
383.15	0.000	-926	±	56.3	81-chu/kay	453.15	0.145	-499	±	39.9	81-chu/kay
383.15	0.152	-792	±	57.5	81-chu/kay	453.15	0.445	-350	±	31.0	81-chu/kay
383.15	0.445	-532	±	41.9	81-chu/kay	453.15	0.834	-211	±	22.7	81-chu/kay
383.15	0.834	-311	±	28.7	81-chu/kay	453.15	0.885	-188	±	21.3	81-chu/kay
383.15	0.885	-282	±	26.9	81-chu/kay	462.68	0.445	-331	±	29.9	81-chu/kay
391.01	0.885	-268	±	26.1	81-chu/kay	473.15	0.000	-543	±	37.2	81-chu/kay
403.15	0.000	-819	±	51.0	81-chu/kay	473.15	0.152	-443	±	36.6	81-chu/kay
403.15	0.152	-665	±	49.9	81-chu/kay	473.15	0.445	-313	±	28.8	81-chu/kay
403.15	0.445	-472	±	38.3	81-chu/kay	473.15	0.834	-196	±	21.8	81-chu/kay
403.15	0.834	-282	±	26.9	81-chu/kay	473.15	0.885	-172	±	20.3	81-chu/kay
403.15	0.885	-258	±	25.5	81-chu/kay	492.65	0.145	-403	±	34.2	81-chu/kay
404.92	0.834	-276	±	26.6	81-chu/kay	493.15	0.000	-487	±	34.4	81-chu/kay
426.15	0.000	-691	±	44.6	81-chu/kay	493.15	0.145	-409	±	34.5	81-chu/kay
426.15	0.152	-578	±	44.7	81-chu/kay	493.15	0.445	-284	±	27.0	81-chu/kay
426.15	0.445	-415	±	34.9	81-chu/kay	493.15	0.834	-181	±	20.9	81-chu/kay
426.15	0.834	-244	±	24.6	81-chu/kay	493.15	0.885	-161	±	19.7	81-chu/kay
426.15	0.885	-225	±	23.5	81-chu/kay	504.62	0.000	-450	±	32.5	81-chu/kay
453.15	0.000	-592	±	39.6	81-chu/kay						

Propane [74-98-6] C_3H_8 MW = 44.10 **706**
2,2-Dimethylbutane [75-83-2] C_6H_{14} MW = 86.18

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$			Ref.
383.15	0.000	-753	±	47.7	81-chu/kay	426.15	0.821	-214	±	22.8	81-chu/kay
383.15	0.153	-674	±	50.4	81-chu/kay	426.15	0.919	-188	±	21.3	81-chu/kay
383.15	0.449	-496	±	39.8	81-chu/kay	447.73	0.449	-336	±	30.2	81-chu/kay
383.15	0.659	-392	±	33.5	81-chu/kay	453.15	0.000	-522	±	36.1	81-chu/kay
383.15	0.821	-281	±	26.9	81-chu/kay	453.15	0.153	-464	±	37.8	81-chu/kay
383.15	0.919	-245	±	24.7	81-chu/kay	453.15	0.449	-324	±	29.4	81-chu/kay
385.15	0.919	-241	±	24.5	81-chu/kay	453.15	0.659	-259	±	25.5	81-chu/kay
401.93	0.821	-254	±	25.2	81-chu/kay	473.15	0.000	-479	±	34.0	81-chu/kay
403.15	0.000	-698	±	44.9	81-chu/kay	473.15	0.153	-417	±	35.0	81-chu/kay
403.15	0.153	-594	±	45.6	81-chu/kay	473.15	0.449	-296	±	27.8	81-chu/kay
403.15	0.449	-431	±	35.9	81-chu/kay	473.15	0.659	-229	±	23.7	81-chu/kay
403.15	0.659	-348	±	30.9	81-chu/kay	473.15	0.821	-170	±	20.2	81-chu/kay
403.15	0.821	-256	±	25.4	81-chu/kay	477.91	0.153	-416	±	35.0	81-chu/kay
403.15	0.919	-219	±	23.1	81-chu/kay	489.01	0.000	-440	±	32.0	81-chu/kay
425.36	0.659	-310	±	28.6	81-chu/kay	493.15	0.000	-424	±	31.2	81-chu/kay
426.15	0.000	-612	±	40.6	81-chu/kay	493.15	0.153	-359	±	31.5	81-chu/kay
426.15	0.153	-508	±	41.1	81-chu/kay	493.15	0.449	-272	±	26.3	81-chu/kay
426.15	0.449	-378	±	32.7	81-chu/kay	493.15	0.659	-213	±	22.8	81-chu/kay
426.15	0.659	-310	±	28.6	81-chu/kay						

Propane [74-98-6] C_3H_8 MW = 44.10 **707**
2,3-Dimethylbutane [79-29-8] C_6H_{14} MW = 86.18

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
383.15	0.152	-763 ± 55.8	81-chu/kay	453.15	0.152	-500 ± 40.0	81-chu/kay
383.15	0.452	-527 ± 41.6	81-chu/kay	453.15	0.452	-353 ± 31.2	81-chu/kay
383.15	0.651	-404 ± 34.2	81-chu/kay	453.15	0.651	-271 ± 26.3	81-chu/kay
383.15	0.915	-281 ± 26.9	81-chu/kay	453.15	0.915	-189 ± 21.3	81-chu/kay
387.50	0.915	-274 ± 28.4	81-chu/kay	459.36	0.452	-345 ± 30.7	81-chu/kay
403.15	0.000	-827 ± 51.4	81-chu/kay	473.15	0.000	-558 ± 37.9	81-chu/kay
403.15	0.152	-674 ± 50.4	81-chu/kay	473.15	0.152	-467 ± 38.0	81-chu/kay
403.15	0.452	-470 ± 38.2	81-chu/kay	473.15	0.452	-323 ± 29.4	81-chu/kay
403.15	0.651	-360 ± 31.6	81-chu/kay	473.15	0.651	-253 ± 25.2	81-chu/kay
403.15	0.915	-258 ± 25.5	81-chu/kay	473.15	0.915	-170 ± 20.2	81-chu/kay
426.15	0.000	-725 ± 46.3	81-chu/kay	488.41	0.152	-435 ± 36.1	81-chu/kay
426.15	0.152	-583 ± 45.0	81-chu/kay	493.15	0.000	-518 ± 35.9	81-chu/kay
426.15	0.452	-404 ± 34.2	81-chu/kay	493.15	0.152	-429 ± 35.7	81-chu/kay
426.15	0.651	-318 ± 29.1	81-chu/kay	493.15	0.452	-297 ± 27.8	81-chu/kay
426.15	0.915	-222 ± 23.3	81-chu/kay	493.15	0.651	-225 ± 23.5	81-chu/kay
432.05	0.651	-307 ± 28.4	81-chu/kay	493.15	0.915	-157 ± 19.4	81-chu/kay
453.15	0.000	-617 ± 40.9	81-chu/kay	500.23	0.000	-505 ± 35.3	81-chu/kay

Propane [74-98-6] C_3H_8 MW = 44.10 **708**
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
383.20	-537 ± 21	79-wor/lew	413.20	-448 ± 21	79-wor/lew
403.20	-490 ± 20	79-wor/lew			

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
338.60	0.500	-893 ± 30	62-mcg/pot	373.20	0.500	-697 ± 25	62-mcg/pot
348.50	0.500	-830 ± 30	62-mcg/pot	383.50	0.500	-653 ± 25	62-mcg/pot
354.90	0.500	-793 ± 30	62-mcg/pot	393.40	0.500	-607 ± 25	62-mcg/pot
363.50	0.500	-750 ± 30	62-mcg/pot	403.30	0.500	-577 ± 20	62-mcg/pot
365.50	0.500	-732 ± 30	62-mcg/pot	414.20	0.500	-533 ± 20	62-mcg/pot

Propane [74-98-6] C_3H_8 **MW = 44.10** **709**
Octane [111-65-9] C_8H_{18} **MW = 114.23**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
403.20	-541 ± 28	79-wor/lew	413.20	-508 ± 27	79-wor/lew
410.20	-512 ± 27	79-wor/lew			

Table 3. Experimental B_m values with uncertainty.

T / K	x_1	$B_m \pm \delta B_m$ / cm³· mol⁻¹	Ref.	T / K	x_1	$B_m \pm \delta B_m$ / cm³· mol⁻¹	Ref.
353.20	0.500	-1007 ± 30	62-mcg/pot	377.40	0.500	-849 ± 25	62-mcg/pot
362.60	0.500	-937 ± 30	62-mcg/pot	382.90	0.500	-820 ± 25	62-mcg/pot
363.00	0.500	-913 ± 30	62-mcg/pot	393.60	0.500	-749 ± 25	62-mcg/pot
367.60	0.500	-922 ± 30	62-mcg/pot	404.00	0.500	-690 ± 20	62-mcg/pot
373.00	0.500	-894 ± 30	62-mcg/pot	413.80	0.500	-654 ± 20	62-mcg/pot

1-Propanol [71-23-8] C_3H_8O **MW = 60.09** **710**
Heptane [142-82-5] C_7H_{16} **MW = 100.20**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / cm³· mol⁻¹	Ref.
423.15	-390 ± 54	82-zaw/vej	523.15	-300 ± 53	82-zaw/vej
448.15	-349 ± 54	82-zaw/vej	548.15	-251 ± 53	82-zaw/vej
473.15	-330 ± 53	82-zaw/vej	573.15	-220 ± 52	82-zaw/vej
498.15	-313 ± 53	82-zaw/vej			

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / cm³· mol⁻¹	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / cm³· mol⁻¹	Ref.
423.15	0.000	-587 ± 11	82-zaw/vej	498.15	0.670	-460 ± 5	82-zaw/vej
423.15	0.308	-581 ± 6	82-zaw/vej	498.15	1.000	-691 ± 16	82-zaw/vej
423.15	0.466	-595 ± 3	82-zaw/vej	523.15	0.000	-288 ± 7	82-zaw/vej
423.15	0.670	-664 ± 23	82-zaw/vej	523.15	0.308	-330 ± 3	82-zaw/vej
423.15	1.000	-1047 ± 39	82-zaw/vej	523.15	0.466	-365 ± 5	82-zaw/vej
448.15	0.000	-488 ± 13	82-zaw/vej	523.15	0.670	-419 ± 7	82-zaw/vej
448.15	0.308	-492 ± 16	82-zaw/vej	523.15	1.000	-602 ± 15	82-zaw/vej
448.15	0.466	-517 ± 4	82-zaw/vej	548.15	0.000	-260 ± 6	82-zaw/vej
448.15	0.670	-575 ± 4	82-zaw/vej	548.15	0.308	-291 ± 8	82-zaw/vej
448.15	1.000	-900 ± 22	82-zaw/vej	548.15	0.466	-313 ± 7	82-zaw/vej
473.15	0.000	-407 ± 27	82-zaw/vej	548.15	0.670	-371 ± 52	82-zaw/vej
473.15	0.308	-425 ± 14	82-zaw/vej	548.15	1.000	-525 ± 12	82-zaw/vej
473.15	0.466	-455 ± 34	82-zaw/vej	573.15	0.000	-229 ± 6	82-zaw/vej
473.15	0.670	-517 ± 3	82-zaw/vej	573.15	0.308	-252 ± 12	82-zaw/vej
473.15	1.000	-762 ± 51	82-zaw/vej	573.15	0.466	-270 ± 6	82-zaw/vej
498.15	0.000	-339 ± 21	82-zaw/vej	573.15	0.670	-334 ± 16	82-zaw/vej
498.15	0.308	-373 ± 24	82-zaw/vej	573.15	1.000	-468 ± 72	82-zaw/vej
498.15	0.466	-404 ± 5	82-zaw/vej				

Decafluorobutane **[355-25-9]** **C_4F_{10}** **MW = 238.03** **711**
Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12**

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

B_{12}/cm^3·mol^{-1} = 9.3979 · 10^2 – 4.8933 · 10^5/(T/K)

T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}	T/K	(B_{12} ± 2σ_{est})/cm^3· mol^{-1}
300	-691.3 ± 50	350	-458.3 ± 50		
325	-565.8 ± 50	375	-365.1 ± 40		

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)	T/K	B_{exp} ± δB / cm^3· mol^{-1}	B_{exp} - B_{calc} / cm^3· mol^{-1}	Ref. (Symbol in Fig. 1)
283.15	-766 ± 50	22.4	62-tri/dun(◆)	323.15	-538 ± 12	36.5	71-dan/kno(■)
283.15	-792 ± 50	-3.6	62-tri/dun(◆)	323.20	-604 ± 50	-29.8	62-tri/dun(◆)
298.15	-643 ± 16	58.4	71-dan/kno(■)	323.20	-593 ± 50	-18.8	62-tri/dun(◆)
303.03	-666 ± 50	9.0	62-tri/dun(◆)	323.20	-636 ± 50	-61.8	62-tri/dun(◆)
303.03	-678 ± 50	-3.0	62-tri/dun(◆)	373.15	-370 ± 10	1.6	71-dan/kno(■)
303.03	-686 ± 50	-11.0	62-tri/dun(◆)				

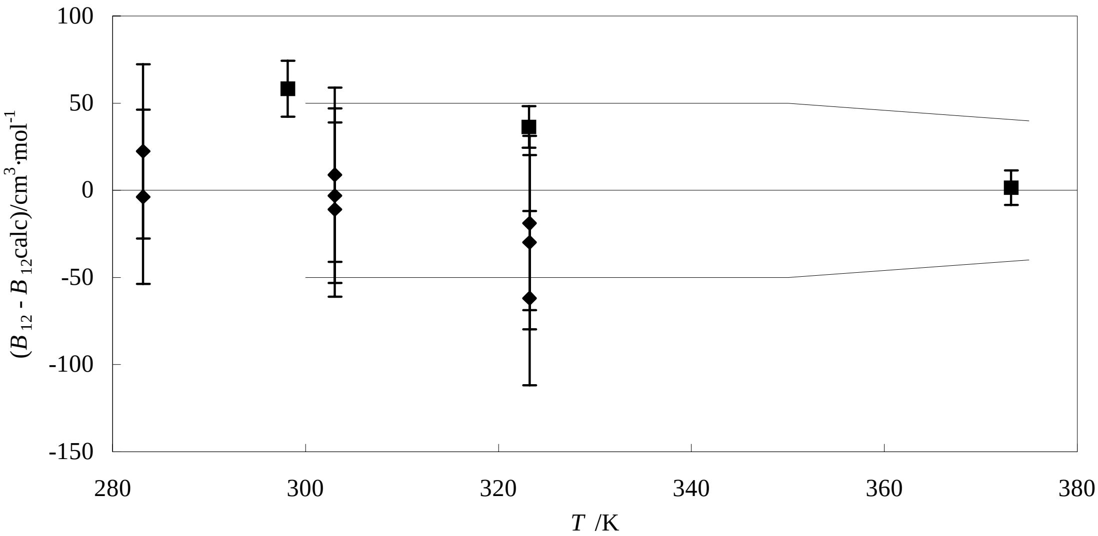

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	B^E ± δB^E / cm^3· mol^{-1}	Ref.	T/K	x_1	B^E ± δB^E / cm^3· mol^{-1}	Ref.
298.15	0.500	158 ± 2	71-dan/kno	373.15	0.500	90 ± 1	71-dan/kno
323.15	0.500	130 ± 2	71-dan/kno				

Decafluorobutane [355-25-9] C_4F_{10} MW = 238.03 **712**
Dodecafluoropentane [678-26-2] C_5F_{12} MW = 288.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-939 ± 50	69-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	27 ± 2	69-dan/kno				

Decafluorobutane [355-25-9] C_4F_{10} MW = 238.03 **713**
Tetradecafluorohexane [355-42-0] C_6F_{14} MW = 338.04

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.15	-733 ± 6	69-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
373.15	0.500	77 ± 4	69-dan/kno				

Decafluorobutane [355-25-9] C_4F_{10} MW = 238.03 **714**
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-830 ± 40	71-dan/kno			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	298 ± 6	71-dan/kno				

Butanone [78-93-3] C_4H_8O MW = 72.11 **715**
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.15	-762 ± 20	65-cha/wan			

1,4-Dioxane [123-91-1] $C_4H_8O_2$ MW = 88.11 **716**
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-846 ± 50	98-wor/par	393.20	-750 ± 50	98-wor/par
378.20	-821 ± 50	98-wor/par	403.20	-709 ± 50	98-wor/par
383.20	-796 ± 50	98-wor/par	413.20	-761 ± 50	98-wor/par
388.20	-773 ± 50	98-wor/par	423.20	-636 ± 50	98-wor/par

1,4-Dioxane [123-91-1] $C_4H_8O_2$ MW = 88.11 **717**
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-688 ± 50	98-wor/par	393.20	-618 ± 50	98-wor/par
378.20	-671 ± 50	98-wor/par	403.20	-582 ± 50	98-wor/par
383.20	-655 ± 50	98-wor/par	413.20	-547 ± 50	98-wor/par
388.20	-636 ± 50	98-wor/par	423.20	-528 ± 50	98-wor/par

Butane [106-97-8] C_4H_{10} MW = 58.12 **718**
2-Methylpropane [75-28-5] C_4H_{10} MW = 58.12

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
344.26	-483.7 ± 3.0	62-con	406.87	-338.1 ± 3.0	62-con
360.93	-437.9 ± 3.0	62-con	410.93	-329.5 ± 3.0	62-con
377.59	-396.9 ± 3.0	62-con	444.26	-273.1 ± 3.0	62-con
394.26	-361.7 ± 3.0	62-con			

Butane [106-97-8] C_4H_{10} MW = 58.12 **719**
Pentane [109-66-0] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	-928 ± 12	68-dan/kno-1	348.20	-635 ± 10	68-dan/kno-1
323.20	-764 ± 10	68-dan/kno-1	373.20	-540 ± 8	68-dan/kno-1

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.20	0.500	35 ± 3	68-dan/kno-1	348.20	0.500	20 ± 2	68-dan/kno-1
323.20	0.500	26 ± 2	68-dan/kno-1	373.20	0.500	14 ± 2	68-dan/kno-1

Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12** **720**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-1111 ± 65	68-dan/kno-1	373.15	-650 ± 20	68-dan/kno-1
323.15	-943 ± 30	68-dan/kno-1	373.20	-651 ± 17	79-wor/lew
348.15	-775 ± 25	68-dan/kno-1	383.60	-610 ± 17	79-wor/lew
363.20	-694 ± 17	79-wor/lew	393.20	-579 ± 17	79-wor/lew

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.500	210 ± 35	68-dan/kno-1	348.15	0.500	95 ± 2	68-dan/kno-1
323.15	0.500	122 ± 5	68-dan/kno-1	373.15	0.500	76 ± 2	68-dan/kno-1

Butane **[106-97-8]** **C_4H_{10}** **MW = 58.12** **721**
Octane **[111-65-9]** **C_8H_{18}** **MW = 114.23**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
403.20	-735 ± 26	79-wor/lew	413.20	-700 ± 24	79-wor/lew
410.50	-714 ± 25	79-wor/lew			

Diethyl ether **[60-29-7]** **$C_4H_{10}O$** **MW = 74.12** **722**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
333.15	-785 ± 52	68-kno/edm	373.20	-769 ± 60	98-bow/lac
353.15	-769 ± 52	68-kno/edm	383.20	-725 ± 60	98-bow/lac
353.20	-872 ± 60	98-bow/lac	393.20	-685 ± 60	98-bow/lac
358.20	-844 ± 60	98-bow/lac	403.20	-649 ± 60	98-bow/lac
363.20	-819 ± 60	98-bow/lac	413.20	-616 ± 60	98-bow/lac
368.20	-793 ± 60	98-bow/lac	423.20	-568 ± 60	98-bow/lac
373.15	-620 ± 52	68-kno/edm			

Diethyl ether [60-29-7] $C_4H_{10}O$ MW = 74.12 **723**
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.20	-822 ± 60	98-bow/lac	383.20	-690 ± 60	98-bow/lac
358.20	-804 ± 60	98-bow/lac	393.20	-622 ± 60	98-bow/lac
363.20	-786 ± 60	98-bow/lac	403.20	-589 ± 60	98-bow/lac
368.20	-750 ± 60	98-bow/lac	413.20	-589 ± 60	98-bow/lac
373.20	-735 ± 60	98-bow/lac	423.20	-557 ± 60	98-bow/lac

Diethyl ether [60-29-7] $C_4H_{10}O$ MW = 74.12 **724**
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
311.71	-1259 ± 38	71-rae/fre	332.66	-1064 ± 32	71-rae/fre
326.20	-1130 ± 50	52-fox/lam	352.00	-940 ± 50	52-fox/lam

Diethylamine [109-89-7] $C_4H_{11}N$ MW = 73.14 **725**
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
349.00	-990 ± 50	54-lam/mur			

Tetramethylsilane [75-76-3] $C_4H_{12}Si$ MW = 88.22 **726**
2,2-Dimethylpropane [463-82-1] C_5H_{12} MW = 72.15

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
300.00	-1155 ± 30	74-bel/rei	430.00	-627 ± 30	74-bel/rei
320.00	-1020 ± 30	74-bel/rei	460.00	-573 ± 30	74-bel/rei
340.00	-920 ± 30	74-bel/rei	490.00	-530 ± 30	74-bel/rei
370.00	-793 ± 30	74-bel/rei	520.00	-494 ± 30	74-bel/rei
400.00	-700 ± 30	74-bel/rei	550.00	-462 ± 30	74-bel/rei

3-Pentanone	**[96-22-0]**	**$C_5H_{10}O$**	**MW = 86.13**	**727**
Benzene	**[71-43-2]**	**C_6H_6**	**MW = 78.11**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-1002 ± 50	98-wor/mat	393.20	-879 ± 50	98-wor/mat
378.20	-968 ± 50	98-wor/mat	403.20	-826 ± 50	98-wor/mat
383.20	-936 ± 50	98-wor/mat	413.20	-780 ± 50	98-wor/mat
388.20	-907 ± 50	98-wor/mat	423.20	-737 ± 50	98-wor/mat

3-Pentanone	**[96-22-0]**	**$C_5H_{10}O$**	**MW = 86.13**	**728**
Cyclohexane	**[110-82-7]**	**C_6H_{12}**	**MW = 84.16**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-990 ± 50	98-wor/mat	393.20	-881 ± 50	98-wor/mat
378.20	-959 ± 50	98-wor/mat	403.20	-831 ± 50	98-wor/mat
383.20	-937 ± 50	98-wor/mat	413.20	-791 ± 50	98-wor/mat
388.20	-912 ± 50	98-wor/mat	423.20	-754 ± 50	98-wor/mat

Dodecafluoropentane	**[678-26-2]**	**C_5F_{12}**	**MW = 288.04**	**729**
Pentane	**[109-66-0]**	**C_5H_{12}**	**MW = 72.15**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
307.90	-969 ± 19	59-gar/mcc	373.15	-588 ± 25	71-dan/kno
323.15	-853 ± 30	71-dan/kno	383.30	-625 ± 6	59-gar/mcc
337.90	-693 ± 16	59-gar/mcc			

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	228 ± 10	71-dan/kno	373.15	0.500	152 ± 6	71-dan/kno

Pentane	**[109-66-0]**	**C_5H_{12}**	**MW = 72.15**	**730**
Tetradecafluorohexane	**[355-42-0]**	**C_6F_{14}**	**MW = 338.04**	

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
308.00	-1184 ± 54	59-gar/mcc	384.20	-643 ± 41	59-gar/mcc
338.10	-895 ± 15	59-gar/mcc			

Pentane [109-66-0] C_5H_{12} MW = 72.15 731
Fluorobenzene [462-06-6] C_6H_5F MW = 96.10

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
443.20	-525 ± 15	73-bel/sul	473.20	-436 ± 15	73-bel/sul
453.20	-480 ± 15	73-bel/sul	483.20	-416 ± 15	73-bel/sul
463.20	-461 ± 15	73-bel/sul	493.20	-361 ± 15	73-bel/sul

Pentane [109-66-0] C_5H_{12} MW = 72.15 732
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
433.20	-487 ± 10	71-zaa/bel-1	463.20	-404 ± 10	71-zaa/bel-1
443.20	-456 ± 10	71-zaa/bel-1	473.20	-380 ± 10	71-zaa/bel-1
453.20	-434 ± 10	71-zaa/bel-1			

Pentane [109-66-0] C_5H_{12} MW = 72.15 733
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-1229 ± 40	68-dan/kno-1	373.15	-838 ± 20	68-dan/kno-1
343.20	-1023 ± 21	79-wor/lew	383.20	-783 ± 18	79-wor/lew
348.15	-997 ± 30	68-dan/kno-1	403.20	-689 ± 15	79-wor/lew
363.20	-893 ± 19	79-wor/lew			

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	26 ± 6	68-dan/kno-1	373.15	0.500	20 ± 2	68-dan/kno-1
348.15	0.500	28 ± 2	68-dan/kno-1				

Pentane [109-66-0] C_5H_{12} MW = 72.15 734
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
393.20	-871 ± 20	79-wor/lew	413.20	-774 ± 19	79-wor/lew
403.20	-823 ± 20	79-wor/lew			

Pentane **[109-66-0]** **C_5H_{12}** **MW = 72.15** **735**
Octane **[111-65-9]** **C_8H_{18}** **MW = 114.23**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
403.20	-953 ± 25	79-wor/lew	413.20	-895 ± 23	79-wor/lew

Hexafluorobenzene **[392-56-3]** **C_6F_6** **MW = 186.06** **736**
Benzene **[71-43-2]** **C_6H_6** **MW = 78.11**

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	-1029 ± 20	69-dan/kno-1	373.15	0.500	-343 ± 15	69-dan/kno-1
348.15	0.500	-555 ± 12	69-dan/kno-1	373.15	0.500	-353 ± 3	69-dan/kno-1

Hexafluorobenzene **[392-56-3]** **C_6F_6** **MW = 186.06** **737**
Cyclohexane **[110-82-7]** **C_6H_{12}** **MW = 84.16**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	-1238 ± 50	69-dan/kno	389.69	-830 ± 40	69-pow
364.20	-997 ± 50	69-pow	414-86	-690 ± 35	69-pow

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	0.500	98 ± 10	69-dan/kno-1				

Tetradecafluorohexane **[355-42-0]** **C_6F_{14}** **MW = 338.04** **738**
Hexane **[110-54-3]** **C_6H_{14}** **MW = 86.18**

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	-1297 ± 40	71-dan/kno	373.15	-871 ± 30	71-dan/kno

Table 4. Experimental B^E values with uncertainty.

T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
323.15	0.500	315 ± 10	71-dan/kno	373.15	0.500	211 ± 5	71-dan/kno

Bromobenzene [108-86-1] C_6H_5Br MW = 157.01 739
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	-2166 ± 75	72-kho/mah			

Chlorobenzene [108-90-7] C_6H_5Cl MW = 112.56 740
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
303.20	-2025 ± 70	72-kho/mah			

Fluorobenzene [462-06-6] C_6H_5F MW = 96.10 741
Benzene [71-43-2] C_6H_6 MW = 78.11

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
453.20	-598 ± 60	72-zaa/bel	483.20	-507 ± 60	72-zaa/bel
463.20	-563 ± 60	72-zaa/bel	493.20	-471 ± 60	72-zaa/bel
473.20	-540 ± 60	72-zaa/bel			

Table 3. Experimental B_m values with uncertainty.

T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
498.15	0.50	-468.9 ± 30	89-abd/dzh	548.15	0.25	-378.7 ± 20	89-abd/dzh
498.15	0.25	-477.6 ± 30	89-abd/dzh	598.15	0.50	-301.3 ± 25	89-abd/dzh
523.15	0.50	-418.8 ± 30	89-abd/dzh	598.15	0.25	-304.6 ± 18	89-abd/dzh
523.15	0.25	-405.2 ± 30	89-abd/dzh	623.15	0.50	-271.4 ± 20	89-abd/dzh
533.15	0.50	-333.5 ± 25	89-abd/dzh	623.15	0.25	-272.7 ± 18	89-abd/dzh
533.15	0.25	-339.2 ± 20	89-abd/dzh	648.15	0.50	-243.2 ± 20	89-abd/dzh
548.15	0.50	-373.7 ± 25	89-abd/dzh	648.15	0.25	-246.8 ± 16	89-abd/dzh

Table 5. Experimental C_m values with uncertainty.

T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.	T / K	x_2	$C_m \pm \delta C_m$ / $10^3 \cdot cm^6 \cdot mol^{-2}$	Ref.
498.15	0.50	54.0 ± 6.0	89-abd/dzh	548.15	0.25	53.6 ± 5.0	89-abd/dzh
498.15	0.25	60.2 ± 6.0	89-abd/dzh	598.15	0.50	38.5 ± 5.0	89-abd/dzh
523.15	0.50	54.7 ± 6.0	89-abd/dzh	598.15	0.25	40.6 ± 4.0	89-abd/dzh
523.15	0.25	59.4 ± 5.0	89-abd/dzh	623.15	0.50	31.8 ± 5.0	89-abd/dzh
533.15	0.50	45.5 ± 6.0	89-abd/dzh	623.15	0.25	32.4 ± 3.5	89-abd/dzh
533.15	0.25	48.1 ± 4.5	89-abd/dzh	648.15	0.50	24.8 ± 4.0	89-abd/dzh
548.15	0.50	50.0 ± 6.0	89-abd/dzh	648.15	0.25	24.5 ± 3.0	89-abd/dzh

Fluorobenzene **[462-06-6]** **C_6H_5F** **MW = 96.10** **742**
4-Fluorotoluene **[352-32-9]** **C_7H_7F** **MW = 110.13**

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{12}	±	δB_{12} (cm³·mol⁻¹)	Ref.	T/K	B_{12}	±	δB_{12} (cm³·mol⁻¹)	Ref.
453.00	-666.0	±	50.7	84-bel/sul	483.00	-598.0	±	45.6	84-bel/sul
463.00	-647.0	±	49.2	84-bel/sul	493.00	-584.0	±	44.5	84-bel/sul
473.00	-620.0	±	47.2	84-bel/sul	503.00	-565.0	±	43.1	84-bel/sul

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	B_m	±	δB_m (cm³·mol⁻¹)	Ref.	T/K	x_2	B_m	±	δB_m (cm³·mol⁻¹)	Ref.
443.00	0.25	-659.0	±	41.1	84-bel/sul	483.00	0.25	-567.0	±	34.7	84-bel/sul
453.00	0.25	-634.0	±	39.4	84-bel/sul	483.00	0.50	-634.0	±	39.4	84-bel/sul
453.00	0.50	-721.0	±	45.5	84-bel/sul	483.00	0.75	-651.0	±	40.6	84-bel/sul
453.00	0.75	-747.0	±	47.3	84-bel/sul	493.00	0.25	-540.0	±	32.8	84-bel/sul
463.00	0.25	-610.0	±	37.7	84-bel/sul	493.00	0.50	-601.0	±	37.1	84-bel/sul
463.00	0.50	-696.0	±	43.7	84-bel/sul	493.00	0.75	-633.0	±	39.3	84-bel/sul
463.00	0.75	-727.0	±	45.9	84-bel/sul	503.00	0.25	-520.0	±	31.4	84-bel/sul
473.00	0.25	-580.0	±	35.6	84-bel/sul	503.00	0.50	-573.0	±	35.1	84-bel/sul
473.00	0.50	-660.0	±	41.2	84-bel/sul	503.00	0.75	-615.0	±	38.1	84-bel/sul
473.00	0.75	-714.0	±	45.0	84-bel/sul						

Fluorobenzene **[462-06-6]** **C_6H_5F** **MW = 96.10** **743**
2-Fluorotoluene **[95-52-3]** **C_7H_7F** **MW = 110.13**

Table 2. Experimental B_{12} values with uncertainty.

T/K	B_{12}	±	δB_{12} (cm³·mol⁻¹)	Ref.	T/K	B_{12}	±	δB_{12} (cm³·mol⁻¹)	Ref.
433.00	-607	±	45	81-bel/sul	473.00	-607	±	45	81-bel/sul
443.00	-613	±	45	81-bel/sul	483.00	-603	±	45	81-bel/sul
453.00	-612	±	45	81-bel/sul	493.00	-597	±	45	81-bel/sul
463.00	-609	±	45	81-bel/sul					

Table 3. Experimental B_m values with uncertainty.

T/K	x_1	B_m	±	δB_m (cm³·mol⁻¹)	Ref.	T/K	x_1	B_m	±	δB_m (cm³·mol⁻¹)	Ref.
433.00	0.50	-715	±	30	81-bel/sul	463.00	0.75	-596	±	30	81-bel/sul
433.00	0.75	-677	±	30	81-bel/sul	473.00	0.25	-682	±	30	81-bel/sul
443.00	0.25	-777	±	30	81-bel/sul	473.00	0.50	-635	±	30	81-bel/sul
443.00	0.50	-695	±	30	81-bel/sul	473.00	0.75	-576	±	30	81-bel/sul
443.00	0.75	-647	±	30	81-bel/sul	483.00	0.25	-650	±	30	81-bel/sul
453.00	0.25	-746	±	30	81-bel/sul	483.00	0.50	-615	±	30	81-bel/sul
453.00	0.50	-675	±	30	81-bel/sul	483.00	0.75	-558	±	30	81-bel/sul
453.00	0.75	-620	±	30	81-bel/sul	493.00	0.25	-620	±	30	81-bel/sul
463.00	0.25	-713	±	30	81-bel/sul	493.00	0.50	-596	±	30	81-bel/sul
463.00	0.50	-655	±	30	81-bel/sul	493.00	0.75	-543	±	30	81-bel/sul

Fluorobenzene [462-06-6] C_6H_5F MW = 96.10 744
Toluene [108-88-3] C_7H_8 MW = 92.14

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
443.20	-795 ± 20	76-bel/sul	473.20	-655 ± 20	76-bel/sul
453.20	-774 ± 20	76-bel/sul	483.20	-576 ± 20	76-bel/sul
463.20	-709 ± 20	76-bel/sul	493.20	-519 ± 20	76-bel/sul

Fluorobenzene [462-06-6] C_6H_5F MW = 96.10 745
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
433.20	-772 ± 20	76-bel/sul-2	473.20	-564 ± 20	76-bel/sul-2
443.20	-706 ± 20	76-bel/sul-2	483.20	-536 ± 20	76-bel/sul-2
453.20	-648 ± 20	76-bel/sul-2	493.20	-515 ± 20	76-bel/sul-2
463.20	-600 ± 20	76-bel/sul-2			

Fluorobenzene [462-06-6] C_6H_5F MW = 96.10 746
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
443.20	-993 ± 60	74-sul/bel	473.20	-855 ± 51	74-sul/bel
453.20	-944 ± 57	74-sul/bel	483.20	-816 ± 49	74-sul/bel
463.20	-897 ± 54	74-sul/bel	493.20	-782 ± 47	74-sul/bel

Benzene [71-43-2] C_6H_6 MW = 78.11 747
Cyclohexane [110-82-7] C_6H_{12} MW = 84.16

Table 1. Recommended values given by the following equation whose coefficients were obtained by a weighted least square fit of the selected experimental values:

$$B_{12}/cm^3 \cdot mol^{-1} = 1.8243 \cdot 10^3 - 9.9756 \cdot 10^5/(T/K)$$

T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$	T/K	$(B_{12} \pm 2\sigma_{est})/cm^3 \cdot mol^{-1}$
310	-1393.6 ± 40	350	-1025.9 ± 20		
325	-1245.1 ± 30	375	-835.9 ± 15		

cont.

Benzene + Cyclohexane (cont.)

Table 2. Experimental B_{12} values with uncertainty.

T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)	T/K	$B_{exp} \pm \delta B$ / $cm^3 \cdot mol^{-1}$	$B_{exp} - B_{calc}$ / $cm^3 \cdot mol^{-1}$	Ref. (Symbol in Fig. 1)
308.00	-1364 ± 20	50.5	80-pas/han(▲)	343.20	-1109 ± 20	-26.7	55-wae(◆)
308.20	-1346 ± 10	66.4	62-bot/coo-1(◇)	343.20	-1041 ± 10	41.3	62-bot/coo-1(◇)
323.00	-1280 ± 1.2	-15.9	80-pas/han(▲)	348.00	-1090 ± 1.2	-47.7	80-pas/han(▲)
323.20	-1215 ± 10	47.2	62-bot/coo-1(◇)	348.20	-1075 ± 9	-34.4	55-wae(◆)
328.20	-1227 ± 30	-11.8	55-wae(◆)	373.00	-840 ± 1	10.1	80-pas/han(▲)
333.20	-1203 ± 23	-33.4	55-wae(◆)	373.20	-918 ± 8	-69.3	60-cox/stu(■)
338.20	-1158 ± 12	-32.7	55-wae(◆)				

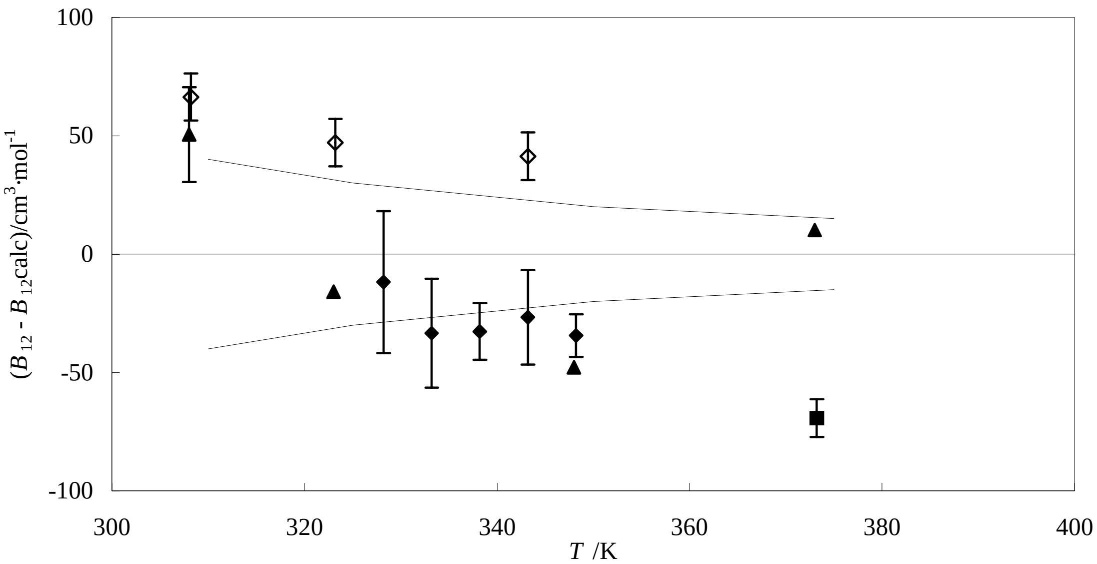

Fig. 1. The symbols show the deviation of the calculated from the experimental values from Table 2. The error bars represent the experimental errors. (Error bars smaller than the symbols are omitted for clarity of the figure.)

Table 3. Experimental B_m values with uncertainty.

T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.	T/K	x_2	$B_m \pm \delta B_m$ / $cm^3 \cdot mol^{-1}$	Ref.
318.15	0.40	-1273 ± 60	79-pat	463.15	0.50	-552 ± 10	76-bel/sul-1
318.15	0.38	-1277 ± 60	79-pat	463.15	0.75	-568 ± 9	76-bel/sul-1
433.15	0.25	-641 ± 13	76-bel/sul-1	473.15	0.25	-520 ± 7	76-bel/sul-1
433.15	0.50	-652 ± 15	76-bel/sul-1	473.15	0.50	-529 ± 8	76-bel/sul-1
433.15	0.75	-653 ± 23	76-bel/sul-1	473.15	0.75	-546 ± 8	76-bel/sul-1
443.15	0.25	-602 ± 7	76-bel/sul-1	483.15	0.25	-497 ± 11	76-bel/sul-1
443.15	0.50	-611 ± 10	76-bel/sul-1	483.15	0.50	-504 ± 7	76-bel/sul-1
443.15	0.75	-618 ± 12	76-bel/sul-1	483.15	0.75	-526 ± 3	76-bel/sul-1
453.15	0.25	-570 ± 8	76-bel/sul-1	493.15	0.25	-447 ± 13	76-bel/sul-1
453.15	0.50	-580 ± 8	76-bel/sul-1	493.15	0.50	-481 ± 13	76-bel/sul-1
453.15	0.75	-590 ± 9	76-bel/sul-1	493.15	0.75	-505 ± 9	76-bel/sul-1
463.15	0.25	-543 ± 9	76-bel/sul-1				

cont.

Benzene + Cyclohexane (cont.)

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
300.00	0.50	175 ± 50	80-mce/sha	348.00	0.50	25 ± 2	80-pas/han
308.00	0.50	56 ± 10	80-pas/han	348.16	0.50	19 ± 3	80-mce/sha
315.16	0.50	40 ± 15	80-mce/sha	373.00	0.50	22 ± 3	80-pas/han
323.00	0.50	30 ± 2	80-pas/han	373.16	0.50	21 ± 3	80-mce/sha
323.16	0.50	44 ± 1	80-mce/sha				

Benzene [71-43-2] C_6H_6 MW = 78.11 **748**
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-1644 ± 6.9	83-bat/mal	398.15	-783 ± 2.2	83-bat/mal
298.15	-1633 ± 6.9	83-bat/mal	398.15	-783 ± 2.2	83-bat/mal
323.15	-1326 ± 6.0	83-bat/mal	398.15	-783 ± 2.2	83-bat/mal
323.15	-1327 ± 6.0	83-bat/mal	433.20	-761 ± 10.0	71-zaa/bel
348.15	-1094 ± 5.3	83-bat/mal	443.20	-738 ± 10.0	71-zaa/bel
348.15	-1091 ± 5.3	83-bat/mal	453.20	-674 ± 10.0	71-zaa/bel
348.15	-1096 ± 5.3	83-bat/mal	463.20	-610 ± 10.0	71-zaa/bel
348.15	-1096 ± 5.3	83-bat/mal	473.20	-557 ± 10.0	71-zaa/bel
373.15	-917 ± 2.3	83-bat/mal	478.20	-545 ± 10.0	71-zaa/bel
373.15	-913 ± 2.3	83-bat/mal	483.20	-498 ± 10.0	73-bel/ver-1
373.15	-915 ± 2.3	83-bat/mal	493.20	-435 ± 10.0	73-bel/ver-1

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.50	48.0 ± 8.0	83-bat/mal	348.15	0.50	20.0 ± 2.0	83-bat/mal
298.15	0.50	59.0 ± 7.0	83-bat/mal	373.15	0.50	18.6 ± 1.5	83-bat/mal
323.15	0.50	31.0 ± 2.0	83-bat/mal	373.15	0.50	22.8 ± 1.0	83-bat/mal
323.15	0.50	29.0 ± 2.0	83-bat/mal	373.15	0.50	20.9 ± 1.5	83-bat/mal
348.15	0.50	22.0 ± 2.0	83-bat/mal	398.15	0.50	15.5 ± 1.5	83-bat/mal
348.15	0.50	26.0 ± 2.0	83-bat/mal	398.15	0.50	15.4 ± 1.5	83-bat/mal
348.15	0.50	20.0 ± 2.0	83-bat/mal	398.15	0.50	15.4 ± 1.5	83-bat/mal

Benzene [71-43-2] C_6H_6 MW = 78.11 **749**
Toluene [108-88-3] C_7H_8 MW = 92.14

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
453.20	-676 ± 10	74-bel/sul	483.20	-559 ± 10	74-bel/sul
463.20	-637 ± 10	74-bel/sul	493.20	-530 ± 10	74-bel/sul
473.20	-594 ± 10	74-bel/sul			

Benzene [71-43-2] C_6H_6 MW = 78.11 **750**
Heptane [142-82-5] C_7H_{16} MW = 100.20

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
463.20	-668 ± 20	67-bel/zaa	493.20	-546 ± 20	67-bel/zaa
473.20	-621 ± 20	67-bel/zaa	503.20	-523 ± 20	67-bel/zaa
483.20	-581 ± 20	67-bel/zaa			

Benzene [71-43-2] C_6H_6 MW = 78.11 **751**
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
478.20	-666 ± 10	71-zaa/bel-2	498.20	-595 ± 10	71-zaa/bel-2
488.20	-642 ± 10	71-zaa/bel-2			

Benzene [71-43-2] C_6H_6 MW = 78.11 **752**
1,7,7-Trimethylbicyclo[2.2.1]-2-heptanone
[76-22-2] $C_{10}H_{16}O$ MW = 152.24

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
353.15	-825 ± 20	65-cha/wan			

Cyclohexane [110-82-7] C_6H_{14} MW = 84.16 **753**
Hexane [110-54-3] C_6H_{14} MW = 86.18

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	-1764 ± 50	83-bat/mal	348.15	-1177 ± 50	83-bat/mal
298.15	-1780 ± 50	83-bat/mal	373.15	-989 ± 50	83-bat/mal
298.15	-1782 ± 50	83-bat/mal	373.15	-988 ± 50	83-bat/mal
323.15	-1428 ± 50	83-bat/mal	373.15	-989 ± 50	83-bat/mal
323.15	-1428 ± 50	83-bat/mal	398.15	-846 ± 50	83-bat/mal
348.15	-1177 ± 50	83-bat/mal	398.15	-845 ± 50	83-bat/mal

Table 4. Experimental B^E values with uncertainty.

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
298.15	0.50	3.0 ± 7.0	83-bat/mal	323.15	0.50	-7.0 ± 2.0	83-bat/mal
298.15	0.50	-12.0 ± 7.0	83-bat/mal	323.15	0.50	-7.0 ± 2.0	83-bat/mal
298.15	0.50	-15.0 ± 7.0	83-bat/mal	348.15	0.50	-4.7 ± 1.5	83-bat/mal

cont.

Cyclohexane + Hexane (cont.)

Table 4. (cont.)

T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	x_1	$B^E \pm \delta B^E$ / $cm^3 \cdot mol^{-1}$	Ref.
348.15	0.50	-4.2 ± 1.5	83-bat/mal	373.15	0.50	-4.0 ± 1.5	83-bat/mal
373.15	0.50	-4.2 ± 1.5	83-bat/mal	398.15	0.50	-4.1 ± 1.5	83-bat/mal
373.15	0.50	-2.9 ± 1.5	83-bat/mal	398.15	0.50	-3.1 ± 1.5	83-bat/mal

Hexane [110-54-3] C_6H_{14} MW = 86.18 754
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
403.20	-1173 ± 26	79-wor/lew	413.20	-1105 ± 25	79-wor/lew

4-Fluorotoluene [352-32-9] C_7H_7F MW = 110.13 755
Toluene [108-88-3] C_7H_8 MW = 92.14

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-1199 ± 20	75-moz/kol-1	423.20	-868 ± 15	75-moz/kol-1
388.20	-1072 ± 19	75-moz/kol-1	443.20	-779 ± 15	75-moz/kol-1
403.20	-975 ± 16	75-moz/kol-1			

3-Fluorotoluene [352-70-5] C_7H_7F MW = 110.13 756
Toluene [108-88-3] C_7H_8 MW = 92.14

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
373.20	-1218 ± 15	74-moz/kol-1	423.20	-802 ± 15	74-moz/kol-1
388.20	-1069 ± 15	74-moz/kol-1	443.20	-640 ± 15	74-moz/kol-1
403.20	-967 ± 15	74-moz/kol-1	458.20	-516 ± 15	74-moz/kol-1

Heptane [142-82-5] C_7H_{16} MW = 100.20 757
Octane [111-65-9] C_8H_{18} MW = 114.23

Table 2. Experimental B_{12} values with uncertainty.

T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.	T / K	$B_{12} \pm \delta B_{12}$ / $cm^3 \cdot mol^{-1}$	Ref.
403.20	-1407 ± 30	79-wor/lew	413.20	-1322 ± 28	79-wor/lew

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Reference codes are those used in the TRC SOURCE. A reference code consists of the last two digits of the year after 1899, the first three letters of the first author, and the first three letters of the second author. An additional sequence number is used when more than one reference in the database has an identical code.

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