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ESTIMATED VISCOSITIES AND THERMAL CONDUCTIVITIES OF GASES AT HIGH TEMPERATURES

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Lewis Research Center
Cleveland, Ohio

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SUMMARY

Viscosities and thermal conductivities, suitable for heat-transfer calculations, were estimated for about 200 gases in the ground state from 100° to 5000° K and 1-atmosphere pressure. Free radicals were included, but excited states and ions were not. Calculations for the transport coefficients were based upon the Lennard-Jones (12–6) potential for all gases. This potential was selected because: (1) It is one of the most realistic models available and (2) intermolecular force constants can be estimated from physical properties or by other techniques when experimental data are not available; such methods for estimating force constants are not as readily available for other potentials.

When experimental viscosity data were available, they were used to obtain the force constants; otherwise the constants were estimated. These constants were then used to calculate both the viscosities and thermal conductivities tabulated in this report. For thermal conductivities of polyatomic gases an Eucken-type correction was made to correct for exchange between internal and translational energies. Though this correction may be rather poor at low temperatures, it becomes more satisfactory with increasing temperature. It was not possible to obtain force constants from experimental thermal conductivity data except for the inert atoms, because most conductivity data are available at low temperatures only (200° to 400° K), the temperature range where the Eucken correction is probably most in error.

However, if the same set of force constants is used for both viscosity and thermal conductivity, there is a large degree of cancellation of error when these properties are used in heat-transfer equations such as the Dittus-Boelter equation. It is therefore concluded that the properties tabulated in this report are suitable for heat-transfer calculations of gaseous systems.

INTRODUCTION

In designing rockets, heat-transfer calculations must be made for gases in turbulent flow at high temperature. Many commonly used heat-transfer correlations for turbulent flow involve dimensionless groups, which in turn involve the transport properties, viscosity and thermal conductivity. Experimental data for these transport properties are available for most gases which exist at room temperature, and for some gases which are liquids or solids at room temperature, but boil within a few hundred degrees of room temperature. However, the availability of data diminishes rapidly at higher temperatures. For example, there are experimental viscosity data for only nine gases above 1000° K, and for no gases above 2000° K. Thermal conductivity data are even less available. In addition, the problem is complicated by the formation of free radicals at high temperatures for which virtually no experimental data are available. Therefore, it would be desirable to have tabulated viscosities and conductivities for a large number of gases, which are found in rocket exhaust gases, with an accuracy suitable for heat-transfer calculations.

In this report data for about 200 molecules and free radicals are calculated from 100° to 5000° K at 100° K intervals and 1-atmosphere pressure. (The data may also be used for the condition of high pressure and high temperature; but for the condition of high pressure and low temperature

a pressure correction is necessary.) The data are for pure gases in the ground state. Excited states, which become important at high temperatures, have not been considered in calculating the transport properties, insofar as the collision cross sections are concerned. However, excited states have been included in calculating the heat capacities of monatomic and some diatomic gases in order to make use of the best heat-capacity data available. (Heat capacities enter into the thermal conductivity calculation.) The heat-capacity data were obtained at the NASA Lewis Research Center. Programs for the IBM 704 computer were made available to the author for calculating heat capacities from spectroscopic constants.

SYMBOLS

A	constant in inverse exponential repulsion potential
a_0	Bohr radius of hydrogen atom, 0.5292×10^{-8} cm
b	constant in inverse exponential repulsion potential
b_0	second virial coefficient for rigid spheres, $\frac{2}{3}\pi N\sigma^3$, cm^3/(g-mole)
C_p	heat capacity at constant pressure, g-cal/(g-mole) (°K)
C_v	heat capacity at constant volume, g-cal/(g-mole) (°K)
c	constant in Sutherland potential
D	inner diameter of conduit, cm
$\mathscr{D}$	coefficient of diffusion, sq cm/sec
$E(r)$	Slater and Kirkwood dispersion energy between two atoms, ergs
e	electronic charge, statcoulombs
h	heat-transfer coefficient, g-cal/(sq cm)(sec)(°K)
K	constant in inverse power repulsion potential
k	Boltzmann's constant, 1.38×10^{-16} ergs/°K
M	molecular weight, g/g-mole
N	Avogadro's number, 6.023×10^{23} molecules/g-mole
n	number of electrons in highest quantum state
n^*	effective principal quantum number
P_c	critical pressure, atm
p_i	probability of colliding molecules following potential energy path i
Q	mean collision cross section, sq cm
Q_i	collision cross section along potential energy path i, sq cm
R	gas constant, 1.98726 g-cal/(g-mole)(°K)
r	intermolecular separation of colliding molecules, A
r_{max}	value of r corresponding to the infinite potential barrier in modified Buckingham (exp-6) potential, A
$\bar{r}$	mean radius of a Slater orbital, A
S	Sutherland constant
s	constant in inverse-power repulsion potential
T	temperature, °K
T_b	boiling-point temperature, °K
T_c	critical temperature, °K
T_{sub}	sublimation temperature, °K
T^*	reduced temperature, kT/ϵ
u	linear velocity in conduit, cm/sec
V_b	molar volume at boiling point, cu cm
V_m	molar volume at melting point, cu cm
W	screening constant
Z	atomic number
α	polarizability of molecule, cu cm
β	constant in modified Buckingham (exp-6) potential
γ	C_p/C_v
ϵ	maximum energy of attraction between colliding molecules, ergs
η	coefficient of viscosity, g/(cm)(sec)
λ	coefficient of thermal conductivity, g-cal/(cm)(sec)(°K)
λ'	coefficient of translational thermal conductivity, g-cal/(cm)(sec)(°K)
λ''	coefficient of internal thermal conductivity, g-cal/(cm)(sec)(°K)
ρ	density, g/cu cm
σ	low-velocity collision diameter, A
$\varphi(r)$	potential energy of interaction, ergs
$\Omega^{(2,2)*}$	reduced collision integral

METHOD OF CALCULATION

The equation used to calculate the coefficient of viscosity is

$$\eta\times10^6=\frac{26.693\sqrt{MT}}{\sigma^2\Omega^{(2,2)*}} \tag{1}$$

where $\eta\times10^6$ is the viscosity in micropoises, T is the absolute temperature in °K, M is the molecular weight, σ is the collision diameter in angstroms, and $\Omega^{(2,2)*}$ is the reduced collision integral.

These collision integrals in turn depend upon the intermolecular forces of the gas molecules, so that it is necessary to know the potential energy of interaction of the colliding molecules. For this report the Lennard-Jones (12–6) potential has been assumed. Collision integrals for this potential were obtained from reference 1, pages 1126–1127, where they are tabulated as a function of the reduced temperature kT/ϵ. A discussion of a number of different potentials and the reasons for selecting the Lennard-Jones (12–6) over the other potentials are discussed in appendix A.

The equation used to calculate the thermal conductivity is

$$\lambda\times10^6=\frac{R}{M}\left[\frac{15}{4}+1.32\left(\frac{C_p}{R}-\frac{5}{2}\right)\right](\eta\times10^6)$$
$$=(\lambda'+\lambda'')\times10^6 \qquad (2)$$

where

$$\lambda'\times10^6=\frac{15R}{4M}(\eta\times10^6) \qquad (3)$$

and

$$\lambda''\times10^6=1.32\frac{R}{M}\left(\frac{C_p}{R}-\frac{5}{2}\right)(\eta\times10^6) \qquad (4)$$

In equation (2) λ' is the translational thermal conductivity, λ'' is the internal thermal conductivity, and λ is the total thermal conductivity, all in g-cal/(cm)(sec)(°K). A discussion of equation (2), including the assumptions in its derivation, is given in appendix B.

In order to calculate the viscosity and thermal conductivity using equations (1) and (2), respectively, it is necessary to know the force constants σ and ϵ/k of the Lennard-Jones (12–6) potential for each molecule considered. These constants may be obtained directly from either experimental viscosity or thermal conductivity data, or they may be estimated from physical properties or empirical rules when experimental data are unavailable. In this report, when experimental transport data were available, the viscosity data were used to obtain the force constants, and this set of force constants was then used to calculate both the viscosity and thermal conductivity. A discussion of the various methods used to obtain the constants σ and ϵ/k is given in appendix C, and a summary of these methods together with the constants selected for each molecule is given in table I.

Conversion units are given in table II. Calculated values of viscosity and thermal conductivity, using the constants of table I, are given in table III. Some additional calculated viscosities are given in table IV. It will be observed that there are some omissions for low-temperature properties of some molecules. This was because these low temperatures corresponded to reduced temperatures which were outside the range of the tabulated collision integrals of reference 1, pages 1126–1127.

CONCLUDING REMARKS

The transport properties presented in this report are believed to be suitable for most engineering calculations, such as for heat transfer in rocket exhaust gases. For example, in forced-convection, turbulent-flow heat transfer in a circular conduit, a commonly used correlation of dimensionless groups is the Dittus-Boelter equation:

$$\frac{hD}{\lambda}=0.023\left(\frac{Du\rho}{\eta}\right)^{0.8}\left(\frac{C_p\eta}{M\lambda}\right)^{0.4} \qquad (5)$$

Combining all transport properties on the right side of equation (5) shows that the heat-transfer coefficient h is a function of $\lambda^{0.6}/\eta^{0.4}$. It can be seen that the uncertainty in the heat-transfer coefficient is less than that of the transport properties, because the exponent on each transport coefficient is less than unity. In addition to this, it can be shown (ref. 2) that, if the same set of force constants is used to calculate both viscosity and thermal conductivity, the errors in each property tend to be in the same direction. Therefore, since there is a ratio of the two transport properties, there is a certain amount of cancellation of error. To illustrate, consider the extreme case where each transport property enters to the same power, such as in the Prandtl number. When the same force constants are used, equation (2) may be used to write the Prandtl number as follows:

$$\frac{C_p\eta}{M\lambda}=\frac{C_p}{R\left[\frac{15}{4}+1.32\left(\frac{C_p}{R}-\frac{5}{2}\right)\right]} \qquad (6)$$

Thus, it can be seen that by using a consistent set of constants the Prandtl number is independent of the intermolecular potential. The result of these two effects is that large uncertainties in the transport properties give only small errors in the heat-transfer coefficient.

The properties calculated in this report are all for pure gases, whereas properties of mixtures of nonreacting gas systems are often desired. Rigorous mixing equations are available (ref. 1, pp. 531–538) but require considerable computation for all but the simplest systems. Equations have been proposed which approximate these rigorous equations. They have shown good agreement with the rigorous equations, yet require considerably less computational work. A set of alinement charts has been prepared based upon these approximate equations (ref. 3), which can be used to reduce the calculations considerably for a multicomponent system.

Heat capacities and thermal conductivities have larger values for reacting gas systems than for nonreacting systems. The explanation for this is as follows: If local chemical equilibrium is assumed, concentration gradients occur because the composition varies with temperature. These gradients cause the transfer of chemical enthalpy by diffusion of the molecules. Rigorous equations have been derived which express the thermal conductivity for a reacting gas system (ref. 4). As in the case of nonreacting systems, the calculations for reacting systems are tedious for anything but the simplest systems. Since all reacting systems will lie between a frozen state (nonreacting) and chemical equilibrium, depending upon the kinetics of the various reactions involved, the thermal conductivity and heat capacity will lie between these two extremes. Each system will be different, and no generalization can be made. However, it has been shown (ref. 4) that the ratio of the equilibrium conductivity to equilibrium heat capacity is about equal to the ratio of the frozen conductivity to the frozen heat capacity. Therefore, equilibrium conductivities may be estimated using this relation for use in heat-transfer calculations. When equilibrium conductivities are used, equilibrium heat capacities must also be used to obtain the correct result. Therefore, it is concluded that the transport properties presented in this report are suitable for making heat-transfer calculations in any type of unexcited or unionized gas system.

LEWIS RESEARCH CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
CLEVELAND, OHIO, *October 5, 1961*

APPENDIX A

DISCUSSION OF POTENTIAL FUNCTIONS

All transport data above 2000° K (with the exception of the thermal conductivity of argon) must be extrapolated from experimental data or estimated without the benefit of experimental data. Therefore, a theoretical basis is necessary in order to provide a reasonable means for calculating data outside the range of experimental data. In order to do this it is first necessary to know the potential energy of interaction of the colliding molecules. (If the gas is dilute, only binary collisions need be considered. This assumption is valid for this report, because the transport properties are calculated only for gases at 1-atm pressure.) Three potentials which have shown success in correlating experimental data are the Sutherland model, the Lennard-Jones (12–6) potential, and the modified Buckingham (exp-6) potential. These three potentials are depicted qualitatively in figure 1. (The ratio $\varphi(r_{max})/\epsilon$ for the modified Buckingham (exp-6) is usually much larger than that shown in fig. 1. Values of this ratio are given in ref. 1, p. 34.)

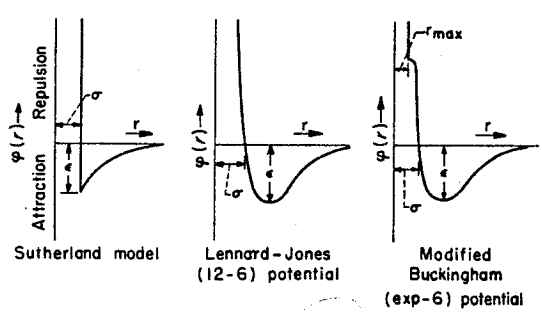


FIGURE 1.—Intermolecular potentials.

The first of these potentials, the Sutherland model, is described physically as a rigid impenetrable sphere, surrounded by an inverse-power attractive force. This model is qualitatively correct in that molecules attract one another when they are far apart, and exert strong repulsive forces upon one another when they are close together. This potential may be written as follows:

$$\varphi(r)=\infty \qquad r\leq\sigma$$

$$\varphi(r)=-\epsilon(\sigma/r)^{c} \qquad r>\sigma \tag{A1}$$

where $\varphi(r)$ is the potential energy of interaction, r is the intermolecular separation of the colliding molecules, the constant σ is the value of r at which the potential energy of interaction $\varphi(r)$ intersects the r-axis (often called the collision diameter), and ϵ is the minimum value of $\varphi(r)$. If in calculating collision integrals for this potential higher order terms in ϵ are ignored, the resulting transport equations come out in the form of the Sutherland equation (ref. 1, p. 549). For example, the Sutherland equation for viscosity is

$$\eta\times10^{6}=\frac{26.693\sqrt{MT}}{\sigma^{2}\left(1+\frac{S}{T}\right)} \tag{A2}$$

where S is the Sutherland constant.

The second model, the Lennard-Jones (12–6) potential, is given by

$$\varphi(r)=4\epsilon\left[\left(\frac{\sigma}{r}\right)^{12}-\left(\frac{\sigma}{r}\right)^{6}\right] \tag{A3}$$

Instead of using an exponent of ∞ in the repulsive term, as in the Sutherland potential, the Lennard-Jones (12–6) potential assigns an exponent of 12. This exponent of 12 is more realistic because it is more in line with exponents obtained from theoretical considerations and also exponents determined from molecular beam scattering measurements. Both methods indicate that the exponents for most molecules lie between about 6 and 15.

If an angular dependent r^{-3} term is added to the Lennard-Jones (12–6) potential to account for the dipole-dipole interaction, a Stockmayer-type potential results; this potential may be applicable to polar gases. The Lennard-Jones (12–6) and

modified Buckingham (exp-6) potentials are specifically for nonpolar gases.

The modified Buckingham (exp-6) potential given by

$$\varphi(r)=\frac{\epsilon}{1-\frac{6}{\beta}}\left\{\frac{6}{\beta}exp\left[\beta\left(1-\frac{r}{\sigma}\right)\right]-\left(\frac{\sigma}{r}\right)^6\right\} \qquad r>r_{max}$$

$$\varphi(r)=\infty \qquad r\leq r_{max} \tag{A4}$$

is even more realistic than the Lennard-Jones (12–6) potential. Whereas the Lennard-Jones (12–6) potential has an r^{-12} term to account for the repulsive forces, the (exp-6) potential uses an exponential term in r to account for these forces. The exponential form has some theoretical foundation (ref. 5). In addition to this the (exp-6) potential has a third parameter β, which is a measure of the steepness of the repulsion term. The (12–6) potential does not have an analogous parameter, and is therefore not as flexible as the (exp-6).

Both the (12–6) and (exp-6) potentials have r^{-6} terms. (The Sutherland model also does if c equals 6.) These terms represent the first term in a series (r^{-6}, r^{-8}, r^{-10}, . . .) for the attractive forces between molecules. These forces are explained as follows (ref. 1, p. 955): At any instant the electrons are in a configuration which produces an instantaneous dipole in the molecule. This dipole induces dipoles in neighboring molecules, and this induced-dipole-induced-dipole interaction causes the attractive dispersion forces. These forces are most important at lower temperatures, the temperature range where experimental data are available.

However, at high temperatures the colliding molecules approach closely, and the repulsive forces become dominant. For these high-temperature conditions the dispersion forces may be ignored and a potential such as

$$\varphi(r)=Kr^{-s} \tag{A5}$$

may be used, where K and s are constants characteristic of each molecule. This potential considers the molecules to interact as point centers of repulsion. Because no term for the dispersion energy is included in equation (A5), such as with the (exp-6) potential, the properties at low temperature would be expected to be in error. Experimental transport data would be of little help in obtaining constants for such a potential, because the data would not show the effects of the strong repulsive forces occurring at high temperatures.

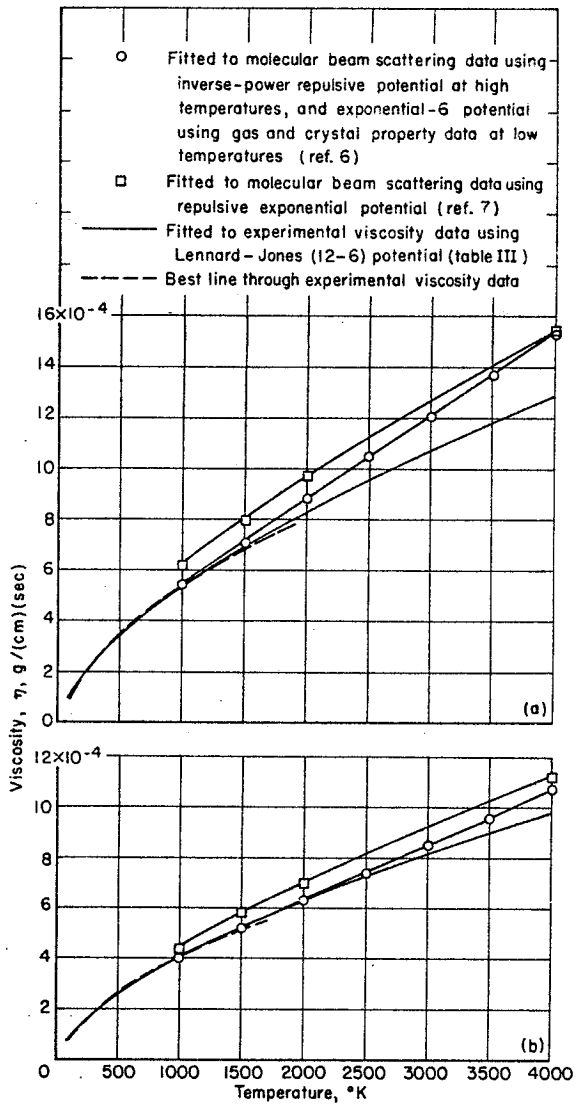
However, it is possible to determine the potential energy of interaction between two colliding molecules at high temperatures through direct measurements, such as by molecular beam scattering. Using the measured interaction potential obtained by this beam scattering technique, Amdur and Mason (ref. 6) have made estimates of the viscosity of some gases to 15,000° K. For high temperatures they used equation (A5) with constants K and s determined from experimental beam scattering data; for low temperatures equation (A4) was used with force constants determined from gas and crystal property data. Monchick (ref. 7) has made a similar calculation for a repulsive exponential of the form

$$\varphi(r)=Ae^{-r/b} \tag{A6}$$

where A and b are constants similar to the constants K and s of equation (A5). A comparison of viscosities calculated for Ar and N_2 by the methods of Monchick, Amdur and Mason, and from the Lennard-Jones (12–6) potential is given in figures 2(a) and (b). Similar results are obtained for He, Ne, Kr, and Xe. Figures 2(a) and (b) seem to indicate that all three potentials give high values for viscosity at high temperatures, though the experimental data at high temperatures may possibly be in error.

For this report it would be desirable to use a potential which is correct both in the low-temperature region, as well as the high-temperature region, because this would permit making use of experimental transport data in obtaining the force constants. This limits the choice to a selection between the (12–6) and (exp-6) potentials, since the inverse-power potential and repulsive exponential potential are invalid at low temperature.

Since experimental data are not available for many molecules, in particular free radicals, it is necessary to use a potential for which it is possible to estimate the constants for each molecule. For the inverse-power potential used by Amdur and



(a) Argon.
(b) Nitrogen.

FIGURE 2.—Comparison of calculated and experimental viscosity data for argon and nitrogen as a function of temperature.

Mason, and the repulsive exponential potential used by Monchick, the author knows of no general method for estimating the constants used in these potentials when beam scattering data are unavailable. This problem also arises for the parameter β in the (exp–6) potential. The (exp–6) potential is probably the most nearly theoretically correct over the entire temperature range, and would be used in preference to the Lennard-Jones (12–6) potential if it were possible to estimate the parameter β. (A comparison of the (exp–6) and (12–6) potentials with respect to data fitting is given in refs. 8 and 9.) However, the constants σ and ϵ can often be related to a number of physical properties or through comparisons to similar molecules. Therefore, the Lennard-Jones (12–6) potential was selected for use in the determination of the transport properties in this report.

It would be worthwhile to review the assumptions that are made when the Lennard-Jones (12–6) potential is used. First, a spherically symmetric potential is assumed. This is strictly true only for the atoms. Second, the repulsive term in the potential is assigned an exponent of 12. This is only an approximation used for mathematical simplicity. It actually varies over a range from about 6 to 15 for many molecules; the harder the molecule, the larger the exponent. Third, only a single potential energy curve is assumed for a given interaction. However, free radicals can follow a multiplicity of potential energy curves. For example, in the simple case of the H–H interaction there is the probability of one in four that two hydrogen atoms in the 1*s* state will follow the attractive $^1\Sigma$ energy curve, corresponding to the normal H_2 molecule, and the probability of three in four that they will follow the $^3\Sigma$ curve, corresponding to the lowest repulsive state of H_2. It is then possible to consider the gas as interacting along a single potential, with a mean collision cross section given by

$$Q=\sum_i p_i Q_i \tag{A7}$$

where Q is the mean collision cross section, p_i the probability of the radicals following potential energy path i, and Q_i the collision cross section along path i. Equation (A7) has been shown to be rigorous (ref. 10), and was used by Konowalow, Hirschfelder, and Linder to estimate the viscosity of sulfur and oxygen atoms (ref. 11).

In this report only a single set of force constants was estimated for each radical. The effect of excited states was not considered because, in general, the fraction of excited molecules does not become appreciable below 5000° K, and therefore excited states do not make a significant contribution to the transport properties in the temperature range considered.

APPENDIX B

EQUATIONS FOR VISCOSITY AND THERMAL CONDUCTIVITY

The equation used for the coefficient of viscosity (ref. 1, p. 528) is

$$\eta\times10^6=\frac{26.693\sqrt{MT}}{\sigma^2\Omega^{(2,2)*}} \tag{1}$$

where $\eta\times10^6$ is the viscosity in micropoises, T is the absolute temperature in °K, M the molecular weight, σ the low-velocity collision diameter in angstroms, and $\Omega^{(2,2)*}$ is the reduced collision integral (which is a function of the reduced temperature T^*). The reduced collision integral represents an averaging of the collision cross section over all orientations and relative kinetic energies of colliding molecules, and is obtained by means of a triple integration. Integrals for a number of potentials have been tabulated for a large range of reduced temperatures (ref. 1, pp. 1126–1180).

For thermal conductivities of inert monatomic gases the following equation (ref. 1, p. 534) was used:

$$\lambda'\times10^6=\frac{198.01\sqrt{T/M}}{\sigma^2\Omega^{(2,2)*}}=\frac{15R}{4M}(\eta\times10^6) \tag{B1}$$

where λ' is the conductivity in g-cal/(cm)(sec)(°K).

In the case of polyatomic gases, transfer of energy between internal degrees of freedom and translational motion causes an increase in the thermal conductivity in addition to that calculated by equation (B1). Making the assumptions that the internal energy of the molecule is independent of the molecular velocity, and that the exchange of internal and translational energy is sufficiently rapid such that at each point the distribution of molecules among the internal energy states is the equilibrium distribution characteristic of the local temperature, the following equation has been derived (ref. 1, pp. 498–501):

$$\lambda\times10^6=\frac{1}{4}\left[\left(15-6\frac{\rho\mathscr{D}}{\eta}\right)\gamma-\left(15-10\frac{\rho\mathscr{D}}{\eta}\right)\right]\frac{C_v}{M}(\eta\times10^6) \tag{B2}$$

(If the reciprocal Schmidt number $\rho\mathscr{D}/\eta$ is set equal to unity, the Eucken correction is obtained.) Since $\gamma=C_p/C_v$ and letting $\rho\mathscr{D}/\eta=f_{int}$, equation (B2) simplifies to

$$\lambda\times10^6=\frac{R}{M}\left[\frac{15}{4}+f_{int}\left(\frac{C_p}{R}-\frac{5}{2}\right)\right](\eta\times10^6)$$
$$=(\lambda'+\lambda'')\times10^6 \tag{B3}$$

where the first term in the brackets of equation (B3) represents the translational thermal conductivity and the second term the contribution of the internal degrees of freedom to the conductivity.

However, when experimental viscosity, thermal conductivity, and heat capacity data are used in connection with equation (B3), the calculated values of f_{int} are anomalously low, particularly at low temperatures. A possible explanation for this has been suggested by Mason and Monchick (ref. 12). Starting with the transport coefficients in the semiclassical form of Wang Chang and Uhlenbeck (ref. 13), Mason and Monchick made simplifying assumptions and arrived at expressions for the transport properties of polyatomic gases. In the first approximation the equation for the thermal conductivity was identical with equation (B3). In the second approximation for the conductivity, terms were included for the relaxation times for the various internal degrees of freedom. By examining experimental data for a number of common gases in connection with the second approximation for the conductivity, Mason and Monchick found considerably better agreement between experiment and theory at low temperatures than was found for the first approximation. At high temperatures the first and second approximations are in substantial agreement.

Either equation (B3) or Mason and Monchick's second approximation could have been used to calculate the transport properties above about 400° K. However, if the second approximation were used, it would be necessary to know relaxa-

tion times for internal energy states. Since only a few of the large number of relaxation times needed are known, equation (B3) was used. The value of $\rho\mathscr{D}/\eta$ for the Lennard-Jones potential over a large temperature range is close to 1.32, and so this value was used for f_{int}. Mason and Monchick actually found that in the second approximation f_{int} is greater than 1.32, but that the translational conductivity is less than that calculated from the first term of equation (B3). Therefore, these two effects tend to cancel one another, and the second approximation and equation (2) show close agreement at high temperatures.

Since equation (2) is in error at low temperatures, experimental thermal conductivities should be used in preference to the calculated values of this report whenever experimental data are available.

In this report polar molecules have been treated the same as nonpolar molecules. It was mentioned in appendix A that a potential of the form of the Stockmayer potential, which includes a term to account for the dipole-dipole interaction, should be used for polar molecules. Collision integrals have been calculated for a modified form of this potential, using the assumptions that the relative orientation of the two colliding dipoles remain fixed throughout the encounter, and that the collision trajectories are negligibly distorted by the transfer of internal rotational energy (refs. 14 and 15). If these integrals are then averaged over all orientations, assuming equal probability for all orientations, it has been shown that the constants σ and ϵ obtained from experimental viscosity data and these averaged collision integrals are very close to the constants that are obtained from the Lennard-Jones (12–6) potential for these molecules (ref. 14). Since the dipole-dipole interaction becomes unimportant for high-energy collisions, viscosities of this report of the polar molecules at high temperatures are little, if any, more in error than those estimated for nonpolar molecules. However, for thermal conductivities this may not be so. Equation (B3) has shown poor results in correlating experimental data. It has been suggested that this discrepancy may be the result of resonant transfer of rotational energy between interacting molecules, without change in the relative velocity (ref. 12). However, when heat capacities were available to high temperatures, thermal conductivities of polar molecules were included in table III for completeness.

The viscosities and conductivities have been calculated from 100° to 5000° K at 100° K intervals on an IBM 704 computer. Conductivities were only included when heat capacities were available to high temperatures. The heat capacities were obtained at the NASA Lewis Research Center where they were calculated from spectroscopic constants. The collision integrals used were obtained from reference 1, pages 1126 to 1127.

APPENDIX C

METHODS FOR DETERMINING THE INTERMOLECULAR FORCE CONSTANTS σ AND ϵ/k

Table I(a) presents the force constants used in calculating the viscosities and thermal conductivities; table I(b) presents the methods used to determine these constants and when they may be used. Table III gives the calculated transport properties, where both the viscosity and thermal conductivity have been calculated from the same constants. Table IV presents some additional viscosity data. The force constants of table I(a) and the properties of tables III and IV are given to a fairly uniform number of figures, though the number of significant figures is often less.

METHODS USING EXPERIMENTAL TRANSPORT PROPERTY DATA

When experimental data were available, the force constants were determined by fitting viscosity data to equation (1). This was usually done by the method of least squares, using an iteration technique. Viscosity data were used because, first, they are more readily obtainable and more reliable than thermal conductivity data, and, second, because equation (B3) is not reliable around room temperature where thermal conductivity data are most often available. However, equation (B1) is a rigorous expression (to the extent that the Lennard-Jones (12–6) potential is correct) for inert monatomic gases. Therefore, constants have been determined from thermal conductivity data, as well as viscosity, for the inert monatomic gases. Properties from conductivity data are given at the end of table III.

In some cases the least-squares technique gave constants which appeared unrealistic, considering other known properties of the molecule. This problem occurred most frequently for the highly polar molecules and the metal atoms, both species for which the (12–6) potential is most in error. For these molecules a graphic technique was used to determine the constants. This graphic technique is explained as follows: First a curve of $26.693\sqrt{T^*}/\Omega^{(2,2)*}$ against T^* was plotted on log-log graph paper. Then on another sheet of log-log graph paper experimental viscosity data ($\eta\times10^6$) against temperature were plotted for the molecule of interest. One sheet was placed on top of the other and adjusted until the two curves coincided as closely as possible. It was then possible to determine ϵ/k directly from the abscissa, by locating the temperature on the viscosity against temperature plot which corresponded to a T^* of unity. This temperature was equal to ϵ/k. Then the viscosity, which corresponded to $26.693\sqrt{T^*}/\Omega^{(2,2)*}$ equal to unity, was located on the ordinate. Setting this value of the viscosity ($\eta\times10^6$) equal to $\sqrt{M(\epsilon/k)}/\sigma^2$ and solving for σ, the other force constant was obtained.

METHODS USING PHYSICAL PROPERTIES

When no experimental data were available, which was the case for the majority of the gases, a variety of techniques was used. When it was possible, the constants were estimated from various properties of the liquid, solid, or gaseous states. These properties include critical constants, boiling points, boiling-point densities, melting-point densities, and second virial coefficients. Boiling-point properties were used in preference to solid-state properties, when properties from both states were available, because boiling-point properties appeared to be more closely associated with the gas phase. Second virial coefficients obtained from pressure-volume-temperature data are generally good sources for obtaining intermolecular force constants, but this property appeared to be available only when experimental viscosity data were also available, and was therefore of little help. This problem was also true for critical constants; critical properties were generally available only for molecules for which experimental viscosity data were available.

A summary of equations for estimating force constants from physical properties is given in reference 1, page 245. Since force constants are

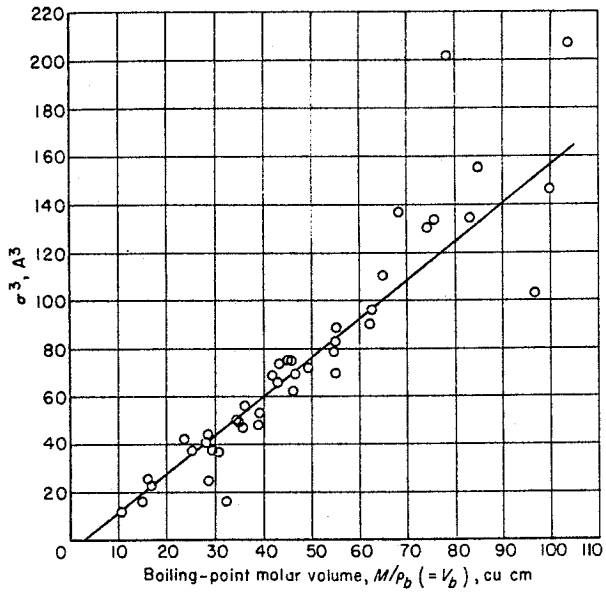


FIGURE 3.—Correlation between the collision diameter σ and the molar volume at the boiling point.

now known for more molecules than when the correlations in reference 1 were made, it was felt that a new set of correlations, incorporating the more recently determined force constants, would be useful. The results of correlating a large number of nonpolar and slightly polar molecules are given in table I(b) and in figures 3 to 6. Figure 3 shows the relation between σ and the molar volume at the boiling point; figure 4, the relation between σ and the critical temperature and pressure; figure 5, the relation between ϵ/k and the boiling point temperature; and figure 6, the relation between ϵ/k and the critical temperature. The physical properties used in these correlations were usually obtained from standard references such as handbooks. When liquid densities were not known exactly at the boiling point, they were extrapolated from the density at some other temperature by the method described in reference 16. Extrapolations were usually made only for small temperature intervals so that the density corrections amounted to only a few percent of the total density.

METHODS USING EMPIRICAL OR COMBINING RULES

The following combining rules were often used for diatomics when none of the preceding techniques were applicable:

$$\sigma_{AB}=\frac{\sigma_{AA}+\sigma_{BB}}{2} \tag{C1}$$

$$(\epsilon/k)_{AB}=\sqrt{(\epsilon/k)_{AA}(\epsilon/k)_{BB}} \tag{C2}$$

Another method, which was often used when neither experimental transport data nor physical properties were available, was a method suggested by Hirschfelder and Eliason (ref. 17). They proposed a method for estimating σ of monatomics and diatomics using the mean radius of an electron in the outermost electronic orbital. By assuming that two colliding molecules begin to repel when their charge distributions begin to overlap, Hirschfelder and Eliason obtain the empirical rule

$$\sigma_{monatomic}=2\bar{r}+1.8 \tag{C3}$$

where $\bar{r}$ is the mean radius of the outermost electronic orbital and 1.8 is an empirical constant adjusted to agree with experimentally determined values of σ. In terms of Slater orbitals,

$$\bar{r}=\frac{n^*(2n+1)}{2(Z-W)} \tag{C4}$$

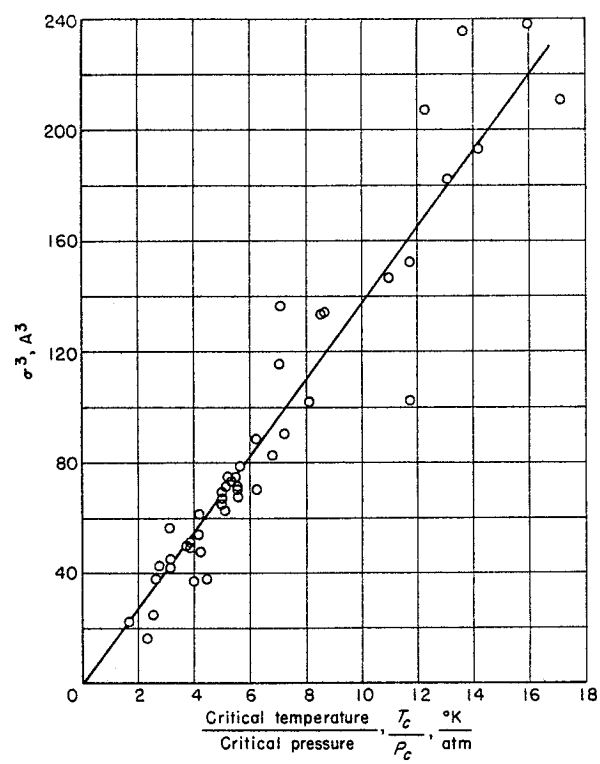


FIGURE 4.—Correlation between the collision diameter σ and the critical properties.

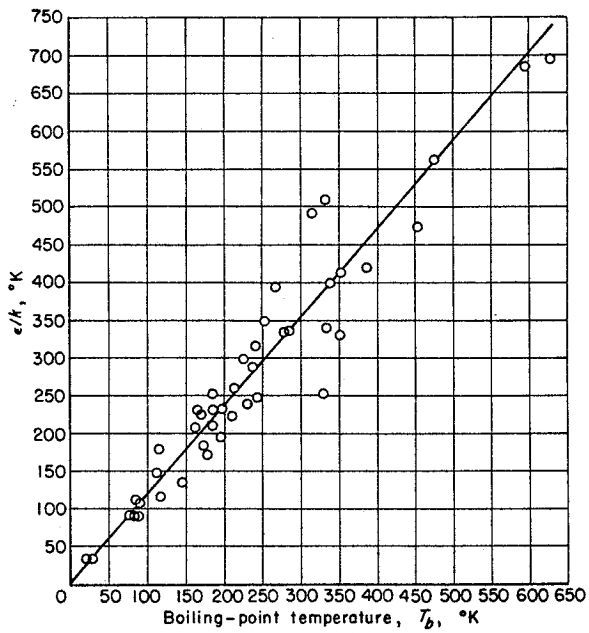


FIGURE 5.—Correlation between the force constant ϵ/k and the boiling point.

where n^* is the effective principal quantum number, Z is the atomic number, and W is the screening constant. By assuming that in two dimensions the length is the same as for monatomics, and in the third dimension the length must be increased by the bond length, Hirschfelder and Eliason obtain for diatomics

$$\sigma_{diatomic}=\frac{4}{3}(\bar{r}_A+\bar{r}_B)+1.8 \qquad \text{(C5)}$$

where $\bar{r}_A$ and $\bar{r}_B$ correspond to the Slater radii of atoms A and B, respectively, and 1.8 is again an empirical constant selected to best agree with experimentally determined values of σ for diatomics.

This method was extended to triatomics for this report. For linear triatomics the equation is

$$\sigma_{triatomic}=\frac{10}{9}(\bar{r}_A+\bar{r}_B+\bar{r}_C)+1.7 \qquad \text{(C6)}$$

where the constant 1.7 was selected as best agreeing with experimentally determined values of σ.

If $\sigma_{diatomic}$ in equation (C5) is assumed to be homonuclear ($\bar{r}_A=\bar{r}_B$), then equations (C5) and (C6) may be combined to give

$$\sigma_{triatomic}=\frac{5}{12}(\sigma_{A_{diatomic}}+\sigma_{B_{diatomic}}+\sigma_{C_{diatomic}})-0.55 \qquad \text{(C7)}$$

Equation (C7) was used in preference to equation (C6) for triatomics because it incorporates collision diameters obtained from experimental viscosity data, whereas equation (C6) is based upon Slater orbital radii, and does not include experimentally determined collision diameters. Though equation (C7) is specifically for linear triatomic molecules, it has been used in this report for some nonlinear triatomics when no better method was available for obtaining σ.

Equations (C3) and (C5) may be combined to relate the monatomic σ to a diatomic σ. If only homonuclear diatomics are considered, the following relations are obtained:

$$\sigma_{monatomic}=\frac{3}{4}\sigma_{diatomic}+0.45 \qquad \text{(C8)}$$

or

$$\sigma_{diatomic}=\frac{4}{3}\sigma_{monatomic}-0.60 \qquad \text{(C9)}$$

When σ for the diatomic was known or could be estimated more accurately than by using equation (C5), equation (C8) was used to determine σ for the monatomic in preference to using equation (C3). Similarly, when σ for the monatomic could be estimated more accurately than by using

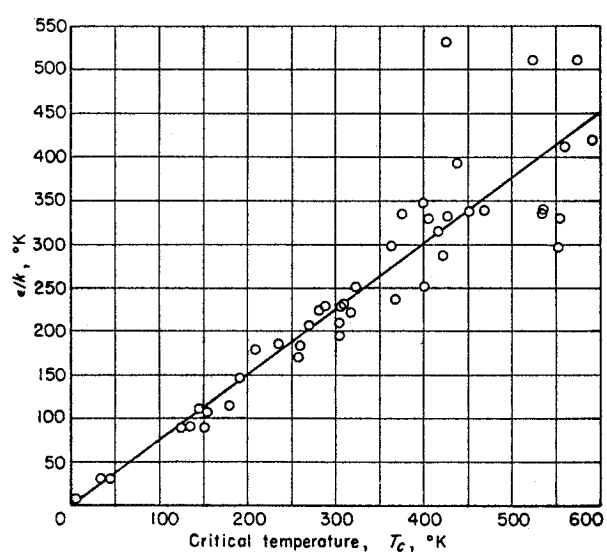


FIGURE 6.—Correlation between ϵ/k and the critical temperature.

equation (C3), equation (C9) was used to determine σ for the diatomic in preference to equation (C5).

For molecules of more than two atoms, when none of the aforementioned methods were applicable, a simple rule was developed. It was observed that σ and ϵ/k increase with an increasing number of atoms per molecule, and with increasing period for a given column on the periodic table. For example, CO_2 has constants larger than those of CO; and the values of the constants of the following diatomics are in the following order, starting with the smallest: F_2, Cl_2, Br_2, and I_2. It was concluded from these observations that the order for the chloromethanes, starting with the smallest, is CH_4, CH_3Cl, CH_2Cl_2, $CHCl_3$, CCl_4, and for the chlorocarbons is C, CCl, CCl_2, CCl_3, CCl_4. It is possible to test the first series by comparison with constants obtained from experimental viscosity data. It is observed that the change in σ from CH_4 to CCl_4, as each chlorine atom is substituted for a hydrogen atom, is approximately one-fourth the difference of the collision diameters of CCl_4 and CH_4. Since the hydrogen atom is considerably smaller than the chlorine atom, the variation in the number of hydrogen atoms in the series may be ignored, and it may be concluded that this simple linear relation is applicable to the chlorocarbon series as well. This linear relation is not shown for ϵ/k for the chloromethane series, as all the chloromethanes have about the same ϵ/k. This is probably due to the fact that some of the molecules are polar; a highly polar molecule such as CH_3Cl will have an ϵ/k that is larger than it would be if the molecule were not polar, because of the dipole-dipole interaction. However, when no better method for estimating ϵ/k was available, the same linear relation rule used for σ was used for ϵ/k. This method for estimating ϵ/k is probably sufficiently accurate, inasmuch as a considerably larger percent change in ϵ/k can be tolerated than in σ, to produce a given change in the transport property.

It has been mentioned in appendix A that free radicals exhibit a multiplicity of energy curves and that only a single set of "effective" force constants has been used in this report. It would be interesting to know if treating these free radicals as normal molecules introduces a large error in the results. Fortunately, experimental viscosity data for two free radicals, H and NO, are available. For these two molecules the constants show satisfactory agreement with those of normal molecules, which are similar to these two in size and shape. Therefore, it is probable that the high-temperature properties estimated for free radicals are only slightly more in error than those for normal molecules.

METHOD USING THEORETICAL RELATION OF THE DISPERSION ENERGY

Another technique that proved particularly useful for the atoms was a method suggested by Brandt (ref. 18). It is based upon a derivation by Slater and Kirkwood (ref. 19) for the dispersion energy between two atoms. They arrive at the equation

$$E(r)=\frac{-0.68\sqrt{a_0}e^2\sqrt{n\alpha^3}}{r^6}\times 10^{48} \qquad \text{(C10)}$$

where $E(r)$ is the dispersion energy, a_0 the Bohr radius, e the charge on an electron, n the number of electrons in the highest quantum state, and α the polarizability. Comparison of the dispersion energy term of equation (A3) with equation (C10) shows that the dispersion energy should be equal to $4\epsilon\sigma^6/r^6$. Therefore, a plot of log $(n\alpha^3)$ against log $[(\epsilon/k)\sigma^6]$, as suggested by Brandt, gives a linear dependence of slope 2. However, a plot of experimental data, where σ and ϵ/k had been determined from experimental viscosity data and polarizabilities were known, gave a linear dependence of slope 1.647 (fig. 7). (At low energies the slope was slightly increased in order to pass through the two data points in the lower left corner of fig. 7.) The difference between the observed and the expected slopes may be because equation (A3) ignores higher order terms in r, such as r^{-8} and r^{-10}, for the dispersion energy.

This technique is useful only when the polarizability and either σ or ϵ/k are known. Several methods for making estimates of the polarizability of atoms, when no experimental data are available, have been suggested (ref. 1, p. 954, and ref. 20). The method of reference 1, page 954, was used to estimate the polarizability of the boron atom, the only atom for which a polarizability needed to be estimated.

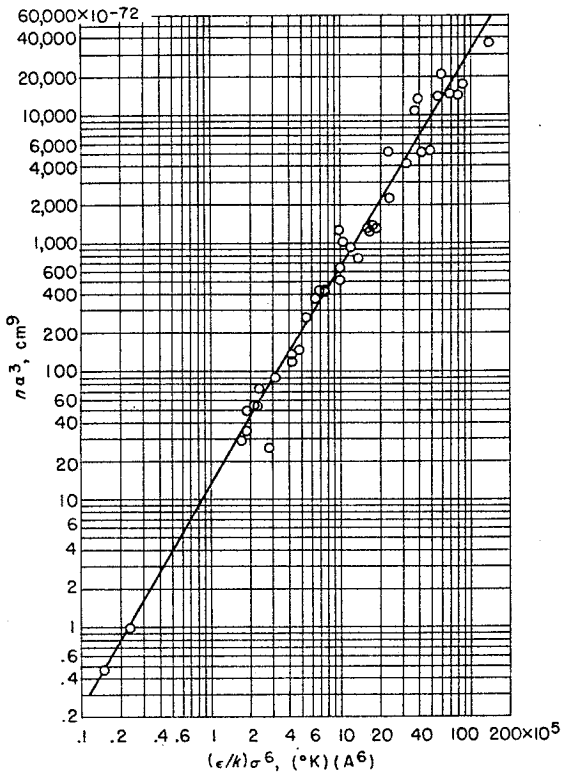


FIGURE 7.—Relation between the number of valence electrons n, the polarizability α, and the force constants σ and ϵ/k—Brandt's correlation.

TREATMENT OF EXPERIMENTAL VISCOSITY DATA OF H, He, AND F_2

The treatment of the data for H, He, and F_2 required special consideration which could not be fully explained in table I(b). The viscosity data for atomic hydrogen are scanty. There are only three data points reported in the literature, which were determined from an H–H_2 mixture, and one of these points is considered to be in error. No set of force constants for the Lennard-Jones potential was found which satisfied these data. It was therefore thought best to assign the value of ϵ/k of diatomic hydrogen, which was calculated using quantum mechanical formulas (ref. 1, p. 1110), to atomic hydrogen, and find the σ of atomic hydrogen that would best satisfy the two reliable data points.

The constants obtained from the least-squares program for helium were unreasonable in consideration of known physical properties of helium. Since helium, as well as hydrogen, shows quantum effects at low temperatures, it was thought best to use the quantum mechanically calculated value of ϵ/k for helium and graphically obtain a best value for σ.

In nearly all cases where more than one author has reported data for a given molecule, there is either satisfactory agreement among the workers, or else there are sufficient data so that the inconsistent set of data clearly stands out from the other sets of data. However, in the case of fluorine this is not so. There are only two sets of experimental data, and these two sets do not agree. The data reported by Aoyama and Kanda (ref. 21) and those reported by Franck and Stöber (ref. 22) show an unexplainably large difference. Therefore, force constants were obtained separately for each set of data and were compared with constants estimated from boiling-point properties, critical constants, thermal conductivity, and virial coefficients. Except for the constants obtained from virial coefficient data, all the constants were much closer to the constants obtained from the data of Franck and Stöber. Also, it was observed that the high- and low-temperature data points of Aoyama and Kanda were not consistent with the rest of their data. Therefore, it was decided to disregard Aoyama and Kanda's data completely, and use only the data of Franck and Stöber.

REFERENCES

1. Hirschfelder, Joseph O., Curtiss, Charles F., and Bird, R. Byron: Molecular Theory of Gases and Liquids. John Wiley & Sons, Inc., 1954.
2. Brokaw, R. S.: Energy Transport in High Temperature and Reacting Gases. Physical Chemistry in Aerodynamics and Space Flight, Pergamon Press, 1961, pp. 238–252.
3. Brokaw, Richard S.: Alignment Charts for Transport Properties, Viscosity, Thermal Conductivity, and Diffusion Coefficients for Nonpolar Gases and Gas Mixtures at Low Density. NASA TN R–81, 1961.
4. Butler, J. N., and Brokaw, R. S.: Thermal Conductivity of Gas Mixtures in Chemical Equilibrium. Jour. Chem. Phys., vol. 26, no. 6, June 1957, pp. 1636–1643.
5. Zener, Clarence: Interchange of Translational, Rotational and Vibrational Energy in Molecular Collisions. Phys. Rev., vol. 37, no. 5, Mar. 1, 1931, pp. 556–569.
6. Amdur, I., and Mason, E. A.: Properties of Gases at Very High Temperatures. Phys. of Fluids, vol. 1, no. 5, Sept.–Oct. 1958, pp. 370–383.
7. Monchick, Louis: Collision Integrals for the Exponential Repulsive Potential. Phys. of Fluids, vol. 2, no. 6, Nov.–Dec. 1959, pp. 695–700.
8. Mason, Edward A., and Rice, William E.: The Intermolecular Potentials for Some Simple Nonpolar Molecules. Jour. Chem. Phys., vol. 22, no. 5, May 1954, pp. 843–851.
9. Mason, Edward A., and Rice, William E.: The Intermolecular Potentials of Helium and Hydrogen. Jour. Chem. Phys., vol. 22, no. 3, Mar. 1954, pp. 522–535.
10. Mason, Edward A., Vanderslice, Joseph T., and Yos, Jerrold M.: Transport Properties of High-Temperature Multicomponent Gas Mixtures. Phys. of Fluids, vol. 2, no. 6, Nov.–Dec. 1959, pp. 688–694.
11. Konowalow, Daniel D., Hirschfelder, J. O., and Linder, Bruno: Low-Temperature, Low-Pressure Transport Coefficients for Gaseous Oxygen and Sulfur Atoms. Jour. Chem. Phys., vol. 31, no. 6, Dec. 1959, pp. 1575–1579.
12. Mason, E. A., and Monchick, L.: Heat Conductivity of Polyatomic and Polar Gases. Rep. IMP–NASA–25, Inst. for Molecular Phys., Univ. Maryland, July 3, 1961.
13. Wang Chang, C. S., and Uhlenbeck, G. E.: Transport Phenomena in Polyatomic Gases. Rep. CM–681, Eng. Res. Inst., Univ. Mich., July 10, 1951.
14. Monchick, L., and Mason, E. A.: Transport Properties of Polar Gases. CM–993, Appl. Phys. Lab., The Johns Hopkins Univ., Feb. 1961.
15. Itean, Eugene C., Glueck, Alan R., and Svehla, Roger A.: Collision Integrals for a Modified Stockmayer Potential. NASA TN D–481, 1961.
16. Watson, K. M.: Thermodynamics of the Liquid State—Generalized Prediction of Properties. Ind. and Eng. Chem., vol. 35, no. 4, Apr. 1943, pp. 398–406.
17. Hirschfelder, Joseph O., and Eliason, Morton A.: The Estimation of the Transport Properties for Electronically Excited Atoms and Molecules. Annals New York Acad. Sci., vol. 67, art. 9, May 24, 1957, pp. 451–461.
18. Brandt, Werner: Calculation of Intermolecular Force Constants from Polarizabilities. Jour. Chem. Phys., vol. 24, no. 3, Mar. 1956, pp. 501–506.
19. Slater, John C., and Kirkwood, John G.: The Van der Waals Forces in Gases. Phys. Rev., vol. 37, no. 6, Mar. 15, 1931, pp. 682–697.
20. Atoji, Masao: Atomic Polarizability. Jour. Chem. Phys., vol. 25, no. 1, July 1956, p. 174.
21. Aoyama, Shin-ichi, and Kanda, Eigo: Fluorine at Low Temperatures. V. Viscosity of Fluorine at Low Temperatures. Jour. Chem. Soc. (Japan), vol. 58, 1937, pp. 804–809.
22. Franck, E. U., und Stöber, W.: Zahigkeit und molekularer Wirkungsdurchmesser des Fluors. Zs. f. Naturforschung, bd. 7a, heft 12, 1952, pp. 822–823.
23. Wobser, R., und Müller, Fr.: Die innere Reibung von Gasen und Dämpfen und ihre Messung im Höppler-Viskosimeter. Kolloid-Beihefte, bd. 52, nos. 6–7, 1941, pp. 165–276.
24. Trautz, Max, und Bauman, P. B.: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. II.—Die Reibung von H_2-N_2- und H_2-CO-Gemischen. Ann. Physik, bd. 2, ser. 5, 1929, pp. 733–736.
25. Trautz, Max, und Stauf, F. W.: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. III.—Die Reibung von H_2-C_2H_4-Gemischen. Ann. Physik, bd. 2, ser. 5, 1929, pp. 737–742.
26. Trautz, Max, und Binkele, H. E.: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. VIII.—Die Reibung des H_2, He, Ne, Ar und ihrer binären Gemischen. Ann. Physik, bd. 5, ser. 5, 1930, pp. 561–580.
27. Trautz, Max, und Sorg, Karl Georg: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XVI.—Die Reibung von H_2, CH_4, C_2H_6, C_3H_8, und ihren binären Gemischen. Ann. Physik, bd. 10, ser. 5, 1931, pp. 81–96.
28. Trautz, Max, und Weizel, Walter: Bestimmung der inneren Reibung des Schwefeldioxyds und seiner Gemische mit Wasserstoff. Ann. Physik, bd. 78, ser. 4, 1925, pp. 305–369.
29. Sage, B. H., and Lacey, W. N.: Effect of Pressure Upon Viscosity of Air, Methane and Two Natural Gases. Tech. Pub. 845, AIME, Oct. 1937.
30. Sutherland, B. P., and Maass, O.: Measurement of the Viscosity of Gases Over a Large Temperature Range. Canadian Jour. Res., vol. 6, Apr. 1932, pp. 428–443.

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31. Brémond, Pierre: Sur la viscosité des gaz aux températures élevées. Compt. rend., t. 196, May 15, 1933, pp. 1472–1474.
32. Titani, Toshizo: The Viscosity of Vapours of Organic Compounds, III. Chem. Soc. Japan, Bull. 8, Sept. 1933, pp. 255–276.
33. Braune, H., Basch, R., und Wentzel, W.: Über die innere Reibung einiger Gase und Dämpfe. I.—Luft und Brom. Zs. physik. Chem., abt. A, bd. 137, 1928, pp. 176–192.
34. Vasilesco, Virgile: Recherches Expérimentales Sur La Viscosité Des Gaz Aux Températures Élevées. Ann. phys., ser. 11, t. 20, May–June 1945, pp. 292–334.
35. Williams, Frank Archer: The Effect of Temperature on the Viscosity of Air. Proc. Roy. Soc. (London), ser. A, vol. 110, no. 753, Jan. 1, 1926, pp. 141–167.
36. Shilling, W. G., and Laxton, A. E.: The Effect of Temperature on the Viscosity of Air. Phil. Mag., ser. 7, vol. 10, no. LXV, Oct. 1930, pp. 721–733.
37. Edwards, R. S., and Rankine, A. O.: On the Effect of Temperature on the Viscosity of Air. Proc. Roy. Soc. (London), ser. A, vol. 117, no. 776, Dec. 1, 1927, pp. 245–257.
38. Makita, Tadashi: The Viscosity of Argon, Nitrogen, and Air at Pressures up to 800 kg/sq cm. Rev. Phys. Chem. (Japan), vol. 27, 1957, pp. 16–21.
39. Ayzenshtat, I. I., ed.: Thermophysical Properties of Substances. Trans. F-TS-9537/V, Tech. Info. Center, Wright-Patterson Air Force Base, Nov. 1959.
40. Trautz, Max, und Ludewigs, Walter: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. VI.—Reibungsbestimmung an reinen Gasen durch direkte Messung und durch solche an ihren Gemischen. Ann. Physik, bd. 3, ser. 5, 1929, pp. 409–428.
41. Trautz, Max, und Zink, Robert: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XII.—Gasreibung bei höheren Temperaturen. Ann. Physik, bd. 7, ser. 5, 1930, pp. 427–452.
42. Kiyama, Ryo, and Makita, Tadashi: The Viscosity of Carbon Dioxide, Ammonia, Acetylene, Argon, and Oxygen Under High Pressures. Rev. Phys. Chem. (Japan), vol. 22, 1952, pp. 49–58.
43. Bonilla, C. F., Wang, S. J., and Weiner, H.: The Viscosity of Steam, Heavy-Water Vapor, and Argon at Atmospheric Pressure up to High Temperatures. Trans. ASME, vol. 78, no. 6, Aug. 1956, pp. 1285–1289.
44. De Rocco, Andrew G., and Halford, J. O.: Intermolecular Potentials of Argon, Methane, and Ethane. Jour. Chem. Phys., vol. 28, no. 6, June 1958, pp. 1152–1154.
45. Rankine, A. O., and Smith, C. J.: On the Viscosity and Molecular Dimensions of Gaseous Ammonia, Phosphine, and Arsine. Phil. Mag., ser. 6, vol. 42, no. 251, Nov. 1921, pp. 601–614.
46. Hawes, J., Mackenzie, H. A. E., and Raw, C. J. G.: Properties of the Boron Halides. Pt. VI. The Viscosity of Boron Trichloride in the Range 30° to 230° C. Jour. South African Chem. Inst., vol. 8, 1955, pp. 21–24.
47. Cooke, B. A., and Mackenzie, H. A. E.: Properties of the Boron Halides. Pt. I. The Viscosity of Boron Trifluoride. Jour. South African Chem. Inst., vol. 4, 1951, pp. 123–129.
48. Ellis, C. P., and Raw, C. J. G.: High-Temperature Gas Viscosities. II. Nitrogen, Nitric Oxide, Boron Trifluoride, Silicon Tetrafluoride, and Sulfur Hexafluoride. Jour. Chem. Phys., vol. 30, no. 2, Feb. 1959, pp. 574–576.
49. McCoubrey, J. C., and Singh, N. M.: Intermolecular Forces in Quasi-Spherical Molecules. Trans. Faraday Soc., vol. 53, 1957, pp. 877–883.
50. Makishima, Shoji, Yoneda, Yukio, and Tajima, Tatsuya: The Viscosity and Thermal Stability of Vapor of Trimethyl Borate. Jour. Phys. Chem., vol. 61, no. 12, Dec. 27, 1957, pp. 1618–1619.
51. Rankine, A. O.: On a Method of Measuring the Viscosity of the Vapours of Volatile Liquids, with an Application to Bromine. Proc. Roy. Soc. (London), ser. A, vol. 88, no. 606, July 18, 1913, pp. 575–588.
52. Braune, H., und Linke, R.: Über die innere Reibung einiger Gase und Dampfe. III—Einfluss des Dipolmoments auf die Grösse Sutherlandschen Konstanten. Zs. physik. Chem., abt. A, bd. 148, no. 3, June 1930, pp. 195–215.
53. Bleakney, William M.: Some Measurements on the Vapor Viscosities of Two Common Pentanes, Two Pentenes, and Carbon Tetrachloride. Physics, vol. 3, 1932, pp. 123–136.
54. Sperry, Elmer H., and Mack, Edward, Jr.: The Collision Area of the Gaseous Carbon Tetrachloride Molecule. Jour. Am. Chem. Soc., vol. 54, no. 3, Mar. 1932, pp. 904–907.
55. Mueller, Charles R., and Ignatowski, Albert J.: Equilibrium and Transport Properties of the Carbon Tetrachloride-Methylene Chloride System. Jour. Chem. Phys., vol. 32, no. 5, May 1960, pp. 1430–1434.
56. Vogel, Hans: Über die Viskosität einiger Gase und ihre Temperaturabhängigkeit bei tiefen Temperaturen. Ann. Physik, bd. 43, ser. 4, Apr. 1914, pp. 1235–1272.
57. Rappenecker, Karl: Über die Reibungskoeffizienten von Dämpfen und ihre Abhängigkeit von der Temperatur. Zs. physik. Chem., bd. 72, heft 6, 1910, pp. 695–722.
58. Titani, Toshizo: The Viscosity of Vapours of Organic Compounds, I. Bull. Inst. Phys. Chem. Res. (Japan), vol. 8, 1929, pp. 433–460.
59. Reed, John F., and Rabinovitch, B. S.: Viscosities of Fluorinated Methyl Bromides and Chlorides. Jour. Chem. Eng. Data Ser., vol. 2, no. 1, 1957, p. 75.

60. Benning, A. F., and Markwood, W. H., Jr.: The Viscosity of "Freon" Refrigerants. Refrigerator Eng., vol. 37, 1939, pp. 243–247.
61. Craven, P. M., and Lambert, J. D.: The Viscosities of Organic Vapours. Proc. Roy. Soc. (London), ser. A, vol. 205, no. 1082, Feb. 22, 1951, pp. 439–449.
62. Stakelbeck, Von H.: Ueber die Zähigkeit verschiedener Kältemittel im flussigen und damfförmigen Zustand in Abhängigkeit von Druck und Temperatur. Zs. gesamte Kalte-Industrie, bd. 40, Mar. 1933, pp. 33–40.
63. Johnston, Herrick L., and McCloskey, Kenneth E.: Viscosities of Several Common Gases Between 90° K and Room Temperature. Jour. Phys. Chem., vol. 44, no. 9, Dec. 1940, pp. 1038–1058.
64. Van Itterbeek, A.: Bestimmung der Inneren Reibung Von Schwerem und Leichtem Methan Zwischen 322° K und 90° K. Physica, vol. 7, no. 9, Nov. 1940, pp. 831–837.
65. Kuss, Von E.: Hochdruckuntersuchungen. II: Die Viskosität von komprimierten Gasen. Zs. angew. Phys., bd. 4, 1952, pp. 203–207.
66. Rankine, A. O., and Smith, C. J.: On the Viscosities and Molecular Dimensions of Methane, Sulphuretted Hydrogen, and Cyanogen. Phil. Mag., ser. 6, vol. 42, no. 251, Nov. 1921, pp. 615–620.
67. Johnston, Herrick L., and Grilly, Edward R.: Viscosities of Carbon Monoxide, Helium, Neon, and Argon Between 80° and 300° K. Coefficients of Viscosity. Jour. Phys. Chem., vol. 46, no. 8, Nov. 1942, pp. 948–963.
68. Trautz, Max, und Melster, Albert: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XI.—Die Reibung von H_2, N_2, CO, C_2H_4, O_2 und ihren binären Gemischen. Ann. Physik., bd. 7, ser. 5, 1930, pp. 409–426.
69. Smith, C. J.: An Experimental Comparison of the Viscous Properties of (a) Carbon Dioxide and Nitrous Oxide; (b) Nitrogen and Carbon Monoxide. Proc. Phys. Soc. (London), vol. 34, 1922, pp. 155–164.
70. Smith, C. J.: On the Viscosity and Molecular Dimensions of Gaseous Carbon Oxysulphide (COS). Phil. Mag., ser. 6, vol. 44, no. 260, Aug. 1922, pp. 289–292.
71. Trautz, Max, und Kurz, Friedrich: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XV.—Die Reibung von H_2, N_2O, CO_2, und C_3H_8 und ihren binären Gemischen. Ann. Physik., bd. 9, ser. 5, 1931, pp. 981–1003.
72. Adzumi, Hiroshi: Studies on the Flow of Gaseous Mixtures Through Capillaries. I.—The Viscosity of Binary Gaseous Mixtures. Bull. Chem. Soc. (Japan), vol. 12, no. 5, May 1937, pp. 199–226.
73. Trautz, Max, und Heberling, Robert: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XVII.—Die Reibung von NH_3 und seinen Gemischen mit H_2, N_2, O_2, C_2H_4. Ann. Physik., bd. 10, ser. 5, 1931, pp. 155–177.
74. Van Cleave, A. B., and Maass, O.: The Variation of the Viscosity of Gases with Temperature Over a Large Temperature Range. Canadian Jour. Res., vol. 13, no. 3, Sept. 1935, pp. 140–148.
75. Majmudar, V. D., and Okra, U. S.: Atomic Function of Some Gases in the Light of Revised Viscosity Determinations. Jour. Univ. Bombay, vol. XVII, pt. 5, Mar. 1949, pp. 35–40.
76. Nadi, M. El: Variation of the Viscosity of Ethyl Chloride Vapor with Temperature. Jour. Phys. Chem., vol. 57, no. 6, June 30, 1953, pp. 589–591.
77. Rankine, A. O.: The Viscosity and Molecular Dimensions of Gaseous Cyanogen. Proc. Roy. Soc. (London), ser. A, vol. 99, no. 699, July 1, 1921, pp. 331–336.
78. Trautz, Max, und Husseini, Ishaq: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XXVI.—Die innere Reibung von Propylen und β-Butylen und von ihren Mischungen mit He oder H_2. Ann. Physik., bd. 20, ser. 5, 1934, pp. 121–126.
79. Nasini, A. G.: The Molecular Dimensions of Organic Compounds. Pt. II. The Viscosity of Vapours: Benzene, Toluene and Cyclohexane. Proc. Roy. Soc. (London), ser. A, vol. 123, no. 792, Apr. 6, 1929, pp. 692–704.
80. Braune, H., Basch, R., und Wentzel, W.: Über die innere Reibung einiger Gase und Dämpfe II.—Quecksilber, Cadmium und Zink. Zs. physik. Chem., abt. A, bd. 137, 1928, pp. 447–457.
81. Cosslett, Vernon Ellis: Darstellung und Eigenschaften Von Fluorcyan. Zs. Anorg. Allgem. Chem., bd. 201, 1931, pp. 75–80.
82. Trautz, Max, und Winterkorn, Hans: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XVIII.—Die Messung der Reibung an aggressiven Gasen (Cl_2, HJ). Ann. Physik., bd. 10, ser. 5, 1931, pp. 511–528.
83. Trautz, Max, und Ruf, Fritz: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XXVII.—Die innere Reibung von Chlor und von Jodwasserstoff Eine Nachprüfung der η-Messungsmethode für aggressive Gase. Ann. Physik, bd. 20, ser. 5, 1934, pp. 127–134.
84. Trautz, Max, und Freytag, Adolf: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XXVIII.—Die innere Reibung von Cl_2, NO und NOCl. Gasreibung während der Reaktion $2\,NO + Cl_2 = 2\,NOCl$. Ann. Physik, bd. 20, ser. 5, 1934, pp. 135–144.
85. Amdur, I.: Viscosity and Diffusion Coefficients of Atomic Hydrogen and Atomic Deuterium. Jour. Chem. Phys., vol. 4, no. 6, June 1936, pp. 339–343.
86. Harle, H.: On the Viscosities of the Hydrogen Halides. Proc. Roy. Soc. (London), ser. A, vol. 100, no. 705, Jan. 2, 1922, pp. 429–440.
87. Trautz, Max, und Narath, Albert: Die innere Reibung von Gasgemischen. Ann. Physik., bd. 79, ser. 4, Apr. 23, 1926, pp. 637–672.

88. Posey, J. C.: Viscosity of Gaseous Anhydrous Hydrogen Fluoride. Rep. K-1063, K-25 Plant, Carbide and Carbon Chem. Co., Sept. 2, 1953.
89. Rietveld, A. O., and Van Itterbeek, A.: Viscosity of Mixtures of H_2 and HD Between 300° and 14° K. Physica, vol. 23, Sept. 1957, pp. 838–842.
90. Bonilla, Charles F., Brooks, Robert D., and Walker, Philip L., Jr.: The Viscosity of Steam and of Nitrogen at Atmospheric Pressure and High Temperatures. London Conf. of ASME, Sec. II—Heat Transfer Between Fluids and Surfaces, Sept. 11–13, 1951.
91. Sigwart, K.: Messungen der Zähigkeit von Wasser und Wasserdampf bis ins kritsche Gebiet. Forsch. Gebiete Ingenieurw., bd. 7, ser. B, 1936, pp. 125–140.
92. Smith, C. J.: An Experimental Study of the Viscous Properties of Water Vapour. Proc. Roy. Soc. (London), ser. A, vol. 106, no. 735, July 1, 1924, pp. 83–96.
93. Satterfield, Charles N., Wentworth, Ralph L., and Demetriades, Sterge T.: The Viscosity of Vapor Mixtures of Hydrogen Peroxide and Water. Jour. Am. Chem. Soc., vol. 76, no. 10, May 20, 1954, pp. 2633–2637.
94. Moszynski, J. R.: The Viscosity of Steam and Water at Moderate Pressures and Temperatures. Paper 60-HT-29, ASME, 1961.
95. Hawkins, G.A., Solberg, H. L., and Potter, A. A.: The Viscosity of Water and Superheated Steam. Trans. ASME, vol. 57, no. 7, Oct. 1935, pp. 395–400.
96. Shifrin, A. S.: Viscosity of Steam at Atmospheric Pressure. Teploenergetika, vol. 6, no. 9, 1959, pp. 22–27. (Trans. S142 by Morris D. Friedman, Inc.)
97. Krieger, F. J.: The Viscosity of Polar Gases. RM-646, The Rand Corp., July 1, 1951.
98. Ross, James F., and Brown, George Martin: Viscosity of Gases at High Pressure. Ind. and Eng. Chem., vol. 49, no. 12, Dec. 1957, pp. 2026–2033.
99. Rietveld, A. O., Van Itterbeek, A., and Van den Berg, G. J.: Measurements on the Viscosity of Mixtures of Helium and Argon. Physica, vol. 19, 1953, pp. 517–524.
100. Van Itterbeek, A., and Keesom, W. H.: Measurements on the Viscosity of Helium Gas Between 293° K and 1.6° K. Physica, vol. 5, no. 4, Apr. 1938, pp. 257–269.
101. Van Itterbeek, A., and Van Paemel, O.: Measurements on the Viscosity of Neon, Hydrogen, Deuterium, and Helium as a Function of the Temperature, Between Room Temperature and Liquid Hydrogen Temperatures. Physica, vol. 7, no. 3, Mar. 1940, pp. 265–272.
102. Rankine, A. O.: On the Viscosity of the Vapour of Iodine. Proc. Roy. Soc. (London), ser. A, vol. 91, no. 627, Mar. 1, 1915, pp. 201–208.
103. Rankine, A. O.: Viscosity of Gases of the Argon Group. Proc. Roy. Soc. (London), ser. A, vol. 83, 1910, p. 516.
104. Rankine, A. O.: On the Variation with Temperature of the Viscosities of the Gases of the Argon Group. Proc. Roy. Soc. (London), ser. A, vol. 84, no. 569, July 28, 1911, pp. 181–192.
105. Nasini, A. G., and Rossi, C.: Viscosity of Rare Gases. Gazz. Chim. ital., vol. 58, 1928, pp. 433–442.
106. Edwards, R. S., and Worswick, B.: On the Viscosity of Ammonia Gas. Proc. Phys. Soc. (London), vol. 38, 1925, pp. 16–23.
107. Trautz, Max, und Gabriel, Ernst: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XX.—Die Reibung des Stickoxyds NO und seiner Mischung mit N_2. Ann. Physik., bd. 11, ser. 5, 1931, pp. 606–610.
108. Lazarre, F., and Vodar, B.: Measurement of the Viscosity of Compressed Nitrogen up to 3,000 Atmospheres. Proc. Conf. on Thermodynamic and Transport Properties of Fluids, Inst. Mech. Eng. (London), 1957, pp. 159–162.
109. Westmoreland, J. C.: Determination of Viscosity of Exhaust-Gas Mixtures at Elevated Temperatures. NACA TN 3180, 1954.
110. Raw, C. J. G., and Ellis, C. P.: High-Temperature Gas Viscosities. I. Nitrous Oxide and Oxygen. Jour. Chem. Phys., vol. 28, no. 6, June 1958, pp. 1198–1200.
111. Fisher, Willard J.: The Coefficients of Gas Viscosity. Phys. Rev., vol. 28, 1909, pp. 73–106.
112. Rietveld, A. O., and Van Itterbeek, A.: Measurements on the Viscosity of Ne-A Mixtures Between 300 and 70° K. Physica, vol. 22, Sept. 1956, pp. 785–790.
113. Edwards, R. S.: The Effect of Temperature on the Viscosity of Neon. Proc. Roy. Soc. (London), ser. A, vol. 119, no. 783, July 2, 1928, pp. 578–590.
114. Smith, C. J.: On the Viscosity and Molecular Dimensions of Sulphur Dioxide. Phil. Mag., vol. 44, no. CCLXI, Sept. 1922, pp. 508–511.
115. Stewart, W. W., and Maass, O.: The Coefficient of Viscosity of Sulphur Dioxide Over a Low Temperature Range. Canadian Jour. Res., vol. 6, 1932, pp. 453–457.
116. Rankine, A. O., and Smith, C. J.: The Viscous Properties and Molecular Dimensions of Silicane. Proc. Phys. Soc. (London), vol. 34, 1922, pp. 181–186.
117. Llewellyn, D. R.: Some Physical Properties of Uranium Hexafluoride. Chem. Soc. Jour., pt. 1, 1953, pp. 28–36.
118. Myerson, Albert L., and Eicher, John H.: The Viscosity of Gaseous Uranium Hexafluoride. Jour. Am. Chem. Soc., vol. 74, no. 11, June 5, 1952, pp. 2758–2761.
119. Kigoshi, Kunihiko: On the Viscosity of Uranium Hexafluoride. Chem. Soc. Japan, Bull. 23, 1950, pp. 67–68.
120. Trautz, Max, und Heberling, Robert: Die Reibung, Wärmeleitung und Diffusion in Gasmischungen. XXV.—Die innere Reibung von Xenon und seinen Gemischen mit Wasserstoff und Helium. Ann. Physik., bd. 20, ser. 5, 1934, pp. 118–120.

121. Kannuluik, W. G., and Carman, E. H.: The Thermal Conductivity of Rare Gases. Proc. Phys. Soc. (London), vol. 65, ser. B, 1952, pp. 701–709.
122. Lenoir, J. M., and Comings, E. W.: Thermal Conductivity of Gases—Measurement at High Pressure. Chem. Eng. Prog., vol. 47, no. 5, May 1951, pp. 223–231.
123. Lenoir, J. M., Junk, W. A., and Comings, E. W.: Measurement and Correlation of Thermal Conductivities of Gases at High Pressure. Chem. Eng. Prog., vol. 49, no. 10, Oct. 1953, pp. 539–542.
124. Michels, A., Botzen, A., Friedman, A. S., and Sengers, J. V.: The Thermal Conductivity of Argon Between 0° C and 75° C at Pressures up to 2500 Atmospheres. Physica, vol. 22, Feb. 1956, pp. 121–128.
125. Eucken, A.: Über die Temperaturabhängigkeit der Warmeleitfähigkeit einiger Gase. Physik. Zs., bd. 12, no. 24, Dec. 1, 1911, pp. 1101–1107.
126. Eucken, A.: Über das Wärmeleitvermögen, die spezifische Wärme und die innere Reibung der Gase. Physik. Zs., bd. 14, no. 8, Apr. 15, 1913, pp. 324–331.
127. Srivistava, B. N., and Srivistava, R. C.: Thermal Conductivity and Eucken Correction for Diatomic Gases and Binary Gas Mixtures. Jour. Chem. Phys., vol. 30, no. 5, May 1959, pp. 1200–1205.
128. Wirth, H., und Klemenc, A.: Die Wärmeleitfähigkeit von Gasen bei niederen Drücken. Monatsh. Chem., bd. 83, 1952, pp. 879–882.
129. Schäfer, K., und Reiter, F. W.: Bestimmung des absoluten Wärmeleitvermögens von Gasen bis 1100° C. Naturwissenschaften, bd. 43, no. 13, 1956, pp. 296–297.
130. Smiley, Edward F.: The Measurement of the Thermal Conductivity of Gases at High Temperatures with a Shocktube; Experimental Results in Argon at Temperatures Between 1000° K and 3000° K. The Catholic University of America Press, 1957.
131. Rothman, Albert Joel: Thermal Conductivity of Gases at High Temperatures. UCRL 2339, Univ. Calif., Jan. 1954.
132. Weber, Sophus: Untersuchungen über die Wärmeleitfähigkeit der Gase, II. Ann. Physik., bd. 54, ser. 4, 1917, pp. 437–462.
133. Dickins, B. G.: The Effect of Accommodation on Heat Conduction Through Gases. Proc. Roy. Soc. (London), ser. A, vol. 143, no. 850, Feb. 1, 1934, pp. 517–540.
134. Kannuluik, W. G., and Martin, L. H.: The Thermal Conductivity of Some Gases at 0° C. Proc. Roy. Soc. (London), ser. A, vol. 144, no. 853, May 1, 1934, pp. 496–513.
135. Curie, Maurice, et Lepape, A.: Conductibilité thermique des gaz rares. Compt. rend., t. 193, 1931, pp. 842–843.
136. Schottky, W. F.: Zur Messung der Wärmeleitfähigkeit von Gasen bei höheren Temperaturen. Zs. Elektrochem., bd. 56, 1952, pp. 889–892.
137. Gardiner, W. C., und Schäfer, Kl.: Transportphänomene in Gasen und zwischenmolekulare Kräfte. Zs. Elektrochem., bd. 60, 1956, pp. 588–594.
138. Keyes, Frederick G.: The Heat Conductivity, Viscosity, Specific Heat, and Prandtl Number for Thirteen Gases. Tech. Rep. 37, M.I.T., Apr. 1, 1952.
139. Keyes, Frederick G.: Thermal Conductivities for Several Gases with a Description of New Means for Obtaining Data at Low Temperatures and Above 500° C. Tech. Memo. MIT-1, M.I.T., Oct. 1, 1952.
140. Keyes, F. G.: Thermal Conductivity of Gases. Trans. ASME, vol. 76, July 1954, pp. 809–816.
141. Keyes, F. G.: Thermal Conductivity of Gases. Trans. ASME, vol. 77, Nov. 1955, pp. 1395–1396.
142. Thomas, Lloyd B., and Golike, Ralph C.: A Comparative Study of Accommodation Coefficients by the Temperature Jump and Low Pressure Methods and Thermal Conductivities of He, Ne, and CO_2. Jour. Chem. Phys., vol. 22, no. 2, Feb. 1954, pp. 300–305.
143. Bannawitz, Erich: Über die Wärmeleitung des Neon. Ann. Physik, bd. 48, ser. 4, 1915, pp. 577–592.
144. Weber, Sophus: Über die Wärmeleitfähigkeit der Gase. Ann. Physik, bd. 82, ser. 4, 1927, pp. 479–503.
145. Miller, George A., and Bernstein, Richard B.: Gas Kinetic Collision Diameters of the Halomethanes. Jour. Phys. Chem., vol. 63, no. 5, May 20, 1959, pp. 710–713.

TABLE I.—FORCE CONSTANTS AND METHODS OF DETERMINATION

(a) Force constants for molecules

Molecule	σ	Method for σ [a]	ϵ/k	Method for ϵ/k [a]	Page [b]	Experimental viscosity data references
Al	2. 655	5	2750	8	27	
AlCl	3. 578	16	932	16	27	
$AlCl_3$	5. 127	21	472	9	28	
AlF	3. 148	16	556	16	28	
AlF_3	4. 198	21	1846	8	29	
AlN	3. 369	16	2682	8	29	
AlO	3. 204	16	542	16	30	
AlS	3. 730	16	1526	16	30	
Al_2	2. 940	14	2750	15	31	
Air	3. 711	1	78. 6	1	117	23 to 39
Ar	3. 542	1	93. 3	1	31	23, 26, 34, 38, 40 to 44
AsH_3	4. 145	1	259. 8	1	32	45
B	2. 265	18	3331	8	32	
BBr_3	5. 439	7	430	9	33	
BCl	3. 318	16	1026	16	33	
BCl_2	4. 222	17	682	17	34	
BCl_3	5. 127	1	337. 7	1	34	46
BF	2. 888	16	612	16	35	
BF_2	3. 543	17	399	17	35	
BF_3	4. 198	1	186. 3	1	36	47 to 49
BI_3	5. 906	5	570. 2	8	117	
BO	2. 944	16	596	16	36	
$B(OCH_3)_3$	5. 503	1	396. 7	1	117	50
B_2	2. 420	14	3331	15	37	
B_2H_6	4. 821	10	213. 2	8	37	
B_2O_3	4. 158	5	2092	8	38	
Be	2. 618	18	3603	8	38	
$BeBr_2$	4. 235	12	936	8	117	
BeCl	3. 554	16	1067	16	39	
$BeCl_2$	4. 169	12	936	8	39	
BeF	3. 124	16	637	16	40	
BeF_2	3. 452	12	1266	8	40	
BeI_2	4. 955	12	1019	8	117	
Be_2	2. 891	14	3603	15	117	
Br	3. 672	13	236. 6	19	41	
BrF	3. 826	16	239	16	41	
BrF_3	4. 366	5	481. 7	8	117	
BrO	3. 882	16	233	16	117	
Br_2	4. 296	1	507. 9	1	42	33, 51
C	3. 385	13	30. 6	19	42	
$CBrF_3$	5. 01	20	235	20	43	
CBr_4	6. 12	20	442	20	43	
CCl	4. 065	16	157. 8	16	44	
$CClF_3$	4. 96	20	188	20	44	
CCl_2	4. 692	17	213	17	118	
CCl_2F_2	5. 25	20	253	20	45	
CCl_3	5. 320	17	268	17	118	
CCl_3F	5. 44	20	334	20	45	
CCl_4	5. 947	1	322. 7	1	46	32, 52 to 55
CF	3. 635	16	94. 2	16	46	

[a] See table I(b) for list of methods.

[b] Page number of calculated transport property data.

TABLE I.—Continued. FORCE CONSTANTS AND METHODS OF DETERMINATION

(a) Continued. Force constants for molecules

Molecule	σ	Method for σ [a]	ϵ/k	Method for ϵ/k [a]	Page [b]	Experimental viscosity data references
CF_2	3.977	17	108	17	47	
CF_3	4.320	17	121	17	47	
CF_4	4.662	1	134.0	1	48	49
CH	3.370	16	68.6	16	48	
CHBrClF	5.13	20	345	20	118	
$CHBrCl_2$	5.25	20	427	20	49	
$CHBr_3$	5.33	20	559	20	49	
$CHClF_2$	4.68	20	261	20	50	
$CHCl_3$	5.389	1	340.2	1	50	32, 52, 56, 57
CHF_3	4.33	20	240	20	51	
CH_2BrCl	4.88	20	410	20	51	
CH_2ClF	4.48	20	318	20	52	
CH_2Cl_2	4.898	1	356.3	1	52	52, 55
CH_2F_2	4.08	20	318	20	53	
CH_2I_2	5.16	20	630	20	53	
CH_3Br	4.118	1	449.2	1	54	58, 59
CH_3Cl	4.182	2	350	2	54	52, 56, 58 to 62
CH_3F	3.73	20	333	20	55	
CH_3I	4.23	20	519	20	55	
CH_3OH	3.626	1	481.8	1	56	32
CH_4	3.758	1	148.6	1	56	23, 27, 29, 39, 41, 44, 56, 63 to 66
CN	3.856	16	75.0	16	57	
CO	3.690	1	91.7	1	57	23, 24, 39, 40, 56, 67, 68, 69
COS	4.130	1	336.0	1	58	70
CO_2	3.941	1	195.2	1	58	23, 34, 41, 42, 71
CP	4.400	16	227	16	59	
CS	4.216	16	199.4	19	59	
CS_2	4.483	2	467	2	60	32
C_2	3.913	16	78.8	16	60	
C_2H_2	4.033	1	231.8	1	61	23, 42, 58, 72
C_2H_4	4.163	1	224.7	1	61	25, 39, 58, 68, 73, 74
C_2H_6	4.443	1	215.7	1	62	27, 44, 58, 61, 72, 75
C_2H_5Cl	4.898	2	300	2	118	56, 61, 76
C_2H_5OH	4.530	1	362.6	1	118	32, 57
C_2N_2	4.361	1	348.6	1	62	66, 77
CH_3OCH_3	4.307	1	395.0	1	63	58, 74
CH_2CHCH_3	4.678	1	298.9	1	63	58, 72, 74, 78
CH_3CCH	4.761	1	251.8	1	64	58
cyclo-C_3H_6	4.807	1	248.9	1	64	49, 58
C_3H_8	5.118	1	237.1	1	65	23, 27, 39, 58, 71, 72
n-C_3H_7OH	4.549	1	576.7	1	118	32
CH_3COCH_3	4.600	1	560.2	1	118	32
CH_3COOCH_3	4.936	1	469.8	1	118	32
n-C_4H_{10}	4.687	1	531.4	1	119	23, 39, 58
iso-C_4H_{10}	5.278	1	330.1	1	119	58
$C_2H_5OC_2H_5$	5.678	1	313.8	1	119	32, 56, 57
$CH_3COOC_2H_5$	5.205	1	521.3	1	119	32
n-C_5H_{12}	5.784	1	341.1	1	119	32

[a] See table I(b) for list of methods.
[b] Page number of calculated transport property data.

TABLE I.—Continued. FORCE CONSTANTS AND METHODS OF DETERMINATION

(a) Continued. Force constants for molecules

Molecule	σ	Method for σ [a]	ϵ/k	Method for ϵ/k [a]	Page [b]	Experimental viscosity data references
$C(CH_3)_4$	6. 464	1	193. 4	1	119	49
C_6H_6	5. 349	1	412. 3	1	65	32
C_6H_{12}	6. 182	1	297. 1	1	119	32, 79
n-C_6H_{14}	5. 949	1	399. 3	1	119	32
Cd	2. 606	2	1227	8	66	80
Cl	3. 613	13	130. 8	19	66	
ClCN	4. 047	2	338. 7	8	67	81
ClF	3. 668	5	203. 4	8	67	
ClF_3	4. 288	5	335. 7	8	68	
ClO	3. 842	16	184	16	68	
Cl_2	4. 217	1	316. 0	1	69	23, 52, 82 to 84
F	2. 968	13	112. 6	15	69	
FCN	3. 578	2	168	19	70	81
F_2	3. 357	1	112. 6	1	70	22
H	2. 708	2	37. 0	23	71	85
HBr	3. 353	2	449	2	71	86
HCN	3. 630	1	569. 1	1	72	52
HCl	3. 339	1	344. 7	1	72	86, 87
HF	3. 148	2	330	2	73	88
HI	4. 211	1	288. 7	1	73	82, 83, 86
HS	3. 673	16	86. 4	19	74	
H_2	2. 827	1	59. 7	1	74	23 to 27, 30, 39 to 41, 63, 65, 68, 71, 73, 89
H_2O	2. 641	1	809. 1	1	75	43, 52, 90 to 96
H_2O_2	4. 196	1	289. 3	1	75	93
H_2S	3. 623	1	301. 1	1	76	66, 97
He	2. 551	2	10. 22	22	76	23, 26, 41, 67, 78, 98 to 101
Hg	2. 969	2	750	2	77	80
$HgBr_2$	5. 080	1	686. 2	1	77	52
$HgCl_2$	4. 550	2	750	2	78	52
HgI_2	5. 625	1	695. 6	1	78	52
I	4. 320	13	210. 7	19	79	
ICl	4. 688	16	437. 3	8	79	
I_2	5. 160	1	474. 2	1	80	52, 102
Kr	3. 655	1	178. 9	1	80	103, 104, 105
Li	2. 850	5	1899	8	81	
LiBr	3. 748	16	1815	8	81	
LiCN	3. 996	12	569. 1	21	120	
LiCl	3. 708	16	1919	8	82	
LiF	3. 278	16	2305	8	82	
LiI	4. 180	16	1726	8	83	
LiO	3. 334	16	450	16	83	
Li_2	3. 200	14	1899	15	84	

[a] See table I(b) for list of methods.

[b] Page number of calculated transport property data.

TABLE I.—Continued. FORCE CONSTANTS AND METHODS OF DETERMINATION

(a) Continued. Force constants for molecules

Molecule	σ	Method for σ [a]	ϵ/k	Method for ϵ/k [a]	Page [b]	Experimental viscosity data references	Experimental thermal conductivity data references
Li_2O	3. 561	12	1827	21	84		
Mg	2. 926	5	1614	8	85		
MgCl	3. 759	16	714	16	85		
$MgCl_2$	4. 340	12	1988	8	86		
MgF	3. 329	16	426	16	86		
MgF_2	3. 623	12	2964	8	87		
Mg_2	3. 301	14	1614	15	120		
N	3. 298	13	71. 4	15	87		
NF_3	4. 154	5	175	9	88		
NH	3. 312	16	65. 3	16	88		
NH_3	2. 900	1	558. 3	1	89	23, 39, 42, 52, 56, 73, 74, 106	
NO	3. 492	1	116. 7	1	89	23, 48, 63, 84, 107	
NOCl	4. 112	1	395. 3	1	90	84	
N_2	3. 798	1	71. 4	1	90	23, 24, 34, 38, 39, 41, 48, 63, 68, 73, 108, 109	
N_2O	3. 828	1	232. 4	1	91	23, 56, 63, 69, 71, 110, 111	
Na	3. 567	5	1375	8	91		
NaBr	4. 226	16	1963	8	92		
NaCN	4. 395	12	2088	8	120		
NaCl	4. 186	16	1989	8	92		
NaF	3. 756	16	2333	8	93		
NaI	4. 658	16	1856	8	93		
NaO	3. 812	16	383	16	94		
NaOH	3. 804	12	1962	8	94		
Na_2	4. 156	14	1375	15	95		
Na_2O	4. 358	12	1827	8	120		
Ne	2. 820	1	32. 8	1	95	23, 26, 41, 67, 75, 101, 104, 112, 113	
O	3. 050	13	106. 7	15	96		
OF	3. 412	16	109. 6	16	96		
OF_2	3. 878	7	161	9	97		
OH	3. 147	16	79. 8	16	97		
O_2	3. 467	1	106. 7	1	98	23, 39, 41, 42, 56, 63, 68, 73, 110	
P	4. 115	11	653	8	98		
PCl	4. 552	16	454	16	120		
PCl_3	5. 240	5	419	9	99		
PF	4. 122	16	271	16	99		
PF_3	4. 360	21	203. 3	9	100		
PH_3	3. 981	1	251. 5	1	100	45	
PN	4. 342	16	216	16	101		
PO	4. 177	16	264	16	101		
PS	4. 703	16	744	16	102		
P_2	4. 887	14	653	15	102		
P_4	5. 455	7	711	9	103		
S	3. 839	11	847	8	103		
SF_6	5. 128	1	222. 1	1	104	48, 49	
SO	3. 993	16	301	16	104		

[a] See table I(b) for list of methods.
[b] Page number of calculated transport property data.

TABLE I.—Continued. FORCE CONSTANTS AND METHODS OF DETERMINATION

(a) Concluded. Force constants for molecules

Molecule	σ	Method for σ [a]	ϵ/k	Method for ϵ/k [a]	Page [b]	Experimental viscosity data references	Experimental thermal conductivity data references
SO_2	4. 112	1	335. 4	1	105	23, 28, 41, 56, 58, 62, 82, 114, 115	
S_2	4. 519	14	847	15	105		
S_2F_2	4. 702	5	205. 6	8	120		
Si	2. 910	6	3036	8	106		
SiCl	3. 748	16	980	16	106		
$SiCl_4$	5. 977	18	390. 2	8	107		
SiF	3. 318	16	585	16	107		
$SiFCl_3$	5. 540	7	329	9	108		
SiF_2Cl_2	5. 270	7	277	9	120		
SiF_3Cl	4. 975	7	231	9	108		
SiF_4	4. 880	1	171. 9	1	109	48, 49	
SiH_4	4. 084	1	207. 6	1	109	116	
SiO	3. 374	16	569	16	110		
SiO_2	3. 706	12	2954	8	110		
SiS	3. 900	16	1432	8	111		
Si_2	3. 280	14	3036	15	111		
$SnBr_4$	6. 388	1	563. 7	1	112	52	
$SnCl_4$	6. 202	2	420	2	112	52	
UF_6	5. 967	1	236. 8	1	120	117, 118, 119	
Xe	4. 047	1	231. 0	1	113	103 to 105, 120	
Zn	2. 284	2	1393	8	113	80	
Ar	3. 408	3	119. 9	3	114		121 to 141
He	2. 608	4	10. 22	22	114		121, 125, 126, 131 to 134, and 138
Kr	3. 690	3	164. 7	3	115		121, 135, 141
Ne	2. 764	3	40. 2	3	115		121, 132, 134, 135, 140, 142, 143, 144
Xe	4. 082	3	206. 9	3	116		121, 135, 141

[a] See table I(b) for list of methods.

[b] Page number of calculated transport property data.

TABLE I.—Concluded. FORCE CONSTANTS AND METHODS OF DETERMINATION

(b) Methods for determining σ and ϵ/k

A. Methods Using Experimental Data

1. Least-squares fit of experimental viscosity data
2. Graphically determined using experimental viscosity data
3. Least-squares fit of experimental thermal conductivity data
4. Graphically determined using experimental thermal conductivity data

B. Methods Using Physical Properties

5. Molar volume at the boiling point (fig. 3)
   $b_0=2/3\ \pi N\sigma^3=2.0\ V_b-5$
6. Molar volume at the melting point (ref. 1, p. 245)
   $b_0=2/3\ \pi N\sigma^3=2.3\ V_m$
7. Critical constants (fig. 4)
   $b_0=2/3\ \pi N\sigma^3=17.28\ T_c/P_c$
8. Boiling-point temperature (fig. 5)
   $\epsilon/k=1.18\ T_b$ (or $1.18\ T_{sub}$ if T_b is not available)
9. Critical temperature (fig. 6)
   $\epsilon/k=0.75\ T_c$
10. Virial coefficients (ref. 1, p. 166)

C. Empirical and Combining Rules

11. $\sigma_{monatomic}=2\bar{r}+1.8$
12. $\sigma_{triatomic}=\frac{5}{12}(\sigma_{A\,diatomic}+\sigma_{B\,diatomic}+\sigma_{C\,diatomic})-0.55$
13. $\sigma_{monatomic}=\frac{3}{4}\sigma_{diatomic}+0.45$
14. $\sigma_{diatomic}=\frac{4}{3}\sigma_{monatomic}-0.60$
15. $(\epsilon/k)_{monatomic}=(\epsilon/k)_{diatomic}$
16. $\sigma_{AB}=\frac{\sigma_{AA}+\sigma_{BB}}{2}$ $\quad (\epsilon/k)_{AB}=\sqrt{(\epsilon/k)_{AA}(\epsilon/k)_{BB}}$
17. Linear relation used between diatomic and highest polyatomic in the series

D. Miscellaneous Methods

18. Brandt's correlation (fig. 7) using ϵ/k of table I(a)
19. Brandt's correlation (fig. 7) using σ of table I(a)
20. Knudsen-gage radiometer measurements (ref. 145)
21. Estimated from similar type molecules
22. Calculated using quantum mechanical formulas (ref. 1, p. 1110)
23. $(\epsilon/k)_H=(\epsilon/k)_{H_2}$, where $(\epsilon/k)_{H_2}$ was calculated from quantum mechanical formulas (ref. 1, p. 1110)

TABLE II.—CONVERSION UNITS FOR VISCOSITY AND THERMAL CONDUCTIVITY

Viscosity
$1 \text{ poise } (\eta) = 1 \dfrac{\text{g}}{(\text{cm})(\text{sec})}$
$= 6.72 \times 10^{-2} \dfrac{\text{lb mass}}{(\text{ft})(\text{sec})}$
$= 242 \dfrac{\text{lb mass}}{(\text{ft})(\text{hr})}$
$= 2.09 \times 10^{-3} \dfrac{(\text{lb force})(\text{sec})}{\text{ft}^2}$
Thermal conductivity
$1 \dfrac{\text{g-cal}}{(\text{cm})(\text{sec})(°\text{K})} = 4.185 \dfrac{\text{joules}}{(\text{cm})(\text{sec})(°\text{K})}$
$= 0.8062 \dfrac{\text{Btu}}{(\text{ft})^2(\text{sec})(°\text{F/in.})}$
$= 6.718 \times 10^{-2} \dfrac{\text{Btu}}{(\text{ft})^2(\text{sec})(°\text{F/ft})}$

TABLE III.—IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Al						AlCl					
M = 26.98, σ = 2.655, ϵ/k = 2750						M = 62.44, σ = 3.578, ϵ/k = 932					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.030	-----	----	---	----	100	3.551	----	---	---	----
200	2.662	-----	----	---	----	200	3.915	74.6	8.9	4.4	13.3
300	2.572	-----	----	---	----	300	4.173	105.3	12.6	7.4	20.0
400	2.540	-----	----	---	----	400	4.309	136.3	16.3	10.4	26.6
500	2.525	-----	----	---	----	500	4.385	168.8	20.1	13.4	33.5
600	2.517	155.1	42.8	0.3	43.1	600	4.433	202.6	24.2	16.4	40.6
700	2.513	176.5	48.8	0.2	49.0	700	4.465	237.0	28.3	19.6	47.8
800	2.510	197.8	54.6	0.2	54.8	800	4.488	271.5	32.4	22.7	55.1
900	2.508	219.1	60.5	0.2	60.7	900	4.506	306.0	36.5	25.8	62.3
1000	2.506	240.4	66.4	0.1	66.5	1000	4.521	339.8	40.6	28.9	69.4
1100	2.505	261.9	72.3	0.1	72.5	1100	4.534	373.2	44.5	31.9	76.4
1200	2.504	283.8	78.4	0.1	78.5	1200	4.545	406.2	48.5	34.9	83.4
1300	2.504	306.1	84.6	0.1	84.7	1300	4.555	438.5	52.3	37.9	90.2
1400	2.503	328.8	90.8	0.1	90.9	1400	4.564	470.0	56.1	40.8	96.8
1500	2.503	351.9	97.2	0.1	97.3	1500	4.573	500.7	59.8	43.6	103.4
1600	2.502	375.2	103.6	0.1	103.7	1600	4.581	530.7	63.3	46.4	109.7
1700	2.502	398.7	110.1	0.1	110.2	1700	4.588	559.9	66.8	49.1	115.9
1800	2.502	422.5	116.7	0.1	116.8	1800	4.596	588.4	70.2	51.8	122.0
1900	2.502	446.4	123.3	0.1	123.4	1900	4.603	616.2	73.5	54.4	128.0
2000	2.501	470.3	129.9	0.1	130.0	2000	4.610	643.3	76.8	57.0	133.8
2100	2.501	494.3	136.5	0.1	136.6	2100	4.617	669.9	80.0	59.6	139.5
2200	2.501	518.3	143.2	0.1	143.2	2200	4.624	696.0	83.1	62.1	145.2
2300	2.501	542.3	149.8	0.1	149.9	2300	4.631	721.5	86.1	64.6	150.7
2400	2.501	566.3	156.4	0.1	156.5	2400	4.638	746.5	89.1	67.0	156.1
2500	2.501	590.2	163.0	0.1	163.1	2500	4.644	771.0	92.0	69.5	161.5
2600	2.501	614.2	169.6	0.1	169.7	2600	4.651	795.2	94.9	71.9	166.8
2700	2.501	638.0	176.2	0.1	176.3	2700	4.658	818.9	97.7	74.3	172.0
2800	2.501	661.6	182.8	0.1	182.8	2800	4.666	842.2	100.5	76.6	177.1
2900	2.501	685.0	189.2	0.1	189.3	2900	4.673	865.1	103.2	79.0	182.2
3000	2.501	708.3	195.7	0.1	195.7	3000	4.681	887.7	105.9	81.3	187.3
3100	2.502	731.6	202.1	0.1	202.2	3100	4.689	909.9	108.6	83.7	192.3
3200	2.502	754.8	208.5	0.2	208.7	3200	4.698	931.7	111.2	86.0	197.3
3300	2.503	777.9	214.9	0.2	215.1	3300	4.708	953.3	113.8	88.4	202.2
3400	2.503	800.9	221.2	0.3	221.5	3400	4.718	974.6	116.3	90.8	207.1
3500	2.504	823.7	227.5	0.4	227.9	3500	4.728	995.5	118.8	93.2	212.0
3600	2.506	846.4	233.8	0.5	234.3	3600	4.740	1016.1	121.3	95.6	216.9
3700	2.507	868.9	240.0	0.6	240.6	3700	4.752	1036.5	123.7	98.1	221.8
3800	2.509	891.2	246.2	0.8	247.0	3800	4.766	1056.8	126.1	100.6	226.7
3900	2.511	913.4	252.3	1.0	253.3	3900	4.780	1076.8	128.5	103.2	231.7
4000	2.514	935.3	258.4	1.3	259.6	4000	4.796	1096.4	130.9	105.7	236.6
4100	2.518	957.1	264.4	1.6	266.0	4100	4.812	1115.9	133.2	108.4	241.6
4200	2.521	978.7	270.3	2.0	272.4	4200	4.830	1135.0	135.5	111.1	246.6
4300	2.526	1000.1	276.2	2.5	278.7	4300	4.849	1154.0	137.7	113.9	251.6
4400	2.531	1021.3	282.1	3.0	285.2	4400	4.869	1172.7	140.0	116.7	256.7
4500	2.536	1042.4	287.9	3.7	291.6	4500	4.890	1191.2	142.2	119.6	261.8
4600	2.543	1063.2	293.7	4.4	298.1	4600	4.912	1209.6	144.4	122.6	266.9
4700	2.551	1083.9	299.4	5.3	304.7	4700	4.936	1227.7	146.5	125.6	272.2
4800	2.559	1104.4	305.1	6.3	311.4	4800	4.960	1245.7	148.7	128.8	277.4
4900	2.568	1124.7	310.7	7.5	318.1	4900	4.986	1263.6	150.8	132.0	282.8
5000	2.579	1144.9	316.2	8.7	325.0	5000	5.013	1281.3	152.9	135.3	288.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$AlCl_3$						AlF					
M = 133.35, σ = 5.127, ϵ/k = 472						M = 45.98, σ = 3.148, ϵ/k = 556					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	5.814	37.4	2.1	2.4	4.5	100	3.502	----	----	---	----
200	7.642	68.2	3.8	6.9	10.7	200	3.612	99.4	16.1	6.3	22.4
300	8.608	101.3	5.7	12.2	17.8	300	3.845	145.4	23.6	11.2	34.7
400	9.116	135.8	7.6	17.7	25.3	400	4.041	194.2	31.5	17.1	48.6
500	9.398	169.9	9.5	23.1	32.6	500	4.177	243.8	39.5	23.3	62.8
600	9.567	203.2	11.4	28.3	39.6	600	4.269	292.6	47.4	29.5	77.0
700	9.675	235.2	13.1	33.2	46.3	700	4.334	340.3	55.2	35.6	90.8
800	9.748	265.7	14.9	37.9	52.7	800	4.380	386.6	62.7	41.5	104.1
900	9.799	294.7	16.5	42.3	58.8	900	4.415	431.0	69.8	47.1	116.9
1000	9.836	322.4	18.0	46.5	64.5	1000	4.442	473.5	76.7	52.4	129.2
1100	9.864	348.8	19.5	50.5	70.0	1100	4.463	514.3	83.4	57.6	141.0
1200	9.885	374.3	20.9	54.4	75.3	1200	4.481	553.5	89.7	62.6	152.3
1300	9.902	398.7	22.3	58.1	80.3	1300	4.496	591.3	95.8	67.3	163.2
1400	9.915	422.4	23.6	61.6	85.2	1400	4.509	627.8	101.8	71.9	173.7
1500	9.926	445.3	24.9	65.0	89.9	1500	4.520	663.2	107.5	76.4	183.9
1600	9.935	467.4	26.1	68.4	94.5	1600	4.530	697.5	113.0	80.8	193.8
1700	9.942	489.0	27.3	71.6	98.9	1700	4.539	730.9	118.5	85.0	203.5
1800	9.948	509.9	28.5	74.7	103.2	1800	4.548	763.3	123.7	89.2	212.9
1900	9.954	530.3	29.6	77.8	107.4	1900	4.556	795.0	128.8	93.2	222.1
2000	9.958	550.3	30.8	80.7	111.5	2000	4.563	825.8	133.8	97.2	231.1
2100	9.962	569.7	31.8	83.6	115.5	2100	4.570	856.0	138.7	101.1	239.8
2200	9.965	588.7	32.9	86.4	119.3	2200	4.577	885.3	143.5	104.9	248.4
2300	9.968	607.2	33.9	89.2	123.1	2300	4.583	914.4	148.2	108.7	256.9
2400	9.971	625.4	35.0	91.9	126.9	2400	4.590	942.7	152.8	112.4	265.2
2500	9.973	643.3	35.9	94.6	130.5	2500	4.596	970.3	157.3	116.0	273.3
2600	9.975	660.9	36.9	97.2	134.1	2600	4.601	997.4	161.7	119.6	281.2
2700	9.977	678.2	37.9	99.7	137.6	2700	4.607	1024.1	166.0	123.1	289.1
2800	9.978	695.2	38.9	102.3	141.1	2800	4.613	1050.2	170.2	126.6	296.8
2900	9.980	712.0	39.8	104.8	144.6	2900	4.618	1076.0	174.4	130.0	304.4
3000	9.981	728.6	40.7	107.2	147.9	3000	4.624	1101.4	178.5	133.4	311.9
3100	9.982	745.0	41.6	109.6	151.3	3100	4.629	1126.5	182.6	136.8	319.4
3200	9.984	761.1	42.5	112.0	154.6	3200	4.634	1151.2	186.6	140.2	326.7
3300	9.984	777.0	43.4	114.4	157.8	3300	4.639	1175.7	190.5	143.5	334.0
3400	9.985	792.8	44.3	116.7	161.0	3400	4.644	1199.8	194.5	146.8	341.2
3500	9.986	808.3	45.2	119.0	164.2	3500	4.649	1223.7	198.3	150.1	348.4
3600	9.987	823.7	46.0	121.3	167.3	3600	4.654	1247.2	202.1	153.3	355.4
3700	9.988	838.8	46.9	123.6	170.4	3700	4.659	1270.6	205.9	156.5	362.5
3800	9.988	853.8	47.7	125.8	173.5	3800	4.664	1293.6	209.7	159.7	369.4
3900	9.989	868.6	48.5	128.0	176.5	3900	4.669	1316.4	213.4	162.9	376.3
4000	9.989	883.3	49.4	130.1	179.5	4000	4.674	1339.0	217.0	166.1	383.1
4100	9.990	897.7	50.2	132.3	182.4	4100	4.679	1361.4	220.6	169.2	389.9
4200	9.990	912.1	51.0	134.4	185.4	4200	4.684	1383.5	224.2	172.4	396.6
4300	9.991	926.2	51.8	136.5	188.2	4300	4.689	1405.3	227.8	175.5	403.2
4400	9.991	940.2	52.5	138.6	191.1	4400	4.693	1427.0	231.3	178.6	409.8
4500	9.992	954.1	53.3	140.6	193.9	4500	4.698	1448.4	234.8	181.6	416.4
4600	9.992	967.8	54.1	142.6	196.7	4600	4.703	1469.6	238.2	184.7	422.9
4700	9.992	981.4	54.8	144.6	199.5	4700	4.708	1490.7	241.6	187.8	429.4
4800	9.993	994.9	55.6	146.6	202.2	4800	4.712	1511.5	245.0	190.8	435.8
4900	9.993	1008.2	56.3	148.6	204.9	4900	4.717	1532.1	248.3	193.8	442.1
5000	9.993	1021.4	57.1	150.6	207.6	5000	4.722	1552.5	251.6	196.8	448.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

AlF_3						AlN					
$M = 83.98$, $\sigma = 4.198$, $\epsilon/k = 1846$						$M = 40.99$, $\sigma = 3.369$, $\epsilon/k = 2682$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.622	----	---	----	----	100	3.502	-----	----	----	----
200	6.196	----	---	----	----	200	3.588	-----	----	----	----
300	7.363	----	---	----	----	300	3.803	-----	----	----	----
400	8.157	89.2	7.9	15.8	23.7	400	4.002	-----	----	----	----
500	8.674	107.6	9.5	20.8	30.3	500	4.146	-----	----	----	----
600	9.013	125.9	11.2	25.6	36.8	600	4.246	119.7	21.8	13.4	35.1
700	9.243	144.3	12.8	30.4	43.2	700	4.317	136.3	24.8	15.8	40.6
800	9.403	163.1	14.5	35.2	49.6	800	4.369	152.8	27.8	18.3	46.1
900	9.519	182.3	16.2	40.0	56.2	900	4.408	169.3	30.8	20.7	51.4
1000	9.604	202.1	17.9	44.8	62.8	1000	4.439	185.8	33.8	23.1	56.8
1100	9.669	222.2	19.7	49.8	69.5	1100	4.464	202.6	36.8	25.5	62.3
1200	9.720	242.6	21.5	54.7	76.2	1200	4.484	219.7	39.9	27.9	67.8
1300	9.760	263.1	23.4	59.7	83.0	1300	4.502	237.1	43.1	30.4	73.5
1400	9.792	283.8	25.2	64.6	89.8	1400	4.517	254.7	46.3	32.9	79.2
1500	9.818	304.5	27.0	69.6	96.6	1500	4.530	272.7	49.6	35.4	85.0
1600	9.839	325.1	28.9	74.5	103.4	1600	4.542	290.8	52.9	38.0	90.9
1700	9.857	345.8	30.7	79.5	110.1	1700	4.553	309.2	56.2	40.6	96.8
1800	9.872	366.3	32.5	84.4	116.9	1800	4.563	327.6	59.6	43.3	102.8
1900	9.885	386.7	34.3	89.2	123.5	1900	4.573	346.1	62.9	45.9	108.9
2000	9.896	406.8	36.1	94.0	130.1	2000	4.582	364.7	66.3	48.6	114.9
2100	9.906	426.8	37.9	98.7	136.6	2100	4.590	383.3	69.7	51.3	121.0
2200	9.914	446.8	39.6	103.5	143.1	2200	4.598	402.0	73.1	54.0	127.1
2300	9.921	466.6	41.4	108.1	149.5	2300	4.606	420.6	76.5	56.7	133.1
2400	9.927	486.1	43.1	112.8	155.9	2400	4.614	439.1	79.8	59.4	139.2
2500	9.933	505.5	44.9	117.4	162.2	2500	4.621	457.7	83.2	62.1	145.3
2600	9.938	524.7	46.6	121.9	168.5	2600	4.628	476.2	86.6	64.9	151.4
2700	9.943	543.6	48.2	126.4	174.6	2700	4.635	494.6	89.9	67.6	157.5
2800	9.947	562.3	49.9	130.8	180.7	2800	4.642	512.7	93.2	70.3	163.5
2900	9.950	580.7	51.5	135.1	186.7	2900	4.649	530.8	96.5	73.0	169.5
3000	9.953	598.9	53.1	139.4	192.6	3000	4.655	548.9	99.8	75.7	175.5
3100	9.956	616.9	54.7	143.7	198.4	3100	4.662	566.9	103.1	78.4	181.5
3200	9.959	634.6	56.3	147.9	204.2	3200	4.668	584.8	106.3	81.2	187.5
3300	9.961	652.2	57.9	152.0	209.9	3300	4.675	602.6	109.6	83.9	193.4
3400	9.964	669.5	59.4	156.1	215.5	3400	4.681	620.4	112.8	86.6	199.4
3500	9.966	686.6	60.9	160.1	221.0	3500	4.687	637.9	116.0	89.3	205.3
3600	9.968	703.4	62.4	164.1	226.5	3600	4.694	655.4	119.2	92.0	211.2
3700	9.969	720.1	63.9	168.0	231.9	3700	4.700	672.7	122.3	94.7	217.0
3800	9.971	736.6	65.4	171.9	237.3	3800	4.706	689.9	125.4	97.4	222.8
3900	9.972	752.9	66.8	175.7	242.5	3900	4.712	706.9	128.5	100.1	228.6
4000	9.974	769.0	68.2	179.5	247.8	4000	4.718	723.8	131.6	102.7	234.3
4100	9.975	784.9	69.7	183.3	252.9	4100	4.724	740.5	134.6	105.4	240.0
4200	9.976	800.7	71.1	187.0	258.0	4200	4.730	757.1	137.6	108.0	245.7
4300	9.977	816.3	72.4	190.6	263.1	4300	4.736	773.5	140.6	110.7	251.3
4400	9.978	831.7	73.8	194.3	268.1	4400	4.742	789.8	143.6	113.3	256.9
4500	9.979	847.0	75.2	197.9	273.0	4500	4.748	806.0	146.5	115.9	262.5
4600	9.980	862.1	76.5	201.4	277.9	4600	4.754	822.0	149.4	118.6	268.0
4700	9.981	877.1	77.8	205.0	282.8	4700	4.760	837.9	152.3	121.2	273.5
4800	9.982	891.9	79.1	208.4	287.6	4800	4.766	853.6	155.2	123.8	278.9
4900	9.982	906.6	80.5	211.9	292.4	4900	4.771	869.2	158.0	126.3	284.4
5000	9.983	921.2	81.7	215.3	297.1	5000	4.777	884.6	160.8	128.9	289.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

AlO						AlS					
M = 42.98, σ = 3.204, ϵ/k = 542						M = 59.05, σ = 3.730, ϵ/k = 1526					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.501	----	----	---	----	100	3.513	----	----	---	----
200	3.549	93.7	16.2	6.0	22.2	200	3.748	----	----	---	----
300	3.718	137.4	23.8	10.2	34.0	300	4.021	79.7	10.1	5.4	15.4
400	3.908	183.7	31.8	15.8	47.6	400	4.194	101.1	12.8	7.6	20.4
500	4.059	230.5	40.0	21.9	61.9	500	4.299	122.4	15.5	9.8	25.2
600	4.171	276.5	47.9	28.2	76.1	600	4.365	144.0	18.2	11.9	30.1
700	4.251	321.5	55.7	34.4	90.1	700	4.410	166.1	21.0	14.1	35.1
800	4.311	364.8	63.3	40.3	103.6	800	4.442	188.9	23.8	16.3	40.1
900	4.357	406.4	70.5	46.1	116.5	900	4.466	212.4	26.8	18.5	45.3
1000	4.392	446.2	77.4	51.5	128.9	1000	4.485	236.2	29.8	20.8	50.6
1100	4.420	484.3	84.0	56.8	140.7	1100	4.500	260.2	32.8	23.1	56.0
1200	4.443	521.0	90.3	61.8	152.1	1200	4.513	284.4	35.9	25.4	61.3
1300	4.462	556.3	96.5	66.6	163.1	1300	4.524	308.5	38.9	27.7	66.7
1400	4.478	590.4	102.4	71.3	173.7	1400	4.534	332.6	42.0	30.1	72.0
1500	4.492	623.5	108.1	75.8	183.9	1500	4.543	356.7	45.0	32.4	77.4
1600	4.504	655.6	113.7	80.2	193.9	1600	4.551	380.3	48.0	34.7	82.6
1700	4.515	686.7	119.1	84.5	203.5	1700	4.559	403.8	51.0	36.9	87.9
1800	4.525	717.1	124.3	88.6	213.0	1800	4.566	427.1	53.9	39.2	93.1
1900	4.534	746.6	129.5	92.7	222.2	1900	4.573	450.3	56.8	41.5	98.3
2000	4.543	775.4	134.5	96.7	231.1	2000	4.579	473.1	59.7	43.7	103.4
2100	4.551	803.5	139.3	100.6	239.9	2100	4.585	495.7	62.6	45.9	108.5
2200	4.558	831.1	144.1	104.4	248.5	2200	4.591	517.9	65.4	48.1	113.5
2300	4.565	858.2	148.8	108.2	257.0	2300	4.597	539.8	68.1	50.3	118.4
2400	4.572	884.5	153.4	111.9	265.2	2400	4.603	561.4	70.8	52.4	123.3
2500	4.579	910.3	157.8	115.5	273.3	2500	4.609	582.6	73.5	54.6	128.1
2600	4.585	935.7	162.2	119.1	281.3	2600	4.614	603.5	76.2	56.7	132.9
2700	4.592	960.5	166.5	122.6	289.2	2700	4.620	624.1	78.8	58.8	137.5
2800	4.598	985.0	170.8	126.2	296.9	2800	4.625	644.4	81.3	60.8	142.2
2900	4.605	1009.1	175.0	129.7	304.6	2900	4.631	664.3	83.8	62.9	146.7
3000	4.612	1032.9	179.1	133.1	312.2	3000	4.636	684.0	86.3	64.9	151.2
3100	4.619	1056.3	183.2	136.6	319.8	3100	4.641	703.4	88.8	66.9	155.7
3200	4.626	1079.5	187.2	140.1	327.2	3200	4.646	722.5	91.2	68.9	160.1
3300	4.633	1102.3	191.1	143.5	334.7	3300	4.651	741.4	93.6	70.9	164.4
3400	4.641	1124.9	195.1	147.0	342.0	3400	4.656	760.0	95.9	72.8	168.7
3500	4.649	1147.3	198.9	150.5	349.4	3500	4.662	778.4	98.2	74.7	173.0
3600	4.657	1169.3	202.7	153.9	356.7	3600	4.667	796.5	100.5	76.7	177.2
3700	4.666	1191.1	206.5	157.4	364.0	3700	4.672	814.4	102.8	78.6	181.3
3800	4.675	1212.7	210.3	161.0	371.2	3800	4.677	832.1	105.0	80.5	185.5
3900	4.684	1234.1	214.0	164.5	378.5	3900	4.682	849.6	107.2	82.3	189.6
4000	4.694	1255.2	217.6	168.0	385.7	4000	4.687	866.9	109.4	84.2	193.6
4100	4.703	1276.1	221.3	171.6	392.9	4100	4.692	884.0	111.6	86.1	197.6
4200	4.714	1296.7	224.8	175.2	400.0	4200	4.697	900.9	113.7	87.9	201.6
4300	4.724	1317.2	228.4	178.8	407.2	4300	4.702	917.6	115.8	89.7	205.5
4400	4.735	1337.4	231.9	182.5	414.4	4400	4.706	934.2	117.9	91.6	209.5
4500	4.747	1357.4	235.4	186.1	421.5	4500	4.711	950.6	120.0	93.4	213.3
4600	4.758	1377.3	238.8	189.8	428.6	4600	4.716	966.8	122.0	95.2	217.2
4700	4.770	1396.9	242.2	193.5	435.8	4700	4.721	982.8	124.0	97.0	221.0
4800	4.782	1416.4	245.6	197.3	442.9	4800	4.726	998.7	126.0	98.8	224.8
4900	4.795	1435.6	248.9	201.1	450.0	4900	4.731	1014.5	128.0	100.5	228.6
5000	4.807	1454.7	252.2	204.8	457.1	5000	4.736	1030.1	130.0	102.3	232.3

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Al_2						Ar					
$M = 53.96$, $\sigma = 2.940$, $\epsilon/k = 2750$						$M = 39.944$, $\sigma = 3.542$, $\epsilon/k = 93.3$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.607	-----	----	----	----	100	2.500	87.7	16.4	0.0	16.4
200	4.026	-----	----	----	----	200	2.500	166.0	31.0	0.0	31.0
300	4.247	-----	----	----	----	300	2.500	229.0	42.7	0.0	42.7
400	4.350	-----	----	----	----	400	2.500	282.9	52.8	0.0	52.8
500	4.403	-----	----	----	----	500	2.500	330.6	61.7	0.0	61.7
600	4.435	178.9	24.7	16.8	41.5	600	2.500	374.4	69.9	0.0	69.9
700	4.455	203.6	28.1	19.4	47.5	700	2.500	415.3	77.5	0.0	77.5
800	4.469	228.2	31.5	21.8	53.4	800	2.500	453.8	84.7	0.0	84.7
900	4.479	252.6	34.9	24.3	59.2	900	2.500	490.1	91.4	0.0	91.4
1000	4.487	277.2	38.3	26.8	65.1	1000	2.500	524.7	97.9	0.0	97.9
1100	4.493	302.1	41.7	29.3	71.0	1100	2.500	557.8	104.1	0.0	104.1
1200	4.498	327.4	45.2	31.8	77.0	1200	2.500	589.8	110.0	0.0	110.0
1300	4.502	353.1	48.8	34.4	83.1	1300	2.500	621.0	115.9	0.0	115.9
1400	4.505	379.3	52.4	37.0	89.4	1400	2.500	651.9	121.6	0.0	121.6
1500	4.509	405.8	56.0	39.6	95.7	1500	2.500	682.5	127.3	0.0	127.3
1600	4.512	432.7	59.8	42.3	102.1	1600	2.500	712.0	132.8	0.0	132.8
1700	4.514	459.9	63.5	45.0	108.5	1700	2.500	740.7	138.2	0.0	138.2
1800	4.517	487.3	67.3	47.8	115.1	1800	2.500	768.9	143.4	0.0	143.4
1900	4.519	514.8	71.1	50.5	121.6	1900	2.500	796.4	148.6	0.0	148.6
2000	4.521	542.4	74.9	53.3	128.2	2000	2.500	823.4	153.6	0.0	153.6
2100	4.523	570.1	78.7	56.1	134.8	2100	2.500	849.9	158.6	0.0	158.6
2200	4.525	597.8	82.6	58.8	141.4	2200	2.500	876.0	163.4	0.0	163.4
2300	4.527	625.5	86.4	61.6	148.0	2300	2.500	901.6	168.2	0.0	168.2
2400	4.529	653.1	90.2	64.4	154.6	2400	2.500	926.8	172.9	0.0	172.9
2500	4.530	680.7	94.0	67.2	161.2	2500	2.500	951.6	177.5	0.0	177.5
2600	4.532	708.3	97.8	70.0	167.8	2600	2.500	976.0	182.1	0.0	182.1
2700	4.534	735.9	101.6	72.8	174.4	2700	2.500	1000.1	186.6	0.0	186.6
2800	4.535	763.1	105.4	75.5	180.9	2800	2.500	1023.9	191.0	0.0	191.0
2900	4.537	790.0	109.1	78.2	187.3	2900	2.500	1047.4	195.4	0.0	195.4
3000	4.539	816.9	112.8	81.0	193.8	3000	2.500	1070.6	199.7	0.0	199.7
3100	4.540	843.8	116.5	83.7	200.2	3100	2.500	1093.5	204.0	0.0	204.0
3200	4.542	870.6	120.2	86.4	206.6	3200	2.500	1116.2	208.2	0.0	208.2
3300	4.543	897.2	123.9	89.1	213.0	3300	2.500	1138.6	212.4	0.0	212.4
3400	4.545	923.7	127.6	91.8	219.4	3400	2.500	1160.7	216.5	0.0	216.5
3500	4.546	950.0	131.2	94.5	225.7	3500	2.500	1182.6	220.6	0.0	220.6
3600	4.548	976.2	134.8	97.2	232.0	3600	2.500	1204.3	224.7	0.0	224.7
3700	4.549	1002.1	138.4	99.8	238.2	3700	2.500	1225.8	228.7	0.0	228.7
3800	4.551	1027.9	142.0	102.5	244.4	3800	2.500	1247.1	232.7	0.0	232.7
3900	4.552	1053.4	145.5	105.1	250.6	3900	2.500	1268.1	236.6	0.0	236.6
4000	4.554	1078.7	149.0	107.7	256.7	4000	2.500	1289.0	240.5	0.0	240.5
4100	4.555	1103.9	152.4	110.3	262.7	4100	2.500	1309.7	244.3	0.0	244.3
4200	4.557	1128.8	155.9	112.9	268.8	4200	2.500	1330.2	248.2	0.0	248.2
4300	4.558	1153.4	159.3	115.4	274.7	4300	2.500	1350.6	252.0	0.0	252.0
4400	4.560	1177.9	162.7	117.9	280.6	4400	2.500	1370.7	255.7	0.0	255.7
4500	4.561	1202.2	166.0	120.5	286.5	4500	2.500	1390.7	259.5	0.0	259.5
4600	4.563	1226.2	169.4	123.0	292.3	4600	2.500	1410.6	263.2	0.0	263.2
4700	4.564	1250.1	172.6	125.4	298.1	4700	2.500	1430.3	266.8	0.0	266.8
4800	4.566	1273.7	175.9	127.9	303.8	4800	2.500	1449.8	270.5	0.0	270.5
4900	4.567	1297.2	179.1	130.3	309.5	4900	2.500	1469.2	274.1	0.0	274.1
5000	4.568	1320.4	182.4	132.8	315.1	5000	2.500	1488.5	277.7	0.0	277.7

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TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

AsH_3						B					
M = 77.94, σ = 4.145, ϵ/k = 259.8						M = 10.82, σ = 2.265, ϵ/k = 3331					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	4.001	54.2	5.2	2.7	7.9	100	2.513	-----	----	---	----
200	4.203	106.8	10.2	6.1	16.3	200	2.503	-----	----	---	----
300	4.894	160.6	15.4	12.9	28.3	300	2.501	-----	----	---	----
400	5.685	211.3	20.2	22.7	42.9	400	2.501	-----	----	---	----
500	6.379	257.8	24.7	33.7	58.3	500	2.500	-----	----	---	----
600	6.955	300.5	28.7	45.1	73.8	600	2.500	-----	----	---	----
700	7.430	340.1	32.5	56.4	88.9	700	2.500	144.1	99.2	0.0	99.2
800	7.818	377.2	36.1	67.5	103.6	800	2.500	160.9	110.8	0.0	110.8
900	8.136	412.3	39.4	78.2	117.6	900	2.500	177.9	122.5	0.0	122.5
1000	8.397	445.5	42.6	88.4	131.0	1000	2.500	194.7	134.1	0.0	134.1
1100	8.611	477.3	45.6	98.2	143.8	1100	2.500	211.4	145.6	0.0	145.6
1200	8.789	507.6	48.5	107.4	156.0	1200	2.500	228.3	157.2	0.0	157.2
1300	8.936	536.7	51.3	116.3	167.6	1300	2.500	245.3	168.9	0.0	168.9
1400	9.060	564.9	54.0	124.7	178.7	1400	2.500	262.5	180.8	0.0	180.8
1500	9.164	592.2	56.6	132.8	189.5	1500	2.500	280.0	192.8	0.0	192.8
1600	9.253	618.9	59.2	140.7	199.8	1600	2.500	297.7	205.0	0.0	205.0
1700	9.329	644.8	61.7	148.2	209.9	1700	2.500	315.7	217.4	0.0	217.4
1800	9.394	670.2	64.1	155.5	219.6	1800	2.500	333.9	229.9	0.0	230.0
1900	9.451	695.0	66.4	162.6	229.0	1900	2.500	352.3	242.6	0.0	242.6
2000	9.500	719.2	68.8	169.4	238.2	2000	2.500	370.8	255.4	0.0	255.4
2100	9.543	742.9	71.0	176.1	247.1	2100	2.500	389.5	268.3	0.0	268.3
2200	9.581	766.1	73.2	182.6	255.8	2200	2.500	408.3	281.2	0.0	281.2
2300	9.614	788.8	75.4	188.9	264.3	2300	2.500	427.2	294.2	0.0	294.2
2400	9.644	811.1	77.6	195.0	272.6	2400	2.500	446.1	307.3	0.0	307.3
2500	9.670	832.9	79.6	201.0	280.6	2500	2.500	465.1	320.3	0.0	320.3
2600	9.694	854.4	81.7	206.9	288.6	2600	2.500	484.1	333.4	0.0	333.4
2700	9.715	875.5	83.7	212.6	296.3	2700	2.500	503.0	346.5	0.0	346.5
2800	9.734	896.2	85.7	218.2	303.9	2800	2.500	522.0	359.5	0.0	359.6
2900	9.751	916.7	87.6	223.7	311.4	2900	2.500	541.0	372.6	0.0	372.6
3000	9.767	936.8	89.6	229.1	318.7	3000	2.500	559.9	385.6	0.1	385.7
3100	9.781	956.7	91.5	234.5	325.9	3100	2.501	578.8	398.7	0.1	398.7
3200	9.794	976.4	93.4	239.7	333.1	3200	2.501	597.7	411.7	0.1	411.8
3300	9.806	995.8	95.2	244.9	340.1	3300	2.501	616.6	424.7	0.2	424.8
3400	9.817	1015.1	97.1	250.0	347.0	3400	2.502	635.2	437.5	0.2	437.7
3500	9.827	1034.2	98.9	255.0	353.9	3500	2.502	653.6	450.2	0.3	450.5
3600	9.836	1053.3	100.7	260.1	360.8	3600	2.503	672.1	462.9	0.4	463.3
3700	9.845	1072.2	102.5	265.0	367.6	3700	2.503	690.5	475.6	0.6	476.2
3800	9.853	1091.0	104.3	270.0	374.3	3800	2.504	708.9	488.3	0.8	489.0
3900	9.860	1109.8	106.1	274.9	381.0	3900	2.506	727.3	500.9	1.0	501.9
4000	9.867	1128.6	107.9	279.8	387.7	4000	2.507	745.5	513.5	1.2	514.7
4100	9.873	1147.4	109.7	284.7	394.4	4100	2.508	763.7	526.0	1.6	527.5
4200	9.879	1165.9	111.5	289.6	401.0	4200	2.510	781.7	538.4	1.9	540.4
4300	9.884	1184.0	113.2	294.3	407.5	4300	2.512	799.7	550.8	2.4	553.2
4400	9.889	1202.0	114.9	298.9	413.9	4400	2.515	817.6	563.1	2.9	566.0
4500	9.894	1219.8	116.6	303.6	420.2	4500	2.517	835.3	575.3	3.5	578.8
4600	9.899	1237.4	118.3	308.1	426.5	4600	2.520	853.0	587.5	4.2	591.7
4700	9.903	1254.9	120.0	312.7	432.7	4700	2.524	870.5	599.6	5.0	604.5
4800	9.907	1272.3	121.7	317.2	438.8	4800	2.527	887.9	611.5	5.8	617.4
4900	9.911	1289.5	123.3	321.6	444.9	4900	2.531	905.2	623.5	6.8	630.3
5000	9.914	1306.6	124.9	326.0	451.0	5000	2.535	922.4	635.3	7.9	643.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

BBr_3						BCl					
$M = 250.57$, $\sigma = 5.439$, $\epsilon/k = 430$						$M = 46.28$, $\sigma = 3.318$, $\epsilon/k = 1026$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	5.833	47.0	1.4	1.6	3.0	100	3.502	----	----	---	----
200	7.328	86.6	2.6	4.4	6.9	200	3.593	72.6	11.7	4.5	16.2
300	8.220	129.4	3.8	7.8	11.6	300	3.812	101.8	16.4	7.6	24.0
400	8.786	173.5	5.2	11.4	16.6	400	4.009	131.1	21.1	11.2	32.3
500	9.139	216.6	6.4	15.1	21.5	500	4.150	161.5	26.0	15.1	41.1
600	9.366	258.3	7.7	18.6	26.2	600	4.248	193.2	31.1	19.1	50.2
700	9.516	297.9	8.9	21.9	30.7	700	4.317	225.7	36.3	23.2	59.6
800	9.620	335.4	10.0	25.0	35.0	800	4.367	258.6	41.6	27.4	69.0
900	9.695	371.0	11.0	27.9	39.0	900	4.404	291.6	47.0	31.5	78.4
1000	9.749	404.9	12.0	30.7	42.8	1000	4.433	324.4	52.2	35.5	87.8
1100	9.791	437.3	13.0	33.4	46.4	1100	4.457	356.7	57.4	39.6	97.0
1200	9.823	468.4	13.9	35.9	49.8	1200	4.476	388.6	62.6	43.5	106.1
1300	9.848	498.3	14.8	38.3	53.2	1300	4.492	420.1	67.6	47.4	115.1
1400	9.869	527.2	15.7	40.7	56.4	1400	4.506	451.1	72.6	51.3	123.9
1500	9.885	555.2	16.5	42.9	59.4	1500	4.518	481.4	77.5	55.1	132.6
1600	9.899	582.3	17.3	45.1	62.4	1600	4.529	511.0	82.3	58.8	141.1
1700	9.910	608.5	18.1	47.2	65.3	1700	4.539	540.0	86.9	62.4	149.4
1800	9.920	634.2	18.9	49.3	68.1	1800	4.548	568.3	91.5	66.0	157.5
1900	9.928	659.1	19.6	51.3	70.9	1900	4.557	595.9	96.0	69.5	165.4
2000	9.935	683.4	20.3	53.2	73.5	2000	4.564	623.0	100.3	72.9	173.2
2100	9.941	707.0	21.0	55.1	76.1	2100	4.572	649.4	104.6	76.3	180.8
2200	9.946	730.2	21.7	56.9	78.6	2200	4.579	675.3	108.7	79.6	188.3
2300	9.950	752.9	22.4	58.7	81.1	2300	4.586	700.7	112.8	82.8	195.7
2400	9.954	775.3	23.1	60.5	83.6	2400	4.592	725.7	116.8	86.1	202.9
2500	9.958	797.2	23.7	62.2	86.0	2500	4.599	750.1	120.8	89.2	210.0
2600	9.961	818.8	24.4	64.0	88.3	2600	4.605	774.1	124.7	92.4	217.0
2700	9.964	840.1	25.0	65.6	90.6	2700	4.611	797.8	128.5	95.5	223.9
2800	9.966	861.0	25.6	67.3	92.9	2800	4.617	821.0	132.2	98.5	230.7
2900	9.969	881.7	26.2	68.9	95.2	2900	4.623	843.8	135.9	101.5	237.4
3000	9.971	902.1	26.8	70.6	97.4	3000	4.628	866.3	139.5	104.5	244.0
3100	9.973	922.2	27.4	72.1	99.6	3100	4.634	888.5	143.1	107.5	250.5
3200	9.974	942.0	28.0	73.7	101.7	3200	4.640	910.3	146.6	110.4	257.0
3300	9.976	961.5	28.6	75.3	103.8	3300	4.645	931.8	150.1	113.3	263.3
3400	9.977	980.8	29.2	76.8	105.9	3400	4.650	953.1	153.5	116.2	269.6
3500	9.978	999.8	29.7	78.3	108.0	3500	4.656	974.0	156.8	119.0	275.8
3600	9.980	1018.6	30.3	79.8	110.1	3600	4.661	994.6	160.2	121.8	282.0
3700	9.981	1037.2	30.8	81.2	112.1	3700	4.666	1015.0	163.4	124.6	288.1
3800	9.982	1055.5	31.4	82.7	114.1	3800	4.672	1035.1	166.7	127.4	294.1
3900	9.983	1073.7	31.9	84.1	116.0	3900	4.677	1055.0	169.9	130.2	300.0
4000	9.984	1091.6	32.5	85.5	118.0	4000	4.682	1074.6	173.0	132.9	305.9
4100	9.984	1109.3	33.0	86.9	119.9	4100	4.688	1093.9	176.1	135.6	311.8
4200	9.985	1126.8	33.5	88.3	121.8	4200	4.693	1113.3	179.3	138.4	317.6
4300	9.986	1144.1	34.0	89.7	123.7	4300	4.698	1132.3	182.3	141.1	323.4
4400	9.986	1161.2	34.5	91.0	125.5	4400	4.704	1151.1	185.4	143.8	329.1
4500	9.987	1178.2	35.0	92.3	127.4	4500	4.709	1169.6	188.3	146.5	334.8
4600	9.988	1195.0	35.5	93.7	129.2	4600	4.715	1187.9	191.3	149.1	340.4
4700	9.988	1211.6	36.0	95.0	131.0	4700	4.720	1206.1	194.2	151.8	346.0
4800	9.989	1228.1	36.5	96.3	132.8	4800	4.726	1224.0	197.1	154.4	351.5
4900	9.989	1244.5	37.0	97.6	134.6	4900	4.732	1241.8	200.0	157.1	357.0
5000	9.989	1260.7	37.5	98.8	136.3	5000	4.738	1259.4	202.8	159.7	362.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

BCl_2						BCl_3					
M = 81.73, σ = 4.222, ϵ/k = 682						M = 117.19, σ = 5.127, ϵ/k = 337.7					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	4.350	----	---	---	----	100	4.899	39.3	2.5	2.1	4.6
200	4.898	68.3	6.2	5.3	11.5	200	6.502	74.8	4.8	6.7	11.5
300	5.391	98.0	8.9	9.1	18.0	300	7.562	112.9	7.2	12.8	20.0
400	5.805	129.6	11.8	13.8	25.6	400	8.272	150.4	9.6	19.4	29.0
500	6.108	162.5	14.8	18.8	33.6	500	8.742	186.2	11.8	26.0	37.9
600	6.321	195.7	17.8	24.0	41.8	600	9.057	219.7	14.0	32.2	46.2
700	6.470	228.6	20.8	29.1	50.0	700	9.272	251.0	16.0	38.0	54.0
800	6.578	260.8	23.8	34.1	57.9	800	9.424	280.3	17.8	43.4	61.3
900	6.657	292.4	26.7	39.0	65.7	900	9.534	308.1	19.6	48.5	68.1
1000	6.717	323.0	29.5	43.7	73.2	1000	9.616	334.5	21.3	53.3	74.6
1100	6.762	352.6	32.2	48.2	80.4	1100	9.679	359.7	22.9	57.8	80.7
1200	6.798	381.2	34.8	52.6	87.4	1200	9.727	383.9	24.4	62.1	86.5
1300	6.826	408.9	37.3	56.8	94.1	1300	9.766	407.1	25.9	66.2	92.1
1400	6.849	435.6	39.7	60.8	100.5	1400	9.797	429.6	27.3	70.2	97.5
1500	6.868	461.6	42.1	64.7	106.8	1500	9.822	451.2	28.7	74.0	102.7
1600	6.883	486.7	44.4	68.5	112.9	1600	9.843	472.2	30.0	77.6	107.6
1700	6.896	511.2	46.6	72.1	118.7	1700	9.860	492.5	31.3	81.1	112.5
1800	6.907	535.1	48.8	75.7	124.5	1800	9.875	512.3	32.6	84.6	117.2
1900	6.916	558.3	50.9	79.1	130.0	1900	9.888	531.7	33.8	87.9	121.7
2000	6.924	581.0	53.0	82.5	135.5	2000	9.898	550.6	35.0	91.2	126.2
2100	6.931	603.2	55.0	85.8	140.8	2100	9.908	569.2	36.2	94.4	130.6
2200	6.937	624.9	57.0	89.0	146.0	2200	9.916	587.5	37.4	97.5	134.9
2300	6.942	646.2	58.9	92.1	151.1	2300	9.923	605.4	38.5	100.6	139.1
2400	6.947	667.0	60.8	95.2	156.0	2400	9.929	623.0	39.6	103.6	143.2
2500	6.951	687.4	62.7	98.2	160.9	2500	9.935	640.2	40.7	106.5	147.3
2600	6.955	707.4	64.5	101.1	165.7	2600	9.939	657.2	41.8	109.4	151.2
2700	6.958	727.1	66.3	104.0	170.3	2700	9.944	673.9	42.9	112.3	155.1
2800	6.961	746.5	68.1	106.9	175.0	2800	9.948	690.3	43.9	115.1	159.0
2900	6.963	765.6	69.8	109.7	179.5	2900	9.951	706.5	44.9	117.8	162.8
3000	6.966	784.3	71.5	112.4	183.9	3000	9.954	722.4	45.9	120.5	166.5
3100	6.968	802.7	73.2	115.1	188.3	3100	9.957	738.1	46.9	123.2	170.1
3200	6.970	820.7	74.8	117.7	192.6	3200	9.960	753.5	47.9	125.8	173.7
3300	6.972	838.6	76.5	120.4	196.8	3300	9.962	768.8	48.9	128.4	177.3
3400	6.973	856.1	78.1	122.9	201.0	3400	9.964	783.8	49.8	131.0	180.8
3500	6.975	873.5	79.6	125.5	205.1	3500	9.966	798.6	50.8	133.5	184.2
3600	6.976	890.6	81.2	128.0	209.2	3600	9.968	813.2	51.7	135.9	187.7
3700	6.977	907.6	82.8	130.4	213.2	3700	9.970	827.7	52.6	138.4	191.0
3800	6.979	924.3	84.3	132.9	217.1	3800	9.971	842.0	53.5	140.8	194.4
3900	6.980	940.9	85.8	135.3	221.1	3900	9.973	856.1	54.4	143.2	197.6
4000	6.981	957.3	87.3	137.7	225.0	4000	9.974	870.1	55.3	145.6	200.9
4100	6.982	973.6	88.8	140.0	228.8	4100	9.975	884.0	56.2	147.9	204.1
4200	6.982	989.7	90.2	142.4	232.6	4200	9.977	897.7	57.1	150.2	207.3
4300	6.983	1005.6	91.7	144.7	236.4	4300	9.978	911.4	58.0	152.5	210.5
4400	6.984	1021.4	93.1	147.0	240.1	4400	9.979	924.9	58.8	154.8	213.7
4500	6.985	1037.0	94.6	149.3	243.8	4500	9.980	938.4	59.7	157.1	216.8
4600	6.985	1052.5	96.0	151.5	247.5	4600	9.980	951.8	60.5	159.4	219.9
4700	6.986	1067.9	97.4	153.8	251.1	4700	9.981	965.2	61.4	161.6	223.0
4800	6.987	1083.1	98.8	156.0	254.7	4800	9.982	978.5	62.2	163.9	226.1
4900	6.987	1098.2	100.1	158.2	258.3	4900	9.983	991.7	63.1	166.1	229.2
5000	6.988	1113.2	101.5	160.3	261.8	5000	9.983	1004.9	63.9	168.3	232.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

BF						BF_2					
M = 29.82, σ = 2.888, ϵ/k = 612						M = 48.82, σ = 3.543, ϵ/k = 399					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.501	----	----	---	----	100	4.035	50.1	7.7	4.1	11.8
200	3.506	91.7	22.9	8.1	31.0	200	4.373	93.2	14.2	9.4	23.6
300	3.561	132.9	33.2	12.4	45.6	300	4.741	140.0	21.4	16.9	38.2
400	3.678	176.8	44.2	18.3	62.5	400	5.100	187.5	28.6	26.2	54.8
500	3.815	222.0	55.5	25.7	81.1	500	5.431	233.5	35.6	36.8	72.4
600	3.941	267.0	66.7	33.8	100.6	600	5.714	277.6	42.4	47.9	90.3
700	4.046	311.1	77.7	42.3	120.1	700	5.942	319.2	48.7	59.0	107.8
800	4.132	354.3	88.5	50.9	139.4	800	6.123	358.5	54.7	69.8	124.5
900	4.200	396.1	99.0	59.2	158.2	900	6.266	395.6	60.4	80.1	140.5
1000	4.256	436.3	109.0	67.4	176.4	1000	6.380	431.0	65.8	89.9	155.7
1100	4.301	475.1	118.7	75.2	194.0	1100	6.471	464.9	71.0	99.2	170.1
1200	4.337	512.3	128.0	82.8	210.8	1200	6.544	497.3	75.9	108.1	184.0
1300	4.368	548.3	137.0	90.1	227.1	1300	6.603	528.6	80.7	116.5	197.2
1400	4.394	583.1	145.7	97.1	242.9	1400	6.652	558.7	85.3	124.7	209.9
1500	4.416	616.7	154.1	104.0	258.1	1500	6.693	587.8	89.7	132.4	222.2
1600	4.435	649.4	162.3	110.6	272.9	1600	6.727	616.1	94.0	139.9	234.0
1700	4.452	681.2	170.2	117.0	287.2	1700	6.756	643.6	98.2	147.2	245.4
1800	4.467	712.1	178.0	123.2	301.2	1800	6.781	670.2	102.3	154.2	256.5
1900	4.480	742.3	185.5	129.3	314.8	1900	6.802	696.1	106.3	160.9	267.2
2000	4.492	771.8	192.9	135.3	328.1	2000	6.820	721.4	110.1	167.5	277.6
2100	4.503	800.5	200.1	141.1	341.1	2100	6.836	746.1	113.9	173.8	287.7
2200	4.513	828.6	207.1	146.7	353.8	2200	6.850	770.4	117.6	180.1	297.7
2300	4.522	856.1	214.0	152.3	366.3	2300	6.862	794.2	121.2	186.2	307.4
2400	4.531	883.1	220.7	157.8	378.4	2400	6.873	817.6	124.8	192.1	316.9
2500	4.539	909.6	227.3	163.1	390.5	2500	6.883	840.6	128.3	198.0	326.3
2600	4.546	935.6	233.8	168.4	402.3	2600	6.891	863.2	131.8	203.7	335.5
2700	4.554	961.1	240.2	173.6	413.8	2700	6.899	885.5	135.2	209.3	344.5
2800	4.560	986.1	246.4	178.7	425.2	2800	6.906	907.5	138.5	214.8	353.4
2900	4.567	1010.6	252.6	183.8	436.3	2900	6.912	929.1	141.8	220.3	362.1
3000	4.573	1034.8	258.6	188.7	447.3	3000	6.918	950.4	145.1	225.6	370.7
3100	4.579	1058.6	264.5	193.6	458.1	3100	6.923	971.4	148.3	230.9	379.1
3200	4.585	1082.0	270.4	198.4	468.9	3200	6.928	992.1	151.4	236.0	387.5
3300	4.590	1105.2	276.2	203.2	479.4	3300	6.932	1012.5	154.6	241.1	395.7
3400	4.596	1128.1	281.9	208.0	489.9	3400	6.936	1032.7	157.6	246.1	403.8
3500	4.601	1150.7	287.6	212.7	500.3	3500	6.939	1052.6	160.7	251.1	411.7
3600	4.606	1173.0	293.1	217.4	510.5	3600	6.943	1072.2	163.7	255.9	419.6
3700	4.611	1195.1	298.7	222.0	520.7	3700	6.946	1091.5	166.6	260.7	427.4
3800	4.616	1217.0	304.1	226.6	530.7	3800	6.948	1110.7	169.5	265.5	435.0
3900	4.621	1238.7	309.5	231.1	540.7	3900	6.951	1129.6	172.4	270.1	442.6
4000	4.626	1260.1	314.9	235.7	550.6	4000	6.953	1148.3	175.3	274.8	450.0
4100	4.631	1281.3	320.2	240.1	560.3	4100	6.956	1166.7	178.1	279.3	457.4
4200	4.635	1302.3	325.4	244.6	570.0	4200	6.958	1185.0	180.9	283.8	464.7
4300	4.640	1323.0	330.6	249.0	579.7	4300	6.960	1203.1	183.6	288.3	471.9
4400	4.644	1343.6	335.8	253.4	589.2	4400	6.961	1221.0	186.4	292.7	479.1
4500	4.649	1364.0	340.9	257.8	598.7	4500	6.963	1238.7	189.1	297.1	486.1
4600	4.653	1384.2	345.9	262.2	608.1	4600	6.965	1256.3	191.8	301.4	493.2
4700	4.657	1404.2	350.9	266.5	617.4	4700	6.966	1273.8	194.4	305.7	500.1
4800	4.662	1424.0	355.9	270.8	626.7	4800	6.967	1291.1	197.1	309.9	507.0
4900	4.666	1443.7	360.8	275.1	635.9	4900	6.969	1308.2	199.7	314.1	513.8
5000	4.670	1463.1	365.6	279.3	645.0	5000	6.970	1325.3	202.3	318.3	520.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

BF_3						BO					
$M = 67.82$, $\sigma = 4.198$, $\epsilon/k = 186.3$						$M = 26.82$, $\sigma = 2.944$, $\epsilon/k = 596$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	4.100	57.2	6.3	3.5	9.8	100	3.501	----	----	---	----
200	5.047	115.1	12.6	11.3	24.0	200	3.501	84.5	23.5	8.3	31.8
300	6.084	169.6	18.6	23.5	42.1	300	3.512	122.8	34.1	12.2	46.3
400	6.920	217.9	23.9	37.2	61.2	400	3.557	163.6	45.5	16.9	62.4
500	7.570	261.1	28.7	51.2	79.9	500	3.638	205.4	57.1	22.9	79.9
600	8.066	300.6	33.0	64.7	97.7	600	3.738	247.0	68.6	29.9	98.5
700	8.442	337.1	37.0	77.5	114.5	700	3.838	287.6	79.9	37.6	117.5
800	8.728	371.3	40.8	89.4	130.2	800	3.930	327.3	90.9	45.8	136.7
900	8.947	403.4	44.3	100.6	144.9	900	4.011	365.6	101.6	54.0	155.6
1000	9.117	433.9	47.7	111.0	158.7	1000	4.080	402.5	111.8	62.2	174.0
1100	9.250	463.1	50.9	120.9	171.8	1100	4.139	437.9	121.7	70.2	191.9
1200	9.357	491.3	54.0	130.3	184.3	1200	4.189	472.0	131.1	78.0	209.1
1300	9.443	518.6	57.0	139.3	196.3	1300	4.231	504.9	140.3	85.5	225.8
1400	9.513	545.0	59.9	147.8	207.7	1400	4.268	536.6	149.1	92.8	241.9
1500	9.572	570.6	62.7	156.1	218.8	1500	4.299	567.4	157.7	99.8	257.5
1600	9.620	595.5	65.4	164.0	229.4	1600	4.325	597.3	166.0	106.6	272.6
1700	9.661	619.6	68.1	171.6	239.7	1700	4.349	626.3	174.0	113.2	287.3
1800	9.696	643.1	70.7	179.0	249.7	1800	4.369	654.6	181.9	119.7	301.6
1900	9.726	666.1	73.2	186.1	259.3	1900	4.387	682.2	189.5	125.9	315.4
2000	9.751	688.5	75.6	193.1	268.7	2000	4.403	709.0	197.0	132.0	329.0
2100	9.773	710.4	78.1	199.8	277.9	2100	4.417	735.3	204.3	137.9	342.2
2200	9.793	731.9	80.4	206.4	286.9	2200	4.430	761.0	211.4	143.7	355.1
2300	9.810	753.0	82.7	212.9	295.7	2300	4.442	786.1	218.4	149.3	367.7
2400	9.825	773.9	85.0	219.3	304.3	2400	4.452	810.7	225.3	154.8	380.1
2500	9.838	794.5	87.3	225.5	312.8	2500	4.462	835.0	232.0	160.2	392.2
2600	9.850	814.9	89.5	231.7	321.2	2600	4.471	858.7	238.6	165.5	404.1
2700	9.861	835.2	91.8	237.8	329.5	2700	4.479	881.9	245.1	170.7	415.8
2800	9.870	855.4	94.0	243.8	337.8	2800	4.487	904.7	251.4	175.8	427.2
2900	9.879	875.5	96.2	249.9	346.1	2900	4.494	927.1	257.6	180.8	438.4
3000	9.887	895.6	98.4	255.9	354.3	3000	4.500	949.2	263.7	185.7	449.5
3100	9.894	915.0	100.5	261.7	362.2	3100	4.507	971.0	269.8	190.6	460.4
3200	9.900	934.2	102.7	267.4	370.1	3200	4.512	992.4	275.8	195.3	471.1
3300	9.906	953.2	104.7	273.1	377.8	3300	4.518	1013.6	281.6	200.1	481.7
3400	9.911	972.0	106.8	278.6	385.4	3400	4.523	1034.6	287.5	204.7	492.2
3500	9.916	990.5	108.8	284.1	393.0	3500	4.528	1055.3	293.2	209.4	502.6
3600	9.921	1008.9	110.9	289.6	400.4	3600	4.533	1075.7	298.9	213.9	512.8
3700	9.925	1027.0	112.9	295.0	407.8	3700	4.538	1095.9	304.5	218.4	523.0
3800	9.929	1045.0	114.8	300.3	415.1	3800	4.542	1115.9	310.1	222.9	533.0
3900	9.932	1062.8	116.8	305.5	422.3	3900	4.547	1135.7	315.6	227.3	542.9
4000	9.936	1080.5	118.7	310.7	429.5	4000	4.551	1155.3	321.0	231.7	552.8
4100	9.939	1097.9	120.6	315.9	436.5	4100	4.555	1174.7	326.4	236.1	562.5
4200	9.942	1115.2	122.5	321.0	443.5	4200	4.559	1193.9	331.7	240.4	572.1
4300	9.944	1132.4	124.4	326.1	450.5	4300	4.562	1212.9	337.0	244.7	581.7
4400	9.947	1149.4	126.3	331.1	457.4	4400	4.566	1231.8	342.3	248.9	591.2
4500	9.949	1166.3	128.2	336.0	464.2	4500	4.570	1250.4	347.4	253.1	600.5
4600	9.951	1183.0	130.0	340.9	470.9	4600	4.573	1268.9	352.6	257.3	609.8
4700	9.953	1199.6	131.8	345.8	477.6	4700	4.576	1287.2	357.6	261.4	619.1
4800	9.955	1216.1	133.6	350.7	484.3	4800	4.580	1305.3	362.7	265.5	628.2
4900	9.957	1232.4	135.4	355.5	490.9	4900	4.583	1323.2	367.7	269.6	637.2
5000	9.959	1248.6	137.2	360.2	497.4	5000	4.586	1341.0	372.6	273.6	646.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

B_2						B_2H_6					
$M = 21.64$, $\sigma = 2.420$, $\epsilon/k = 3331$						$M = 27.69$, $\sigma = 4.821$, $\epsilon/k = 213.2$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.501	-----	----	----	----	100	4.144	26.0	7.0	4.0	11.0
200	3.534	-----	----	----	----	200	5.025	52.1	14.0	12.5	26.5
300	3.677	-----	----	----	----	300	6.731	77.6	20.9	31.1	52.0
400	3.858	-----	----	----	----	400	8.659	100.7	27.1	58.7	85.8
500	4.013	-----	----	----	----	500	10.439	121.5	32.7	91.3	124.0
600	4.132	-----	----	----	----	600	12.003	140.5	37.8	126.5	164.3
700	4.221	178.5	61.5	37.2	98.7	700	13.354	158.1	42.5	162.5	205.1
800	4.288	199.4	68.7	43.2	111.9	800	14.509	174.5	47.0	198.6	245.5
900	4.339	220.3	75.9	49.1	125.0	900	15.490	190.1	51.2	233.9	285.1
1000	4.380	241.2	83.0	54.9	138.0	1000	16.319	204.8	55.1	268.1	323.2
1100	4.412	261.9	90.2	60.7	150.9	1100	17.020	218.8	58.9	301.0	359.9
1200	4.439	282.8	97.4	66.5	163.8	1200	17.612	232.3	62.5	332.6	395.1
1300	4.461	303.9	104.6	72.2	176.9	1300	18.115	245.4	66.0	362.9	429.0
1400	4.480	325.2	112.0	78.1	190.0	1400	18.542	258.0	69.4	392.1	461.5
1500	4.497	346.8	119.4	83.9	203.4	1500	18.908	270.3	72.7	420.1	492.9
1600	4.511	368.8	127.0	89.9	216.9	1600	19.222	282.2	76.0	447.1	523.0
1700	4.524	391.1	134.7	96.0	230.6	1700	19.493	293.9	79.1	473.0	552.1
1800	4.536	413.6	142.4	102.1	244.5	1800	19.728	305.2	82.1	498.1	580.2
1900	4.547	436.4	150.3	108.3	258.6	1900	19.933	316.2	85.1	522.2	607.3
2000	4.557	459.4	158.2	114.6	272.8	2000	20.112	327.0	88.0	545.6	633.6
2100	4.567	482.5	166.2	120.9	287.1	2100	20.270	337.5	90.8	568.2	659.1
2200	4.576	505.8	174.2	127.3	301.5	2200	20.410	347.8	93.6	590.2	683.8
2300	4.584	529.2	182.2	133.7	316.0	2300	20.534	358.0	96.3	611.5	707.9
2400	4.592	552.7	190.3	140.2	330.5	2400	20.644	367.9	99.0	632.3	731.3
2500	4.600	576.2	198.4	146.7	345.1	2500	20.742	377.6	101.6	652.6	754.2
2600	4.608	599.7	206.5	153.2	359.7	2600	20.831	387.2	104.2	672.5	776.7
2700	4.615	623.2	214.6	159.8	374.4	2700	20.910	396.7	106.8	691.9	798.7
2800	4.622	646.7	222.7	166.3	389.1	2800	20.982	406.1	109.3	711.0	820.3
2900	4.629	670.2	230.8	172.9	403.7	2900	21.048	415.4	111.8	729.9	841.7
3000	4.636	693.6	238.9	179.6	418.4	3000	21.107	424.6	114.3	748.5	862.7
3100	4.642	717.1	246.9	186.2	433.1	3100	21.161	433.8	116.7	766.9	883.6
3200	4.649	740.5	255.0	192.9	447.9	3200	21.210	442.9	119.2	785.1	904.3
3300	4.655	763.9	263.1	199.5	462.6	3300	21.255	452.1	121.7	803.2	924.9
3400	4.661	786.9	271.0	206.1	477.1	3400	21.297	461.2	124.1	821.3	945.4
3500	4.667	809.8	278.9	212.7	491.6	3500	21.335	470.1	126.5	838.8	965.3
3600	4.673	832.6	286.7	219.4	506.1	3600	21.370	478.8	128.9	856.0	984.8
3700	4.679	855.5	294.6	226.0	520.6	3700	21.402	487.5	131.2	872.9	1004.1
3800	4.685	878.3	302.4	232.7	535.1	3800	21.432	496.1	133.5	889.7	1023.2
3900	4.691	901.0	310.3	239.3	549.6	3900	21.460	504.5	135.8	906.2	1042.0
4000	4.697	923.6	318.1	246.0	564.0	4000	21.486	512.9	138.0	922.6	1060.6
4100	4.703	946.1	325.8	252.6	578.4	4100	21.510	521.3	140.3	938.7	1079.0
4200	4.709	968.5	333.5	259.3	592.8	4200	21.532	529.5	142.5	954.7	1097.2
4300	4.714	990.7	341.2	265.9	607.1	4300	21.553	537.7	144.7	970.5	1115.2
4400	4.720	1012.9	348.8	272.6	621.4	4400	21.573	545.8	146.9	986.2	1133.0
4500	4.726	1034.9	356.4	279.2	635.6	4500	21.591	553.8	149.0	1001.6	1150.7
4600	4.731	1056.7	363.9	285.8	649.7	4600	21.608	561.8	151.2	1016.9	1168.1
4700	4.737	1078.4	371.4	292.4	663.8	4700	21.625	569.7	153.3	1032.1	1185.4
4800	4.743	1100.0	378.8	299.0	677.8	4800	21.640	577.5	155.4	1047.2	1202.6
4900	4.748	1121.4	386.2	305.6	691.8	4900	21.654	585.3	157.5	1062.0	1219.6
5000	4.754	1142.7	393.5	312.2	705.7	5000	21.667	593.0	159.6	1076.8	1236.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

B_2O_3						Be					
$M = 58.82$, $\sigma = 4.158$, $\epsilon/k = 2092$						$M = 9.013$, $\sigma = 2.618$, $\epsilon/k = 3603$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.241	----	----	----	----	100	2.500	----	----	---	----
200	5.118	----	----	----	----	200	2.500	----	----	---	----
300	6.363	----	----	----	----	300	2.500	----	----	---	----
400	7.538	----	----	----	----	400	2.500	----	----	---	----
500	8.507	87.9	11.1	23.5	34.7	500	2.500	----	----	---	----
600	9.285	102.6	13.0	31.1	44.1	600	2.500	----	----	---	----
700	9.908	117.3	14.9	38.7	53.6	700	2.500	96.2	79.5	0.0	79.5
800	10.405	132.0	16.7	46.5	63.3	800	2.500	107.1	88.5	0.0	88.5
900	10.804	147.1	18.6	54.5	73.1	900	2.500	118.2	97.7	0.0	97.7
1000	11.125	162.5	20.6	62.5	83.1	1000	2.500	129.3	106.9	0.0	106.9
1100	11.386	178.2	22.6	70.6	93.2	1100	2.500	140.3	116.0	0.0	116.0
1200	11.599	194.2	24.6	78.8	103.4	1200	2.500	151.3	125.1	0.0	125.1
1300	11.775	210.5	26.7	87.1	113.7	1300	2.500	162.4	134.3	0.0	134.3
1400	11.921	226.9	28.7	95.3	124.1	1400	2.500	173.6	143.5	0.0	143.5
1500	12.043	243.4	30.8	103.6	134.4	1500	2.500	184.9	152.9	0.0	152.9
1600	12.147	260.0	32.9	111.8	144.8	1600	2.500	196.3	162.3	0.0	162.3
1700	12.235	276.5	35.0	120.1	155.1	1700	2.500	207.9	171.9	0.0	171.9
1800	12.311	293.1	37.1	128.2	165.4	1800	2.500	219.7	181.6	0.0	181.6
1900	12.376	309.6	39.2	136.4	175.6	1900	2.500	231.6	191.5	0.0	191.5
2000	12.432	326.1	41.3	144.5	185.8	2000	2.500	243.6	201.4	0.0	201.4
2100	12.482	342.6	43.4	152.5	195.9	2100	2.501	255.7	211.4	0.0	211.5
2200	12.525	358.7	45.4	160.4	205.8	2200	2.501	268.0	221.6	0.1	221.6
2300	12.563	374.8	47.5	168.2	215.7	2300	2.502	280.3	231.7	0.1	231.9
2400	12.597	390.9	49.5	176.0	225.5	2400	2.503	292.6	241.9	0.3	242.2
2500	12.627	406.8	51.5	183.7	235.3	2500	2.505	305.0	252.2	0.4	252.6
2600	12.654	422.7	53.6	191.4	245.0	2600	2.507	317.5	262.5	0.6	263.1
2700	12.678	438.4	55.5	199.0	254.5	2700	2.510	329.9	272.8	1.0	273.8
2800	12.700	454.0	57.5	206.5	264.0	2800	2.514	342.4	283.1	1.4	284.5
2900	12.720	469.4	59.5	213.9	273.4	2900	2.520	354.9	293.4	2.0	295.4
3000	12.737	484.6	61.4	221.3	282.7	3000	2.526	367.3	303.7	2.8	306.5
3100	12.754	499.7	63.3	228.5	291.8	3100	2.535	379.8	314.0	3.8	317.9
3200	12.768	514.6	65.2	235.7	300.9	3200	2.545	392.2	324.3	5.1	329.4
3300	12.782	529.4	67.1	242.7	309.8	3300	2.557	404.7	334.6	6.7	341.3
3400	12.794	543.9	68.9	249.7	318.6	3400	2.571	417.1	344.8	8.6	353.5
3500	12.805	558.4	70.7	256.6	327.4	3500	2.587	429.5	355.1	10.9	366.0
3600	12.816	572.6	72.5	263.4	336.0	3600	2.606	441.9	365.4	13.6	379.0
3700	12.825	586.7	74.3	270.2	344.5	3700	2.627	454.0	375.4	16.8	392.2
3800	12.834	600.6	76.1	276.8	352.9	3800	2.651	466.1	385.4	20.5	405.9
3900	12.843	614.4	77.8	283.4	361.2	3900	2.677	478.3	395.4	24.7	420.1
4000	12.850	628.1	79.6	289.9	369.5	4000	2.706	490.4	405.5	29.4	434.9
4100	12.857	641.5	81.3	296.3	377.6	4100	2.738	502.4	415.4	34.7	450.2
4200	12.864	654.9	83.0	302.7	385.7	4200	2.772	514.5	425.4	40.7	466.1
4300	12.870	668.1	84.6	309.0	393.6	4300	2.808	526.5	435.3	47.2	482.6
4400	12.876	681.2	86.3	315.2	401.5	4400	2.847	538.4	445.2	54.4	499.6
4500	12.881	694.1	87.9	321.3	409.3	4500	2.889	550.3	455.0	62.3	517.3
4600	12.886	706.9	89.6	327.4	417.0	4600	2.933	562.2	464.8	70.8	535.6
4700	12.891	719.6	91.2	333.5	424.6	4700	2.978	573.9	474.6	79.9	554.5
4800	12.895	732.2	92.8	339.4	432.2	4800	3.026	585.7	484.2	89.7	573.9
4900	12.900	744.7	94.3	345.4	439.7	4900	3.076	597.3	493.9	100.1	594.0
5000	12.903	757.0	95.9	351.2	447.1	5000	3.127	608.9	503.4	111.2	614.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

BeCl						$BeCl_2$					
$M = 44.47$, $\sigma = 3.554$, $\epsilon/k = 1067$						$M = 79.93$, $\sigma = 4.169$, $\epsilon/k = 936$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.502	----	----	---	----	100	3.727	----	---	---	----
200	3.593	----	----	---	----	200	4.884	62.1	5.8	4.9	10.6
300	3.811	85.8	14.4	6.6	21.0	300	5.712	87.6	8.2	9.2	17.4
400	4.008	110.2	18.5	9.8	28.3	400	6.231	113.4	10.6	13.9	24.5
500	4.150	135.5	22.7	13.2	35.9	500	6.569	140.4	13.1	18.7	31.8
600	4.247	161.8	27.1	16.7	43.8	600	6.797	168.5	15.7	23.8	39.5
700	4.316	189.0	31.7	20.2	51.9	700	6.954	197.1	18.4	28.8	47.2
800	4.366	216.5	36.3	23.8	60.1	800	7.066	225.8	21.1	33.8	54.9
900	4.404	244.1	40.9	27.4	68.3	900	7.148	254.4	23.7	38.8	62.5
1000	4.433	271.7	45.5	31.0	76.5	1000	7.209	282.6	26.3	43.7	70.0
1100	4.457	298.9	50.1	34.5	84.6	1100	7.256	310.4	28.9	48.5	77.4
1200	4.476	325.8	54.6	38.0	92.6	1200	7.293	337.8	31.5	53.1	84.6
1300	4.492	352.4	59.1	41.4	100.5	1300	7.322	364.7	34.0	57.7	91.7
1400	4.506	378.6	63.4	44.8	108.2	1400	7.345	391.0	36.5	62.2	98.6
1500	4.519	404.3	67.7	48.1	115.9	1500	7.364	416.6	38.8	66.5	105.3
1600	4.530	429.4	72.0	51.4	123.4	1600	7.380	441.5	41.2	70.7	111.9
1700	4.539	454.1	76.1	54.6	130.7	1700	7.393	465.8	43.4	74.8	118.2
1800	4.549	478.1	80.1	57.8	137.9	1800	7.405	489.6	45.6	78.8	124.4
1900	4.557	501.7	84.1	60.9	144.9	1900	7.414	512.7	47.8	82.7	130.5
2000	4.565	524.7	87.9	63.9	151.8	2000	7.422	535.4	49.9	86.5	136.4
2100	4.573	547.3	91.7	66.9	158.6	2100	7.429	557.5	52.0	90.2	142.2
2200	4.580	569.4	95.4	69.8	165.3	2200	7.436	579.2	54.0	93.8	147.8
2300	4.587	591.0	99.0	72.7	171.8	2300	7.441	600.5	56.0	97.4	153.4
2400	4.593	612.3	102.6	75.6	178.2	2400	7.446	621.3	57.9	100.8	158.8
2500	4.600	633.1	106.1	78.4	184.5	2500	7.450	641.8	59.8	104.3	164.1
2600	4.606	653.6	109.5	81.2	190.7	2600	7.454	661.9	61.7	107.6	169.3
2700	4.612	673.7	112.9	83.9	196.8	2700	7.457	681.6	63.5	110.9	174.4
2800	4.618	693.5	116.2	86.6	202.9	2800	7.460	701.0	65.4	114.1	179.5
2900	4.624	713.0	119.5	89.3	208.8	2900	7.463	720.1	67.1	117.3	184.4
3000	4.630	732.2	122.7	92.0	214.7	3000	7.465	738.9	68.9	120.4	189.3
3100	4.636	751.1	125.9	94.6	220.5	3100	7.467	757.4	70.6	123.5	194.1
3200	4.642	769.7	129.0	97.2	226.2	3200	7.469	775.7	72.3	126.5	198.8
3300	4.648	788.1	132.1	99.8	231.9	3300	7.471	793.6	74.0	129.5	203.5
3400	4.653	806.2	135.1	102.4	237.5	3400	7.473	811.3	75.6	132.4	208.1
3500	4.660	824.1	138.1	105.0	243.1	3500	7.474	828.8	77.3	135.3	212.6
3600	4.666	841.7	141.0	107.5	248.6	3600	7.476	846.0	78.9	138.1	217.0
3700	4.672	859.1	144.0	110.1	254.0	3700	7.477	863.0	80.5	141.0	221.4
3800	4.678	876.2	146.8	112.6	259.4	3800	7.478	879.8	82.0	143.7	225.8
3900	4.685	893.2	149.7	115.1	264.8	3900	7.479	896.5	83.6	146.5	230.1
4000	4.692	909.9	152.5	117.6	270.1	4000	7.480	912.9	85.1	149.2	234.3
4100	4.699	926.5	155.3	120.2	275.4	4100	7.481	929.1	86.6	151.9	238.5
4200	4.706	942.8	158.0	122.7	280.7	4200	7.482	945.1	88.1	154.5	242.6
4300	4.714	959.0	160.7	125.2	286.0	4300	7.483	960.9	89.6	157.1	246.7
4400	4.722	975.1	163.4	127.8	291.2	4400	7.484	976.5	91.0	159.7	250.7
4500	4.730	991.0	166.1	130.4	296.4	4500	7.484	991.9	92.5	162.3	254.7
4600	4.739	1006.7	168.7	132.9	301.6	4600	7.485	1007.2	93.9	164.8	258.7
4700	4.748	1022.2	171.3	135.5	306.8	4700	7.486	1022.3	95.3	167.3	262.6
4800	4.757	1037.5	173.9	138.1	312.0	4800	7.486	1037.3	96.7	169.7	266.5
4900	4.767	1052.7	176.4	140.7	317.1	4900	7.487	1052.2	98.1	172.2	270.3
5000	4.777	1067.7	178.9	143.4	322.3	5000	7.487	1066.9	99.5	174.6	274.1

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

BeF						BeF_2					
$M = 28.01$, $\sigma = 3.124$, $\epsilon/k = 637$						$M = 47.01$, $\sigma = 3.452$, $\epsilon/k = 1266$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.501	----	----	---	----	100	3.506	----	----	----	----
200	3.512	74.8	19.9	7.1	27.0	200	3.856	----	----	----	----
300	3.595	108.0	28.7	11.1	39.8	300	4.580	88.0	14.0	10.2	24.2
400	3.739	143.5	38.2	16.7	54.8	400	5.239	112.6	17.8	17.2	35.0
500	3.888	180.1	47.9	23.4	71.3	500	5.744	137.2	21.7	24.8	46.6
600	4.014	216.7	57.7	30.7	88.4	600	6.119	162.6	25.8	32.8	58.6
700	4.115	252.7	67.2	38.2	105.5	700	6.396	188.9	30.0	41.1	71.0
800	4.194	288.0	76.6	45.7	122.3	800	6.603	216.0	34.2	49.5	83.7
900	4.256	322.4	85.8	53.0	138.8	900	6.761	243.5	38.6	57.9	96.5
1000	4.305	355.5	94.6	60.1	154.7	1000	6.882	271.1	43.0	66.3	109.2
1100	4.344	387.5	103.1	66.9	170.0	1100	6.976	298.7	47.3	74.6	122.0
1200	4.377	418.3	111.3	73.5	184.8	1200	7.052	326.2	51.7	82.9	134.6
1300	4.403	448.0	119.2	79.9	199.0	1300	7.112	353.5	56.0	91.0	147.0
1400	4.426	476.7	126.8	86.0	212.8	1400	7.162	380.4	60.3	98.9	159.2
1500	4.446	504.5	134.2	91.9	226.2	1500	7.202	407.1	64.5	106.8	171.3
1600	4.462	531.5	141.4	97.7	239.1	1600	7.236	433.5	68.7	114.6	183.3
1700	4.477	557.8	148.4	103.3	251.7	1700	7.265	459.5	72.8	122.2	195.0
1800	4.490	583.4	155.2	108.7	264.0	1800	7.289	485.1	76.9	129.6	206.5
1900	4.502	608.3	161.8	114.1	275.9	1900	7.310	510.2	80.9	136.9	217.8
2000	4.513	632.7	168.3	119.3	287.6	2000	7.327	534.9	84.8	144.1	228.9
2100	4.523	656.5	174.7	124.4	299.0	2100	7.343	559.1	88.6	151.1	239.7
2200	4.532	679.7	180.8	129.4	310.2	2200	7.356	582.8	92.4	157.9	250.3
2300	4.541	702.5	186.9	134.3	321.2	2300	7.368	606.1	96.1	164.7	260.7
2400	4.549	724.8	192.8	139.1	331.9	2400	7.379	629.0	99.7	171.2	271.0
2500	4.556	746.6	198.6	143.8	342.4	2500	7.388	651.5	103.3	177.7	281.0
2600	4.563	768.2	204.4	148.4	352.8	2600	7.396	673.6	106.8	184.0	290.8
2700	4.570	789.3	210.0	153.0	363.0	2700	7.404	695.4	110.2	190.3	300.5
2800	4.576	810.0	215.5	157.5	373.0	2800	7.410	716.7	113.6	196.4	310.0
2900	4.583	830.4	220.9	162.0	382.9	2900	7.416	737.8	117.0	202.4	319.4
3000	4.589	850.3	226.2	166.3	392.6	3000	7.422	758.5	120.2	208.3	328.6
3100	4.595	870.0	231.5	170.7	402.1	3100	7.427	778.9	123.5	214.1	337.6
3200	4.600	889.4	236.6	174.9	411.6	3200	7.431	799.1	126.7	219.9	346.5
3300	4.606	908.5	241.7	179.2	420.9	3300	7.435	818.9	129.8	225.5	355.3
3400	4.611	927.4	246.7	183.4	430.1	3400	7.439	838.5	132.9	231.1	364.0
3500	4.617	946.1	251.7	187.6	439.3	3500	7.442	857.8	136.0	236.6	372.6
3600	4.622	964.5	256.6	191.7	448.3	3600	7.445	876.9	139.0	242.0	381.0
3700	4.628	982.7	261.5	195.8	457.3	3700	7.448	895.7	142.0	247.3	389.3
3800	4.633	1000.8	266.3	199.9	466.2	3800	7.451	914.3	144.9	252.6	397.5
3900	4.638	1018.6	271.0	204.0	475.0	3900	7.453	932.7	147.9	257.8	405.7
4000	4.643	1036.3	275.7	208.0	483.7	4000	7.456	950.9	150.7	262.9	413.7
4100	4.649	1053.8	280.4	212.1	492.4	4100	7.458	968.8	153.6	268.0	421.6
4200	4.654	1071.1	285.0	216.1	501.1	4200	7.460	986.6	156.4	273.0	429.4
4300	4.660	1088.3	289.5	220.1	509.6	4300	7.462	1004.2	159.2	278.0	437.2
4400	4.665	1105.3	294.1	224.1	518.2	4400	7.463	1021.5	161.9	282.9	444.8
4500	4.671	1122.1	298.5	228.1	526.7	4500	7.465	1038.7	164.7	287.8	452.4
4600	4.677	1138.8	303.0	232.1	535.1	4600	7.466	1055.7	167.4	292.6	459.9
4700	4.683	1155.3	307.4	236.2	543.5	4700	7.468	1072.5	170.0	297.3	467.3
4800	4.689	1171.7	311.7	240.2	551.9	4800	7.469	1089.1	172.7	302.0	474.6
4900	4.695	1187.9	316.0	244.2	560.3	4900	7.470	1105.6	175.3	306.6	481.9
5000	4.702	1204.0	320.3	248.3	568.6	5000	7.471	1121.9	177.8	311.2	489.1

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Br						BrF					
$M=79.916$, $\sigma=3.672$, $\epsilon/k=236.6$						$M=98.92$, $\sigma=3.826$, $\epsilon/k=239$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	2.500	72.7	6.8	0.0	6.8	100	3.507	74.2	5.6	2.0	7.6
200	2.500	144.7	13.5	0.0	13.5	200	3.700	147.5	11.1	4.7	15.8
300	2.500	216.6	20.2	0.0	20.2	300	3.968	220.9	16.6	8.6	25.2
400	2.500	283.3	26.4	0.0	26.4	400	4.154	289.2	21.8	12.7	34.5
500	2.501	343.7	32.1	0.0	32.1	500	4.272	351.1	26.4	16.5	42.9
600	2.506	399.1	37.2	0.1	37.3	600	4.348	407.7	30.7	20.0	50.7
700	2.515	450.4	42.0	0.2	42.2	700	4.401	460.3	34.7	23.2	57.9
800	2.529	498.5	46.5	0.5	47.0	800	4.439	509.6	38.4	26.2	64.6
900	2.548	543.8	50.7	0.9	51.6	900	4.468	556.0	41.9	29.0	70.9
1000	2.570	586.9	54.7	1.3	56.1	1000	4.491	600.2	45.2	31.7	76.9
1100	2.593	627.9	58.6	1.9	60.5	1100	4.510	642.2	48.4	34.2	82.6
1200	2.616	667.1	62.2	2.5	64.8	1200	4.526	682.3	51.4	36.7	88.1
1300	2.638	704.9	65.7	3.2	68.9	1300	4.540	721.0	54.3	39.0	93.3
1400	2.659	741.6	69.2	3.9	73.0	1400	4.552	758.6	57.1	41.3	98.4
1500	2.677	777.2	72.5	4.5	77.0	1500	4.564	795.0	59.9	43.5	103.4
1600	2.693	811.8	75.7	5.1	80.8	1600	4.574	830.5	62.6	45.7	108.3
1700	2.706	845.6	78.9	5.7	84.6	1700	4.584	865.1	65.2	47.8	113.0
1800	2.717	878.6	81.9	6.2	88.2	1800	4.594	898.9	67.7	49.9	117.6
1900	2.725	910.8	84.9	6.7	91.7	1900	4.603	931.8	70.2	52.0	122.2
2000	2.731	942.2	87.9	7.2	95.0	2000	4.611	964.0	72.6	54.0	126.6
2100	2.736	972.9	90.7	7.5	98.3	2100	4.620	995.5	75.0	56.0	130.9
2200	2.739	1003.0	93.5	7.9	101.4	2200	4.628	1026.3	77.3	57.9	135.2
2300	2.740	1032.4	96.3	8.1	104.4	2300	4.635	1056.4	79.6	59.8	139.4
2400	2.741	1061.3	99.0	8.4	107.4	2400	4.643	1086.0	81.8	61.7	143.5
2500	2.740	1089.6	101.6	8.6	110.2	2500	4.651	1115.0	84.0	63.6	147.6
2600	2.739	1117.4	104.2	8.7	112.9	2600	4.658	1143.5	86.1	65.4	151.6
2700	2.736	1144.8	106.8	8.9	115.6	2700	4.666	1171.5	88.3	67.3	155.5
2800	2.733	1171.8	109.3	9.0	118.3	2800	4.673	1199.2	90.3	69.1	159.4
2900	2.730	1198.5	111.8	9.1	120.8	2900	4.680	1226.4	92.4	70.9	163.3
3000	2.726	1224.8	114.2	9.1	123.3	3000	4.687	1253.4	94.4	72.7	167.1
3100	2.722	1250.9	116.6	9.1	125.8	3100	4.694	1280.0	96.4	74.5	170.9
3200	2.718	1276.7	119.1	9.1	128.2	3200	4.701	1306.5	98.4	76.3	174.7
3300	2.714	1302.4	121.4	9.1	130.6	3300	4.708	1332.7	100.4	78.0	178.4
3400	2.709	1327.9	123.8	9.1	133.0	3400	4.715	1358.8	102.4	79.8	182.2
3500	2.705	1353.4	126.2	9.1	135.3	3500	4.722	1384.8	104.3	81.6	185.9
3600	2.700	1378.8	128.6	9.1	137.6	3600	4.729	1410.7	106.3	83.4	189.7
3700	2.696	1404.2	130.9	9.0	140.0	3700	4.736	1436.6	108.2	85.2	193.4
3800	2.691	1429.5	133.3	9.0	142.3	3800	4.743	1462.5	110.2	87.0	197.1
3900	2.686	1454.0	135.6	8.9	144.5	3900	4.749	1487.7	112.1	88.7	200.8
4000	2.682	1478.3	137.9	8.8	146.7	4000	4.756	1512.6	114.0	90.5	204.5
4100	2.677	1502.4	140.1	8.7	148.8	4100	4.763	1537.3	115.8	92.2	208.1
4200	2.673	1526.2	142.3	8.7	151.0	4200	4.770	1561.7	117.6	94.0	211.6
4300	2.669	1549.9	144.5	8.6	153.1	4300	4.776	1585.9	119.5	95.7	215.2
4400	2.665	1573.3	146.7	8.5	155.2	4400	4.783	1609.8	121.3	97.5	218.7
4500	2.660	1596.5	148.9	8.4	157.3	4500	4.790	1633.6	123.1	99.2	222.3
4600	2.656	1619.5	151.0	8.3	159.3	4600	4.796	1657.2	124.8	100.9	225.8
4700	2.653	1642.4	153.2	8.2	161.4	4700	4.803	1680.5	126.6	102.6	229.2
4800	2.649	1665.0	155.3	8.1	163.4	4800	4.810	1703.7	128.4	104.4	232.7
4900	2.645	1687.5	157.4	8.0	165.4	4900	4.816	1726.7	130.1	106.1	236.2
5000	2.641	1709.8	159.4	7.9	167.4	5000	4.823	1749.6	131.8	107.8	239.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Br_2						C					
$M = 159.83$, $\sigma = 4.296$, $\epsilon/k = 507.9$						$M = 12.011$, $\sigma = 3.385$, $\epsilon/k = 30.6$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.716	57.1	2.7	1.1	3.8	100	2.559	79.7	49.5	1.0	50.5
200	4.161	103.2	4.8	2.8	7.6	200	2.514	130.2	80.8	0.4	81.2
300	4.338	152.2	7.1	4.6	11.7	300	2.506	170.3	105.7	0.2	105.9
400	4.416	203.8	9.5	6.4	15.9	400	2.503	204.9	127.1	0.2	127.3
500	4.457	255.6	11.9	8.2	20.1	500	2.502	237.2	147.2	0.1	147.3
600	4.483	306.1	14.3	10.0	24.2	600	2.502	267.2	165.8	0.1	165.9
700	4.501	355.2	16.6	11.7	28.2	700	2.501	295.3	183.2	0.1	183.3
800	4.514	402.2	18.8	13.3	32.1	800	2.501	322.0	199.8	0.1	199.9
900	4.525	447.2	20.8	14.9	35.7	900	2.501	347.5	215.6	0.1	215.7
1000	4.534	490.1	22.8	16.4	39.2	1000	2.501	372.0	230.8	0.0	230.9
1100	4.543	531.1	24.8	17.8	42.6	1100	2.501	395.6	245.5	0.1	245.5
1200	4.550	570.6	26.6	19.2	45.8	1200	2.501	418.5	259.6	0.1	259.7
1300	4.557	608.6	28.4	20.6	48.9	1300	2.501	440.6	273.4	0.1	273.5
1400	4.564	645.4	30.1	21.9	52.0	1400	2.502	462.2	286.8	0.2	287.0
1500	4.570	680.9	31.7	23.1	54.9	1500	2.503	483.2	299.8	0.4	300.2
1600	4.576	715.4	33.4	24.4	57.7	1600	2.505	503.8	312.6	0.6	313.1
1700	4.582	749.0	34.9	25.6	60.5	1700	2.508	523.8	325.0	0.9	325.9
1800	4.588	781.6	36.4	26.8	63.2	1800	2.511	543.5	337.2	1.3	338.5
1900	4.594	813.3	37.9	28.0	65.9	1900	2.515	562.8	349.2	1.9	351.0
2000	4.600	844.2	39.4	29.1	68.5	2000	2.520	581.7	360.9	2.5	363.5
2100	4.605	874.6	40.8	30.2	71.0	2100	2.526	600.3	372.5	3.4	375.8
2200	4.611	904.2	42.2	31.3	73.5	2200	2.532	618.6	383.8	4.3	388.1
2300	4.617	933.1	43.5	32.4	75.9	2300	2.539	636.6	395.0	5.4	400.4
2400	4.622	961.4	44.8	33.5	78.3	2400	2.547	654.3	406.0	6.7	412.6
2500	4.628	989.1	46.1	34.5	80.7	2500	2.555	671.8	416.8	8.0	424.8
2600	4.633	1016.3	47.4	35.6	83.0	2600	2.563	689.0	427.5	9.5	437.0
2700	4.638	1043.1	48.6	36.6	85.2	2700	2.572	705.9	438.0	11.1	449.1
2800	4.644	1069.5	49.9	37.6	87.5	2800	2.582	722.7	448.4	12.9	461.3
2900	4.649	1095.6	51.1	38.6	89.7	2900	2.591	739.2	458.7	14.7	473.3
3000	4.655	1121.2	52.3	39.6	91.9	3000	2.600	755.6	468.8	16.6	485.4
3100	4.660	1146.5	53.5	40.6	94.1	3100	2.610	771.7	478.8	18.5	497.4
3200	4.665	1171.5	54.6	41.6	96.3	3200	2.620	787.7	488.7	20.6	509.3
3300	4.671	1196.2	55.8	42.6	98.4	3300	2.629	803.5	498.5	22.6	521.2
3400	4.676	1220.6	56.9	43.6	100.5	3400	2.638	819.1	508.2	24.7	533.0
3500	4.681	1244.7	58.0	44.6	102.6	3500	2.647	834.6	517.8	26.9	544.7
3600	4.686	1268.5	59.1	45.5	104.7	3600	2.656	849.9	527.3	29.0	556.3
3700	4.692	1292.0	60.2	46.5	106.7	3700	2.665	865.0	536.7	31.2	567.9
3800	4.697	1315.3	61.3	47.4	108.8	3800	2.674	880.1	546.0	33.4	579.4
3900	4.702	1338.3	62.4	48.4	110.8	3900	2.682	894.9	555.3	35.5	590.8
4000	4.708	1361.0	63.5	49.3	112.8	4000	2.690	909.7	564.4	37.7	602.1
4100	4.713	1383.5	64.5	50.2	114.8	4100	2.697	924.3	573.5	39.8	613.3
4200	4.718	1405.8	65.5	51.2	116.7	4200	2.705	938.8	582.4	41.9	624.4
4300	4.723	1427.8	66.6	52.1	118.7	4300	2.711	953.1	591.4	44.0	635.4
4400	4.729	1449.5	67.6	53.0	120.6	4400	2.718	967.3	600.2	46.1	646.3
4500	4.734	1471.1	68.6	53.9	122.5	4500	2.724	981.5	609.0	48.1	657.1
4600	4.739	1492.4	69.6	54.8	124.4	4600	2.730	995.5	617.7	50.1	667.8
4700	4.744	1513.5	70.6	55.8	126.3	4700	2.736	1009.4	626.3	52.1	678.3
4800	4.750	1534.5	71.5	56.7	128.2	4800	2.742	1023.2	634.8	54.0	688.8
4900	4.755	1555.2	72.5	57.6	130.1	4900	2.747	1036.9	643.3	55.9	699.2
5000	4.760	1575.7	73.5	58.4	131.9	5000	2.752	1050.5	651.8	57.7	709.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$CBrF_3$						CBr_4					
$M = 148.93$, $\sigma = 5.01$, $\epsilon/k = 235$						$M = 331.68$, $\sigma = 6.12$, $\epsilon/k = 442$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	4.710	53.5	2.7	2.1	4.8	100	7.635	42.3	1.0	1.7	2.7
200	6.771	106.5	5.3	8.0	13.3	200	9.792	77.7	1.7	4.5	6.2
300	8.355	159.4	8.0	16.4	24.4	300	10.987	116.0	2.6	7.8	10.4
400	9.528	208.3	10.4	25.8	36.2	400	11.680	155.4	3.5	11.3	14.8
500	10.375	252.7	12.6	35.0	47.7	500	12.086	194.2	4.4	14.7	19.1
600	10.979	293.3	14.7	43.8	58.5	600	12.336	231.8	5.2	18.0	23.2
700	11.411	330.9	16.6	51.9	68.5	700	12.498	267.7	6.0	21.2	27.2
800	11.726	366.2	18.3	59.5	77.8	800	12.609	301.7	6.8	24.1	30.9
900	11.959	399.4	20.0	66.6	86.5	900	12.687	333.9	7.5	26.9	34.4
1000	12.137	431.0	21.6	73.2	94.7	1000	12.744	364.7	8.2	29.5	37.7
1100	12.273	461.1	23.1	79.4	102.4	1100	12.787	394.1	8.9	32.1	40.9
1200	12.381	489.8	24.5	85.2	109.8	1200	12.820	422.3	9.5	34.5	44.0
1300	12.466	517.6	25.9	90.9	116.8	1300	12.846	449.5	10.1	36.8	46.9
1400	12.536	544.5	27.2	96.2	123.5	1400	12.867	475.7	10.7	39.0	49.7
1500	12.593	570.6	28.6	101.4	130.0	1500	12.884	501.1	11.3	41.2	52.4
1600	12.640	596.1	29.8	106.5	136.3	1600	12.898	525.7	11.8	43.2	55.0
1700	12.679	620.9	31.1	111.3	142.4	1700	12.909	549.5	12.3	45.2	57.6
1800	12.713	645.0	32.3	116.0	148.3	1800	12.919	572.8	12.9	47.2	60.1
1900	12.741	668.6	33.5	120.6	154.1	1900	12.927	595.5	13.4	49.1	62.5
2000	12.766	691.7	34.6	125.1	159.7	2000	12.934	617.5	13.9	51.0	64.8
2100	12.787	714.2	35.7	129.4	165.2	2100	12.940	639.0	14.4	52.8	67.1
2200	12.806	736.3	36.8	133.6	170.5	2200	12.945	660.1	14.8	54.5	69.4
2300	12.822	757.9	37.9	137.8	175.7	2300	12.950	680.7	15.3	56.3	71.5
2400	12.836	779.0	39.0	141.8	180.8	2400	12.954	700.9	15.7	57.9	73.7
2500	12.849	799.8	40.0	145.8	185.8	2500	12.958	720.8	16.2	59.6	75.8
2600	12.860	820.2	41.0	149.7	190.7	2600	12.961	740.4	16.6	61.3	77.9
2700	12.870	840.3	42.0	153.5	195.5	2700	12.964	759.6	17.1	62.9	79.9
2800	12.879	860.2	43.0	157.2	200.3	2800	12.966	778.6	17.5	64.5	81.9
2900	12.887	879.7	44.0	160.9	205.0	2900	12.968	797.4	17.9	66.0	83.9
3000	12.894	899.1	45.0	164.6	209.6	3000	12.971	815.8	18.3	67.6	85.9
3100	12.901	918.2	45.9	168.2	214.2	3100	12.972	834.0	18.7	69.1	87.8
3200	12.907	937.2	46.9	171.8	218.7	3200	12.974	852.0	19.1	70.6	89.7
3300	12.912	956.1	47.8	175.3	223.2	3300	12.976	869.7	19.5	72.1	91.6
3400	12.917	974.8	48.8	178.9	227.7	3400	12.977	887.2	19.9	73.5	93.5
3500	12.922	993.6	49.7	182.4	232.1	3500	12.978	904.5	20.3	75.0	95.3
3600	12.926	1012.2	50.7	185.9	236.5	3600	12.980	921.6	20.7	76.4	97.1
3700	12.930	1030.9	51.6	189.4	241.0	3700	12.981	938.4	21.1	77.8	98.9
3800	12.934	1049.4	52.5	192.9	245.4	3800	12.982	955.1	21.5	79.2	100.6
3900	12.937	1067.4	53.4	196.2	249.6	3900	12.983	971.5	21.8	80.5	102.4
4000	12.940	1085.2	54.3	199.6	253.9	4000	12.983	987.8	22.2	81.9	104.1
4100	12.943	1102.9	55.2	202.9	258.1	4100	12.984	1003.8	22.6	83.2	105.8
4200	12.946	1120.4	56.1	206.1	262.2	4200	12.985	1019.7	22.9	84.6	107.5
4300	12.948	1137.7	56.9	209.4	266.3	4300	12.986	1035.4	23.3	85.9	109.1
4400	12.951	1154.9	57.8	212.6	270.4	4400	12.986	1051.0	23.6	87.2	110.8
4500	12.953	1172.0	58.6	215.8	274.4	4500	12.987	1066.4	24.0	88.4	112.4
4600	12.955	1188.9	59.5	218.9	278.4	4600	12.987	1081.6	24.3	89.7	114.0
4700	12.957	1205.6	60.3	222.1	282.4	4700	12.988	1096.7	24.6	91.0	115.6
4800	12.958	1222.3	61.2	225.2	286.3	4800	12.988	1111.6	25.0	92.2	117.2
4900	12.960	1238.8	62.0	228.2	290.2	4900	12.989	1126.5	25.3	93.4	118.8
5000	12.962	1255.1	62.8	231.3	294.1	5000	12.989	1141.2	25.6	94.7	120.3

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CCl						$CClF_3$					
$M = 47.47$, $\sigma = 4.065$, $\epsilon/k = 157.8$						$M = 104.47$, $\sigma = 4.96$, $\epsilon/k = 188$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.502	55.4	8.7	3.1	11.8	100	4.427	50.6	3.6	2.4	6.1
200	3.587	111.2	17.5	6.7	24.1	200	6.379	101.9	7.3	9.9	17.2
300	3.800	161.3	25.3	11.6	36.9	300	8.074	150.2	10.7	21.0	31.7
400	3.993	204.9	32.2	16.9	49.1	400	9.330	193.1	13.8	33.1	46.9
500	4.132	243.8	38.3	22.0	60.3	500	10.231	231.5	16.5	44.9	61.5
600	4.227	279.2	43.8	26.6	70.5	600	10.870	266.6	19.0	56.0	75.1
700	4.293	312.0	49.0	30.9	79.9	700	11.327	299.1	21.3	66.3	87.6
800	4.340	342.5	53.8	34.8	88.6	800	11.659	329.4	23.5	75.8	99.3
900	4.374	371.4	58.3	38.5	96.8	900	11.905	358.0	25.5	84.5	110.1
1000	4.401	399.0	62.6	41.9	104.6	1000	12.092	385.1	27.5	92.7	120.2
1100	4.421	425.6	66.8	45.2	112.0	1100	12.236	411.1	29.3	100.5	129.8
1200	4.437	451.1	70.8	48.3	119.1	1200	12.349	436.1	31.1	107.9	139.0
1300	4.450	475.8	74.7	51.3	126.0	1300	12.439	460.3	32.8	114.9	147.7
1400	4.461	499.5	78.4	54.1	132.6	1400	12.512	483.8	34.5	121.6	156.1
1500	4.470	522.6	82.0	56.9	138.9	1500	12.572	506.6	36.1	128.1	164.2
1600	4.478	544.9	85.5	59.6	145.1	1600	12.621	528.7	37.7	134.4	172.1
1700	4.485	566.6	89.0	62.1	151.1	1700	12.663	550.1	39.2	140.4	179.6
1800	4.490	587.8	92.3	64.7	156.9	1800	12.698	571.0	40.7	146.2	187.0
1900	4.496	608.5	95.5	67.1	162.6	1900	12.728	591.4	42.2	151.9	194.1
2000	4.500	628.9	98.7	69.5	168.2	2000	12.754	611.3	43.6	157.4	201.0
2100	4.505	648.9	101.9	71.9	173.8	2100	12.776	630.8	45.0	162.8	207.8
2200	4.509	668.7	105.0	74.2	179.2	2200	12.796	649.9	46.4	168.0	214.4
2300	4.512	688.4	108.1	76.5	184.6	2300	12.813	668.6	47.7	173.1	220.8
2400	4.516	707.9	111.1	78.9	190.0	2400	12.828	687.1	49.0	178.2	227.2
2500	4.519	727.5	114.2	81.2	195.4	2500	12.841	705.4	50.3	183.2	233.5
2600	4.522	746.6	117.2	83.4	200.6	2600	12.853	723.5	51.6	188.1	239.7
2700	4.525	765.2	120.1	85.6	205.8	2700	12.863	741.5	52.9	192.9	245.8
2800	4.527	783.7	123.0	87.8	210.8	2800	12.873	759.4	54.2	197.8	251.9
2900	4.530	801.8	125.9	89.9	215.8	2900	12.881	777.2	55.4	202.6	258.0
3000	4.533	819.7	128.7	92.1	220.8	3000	12.889	795.1	56.7	207.4	264.1
3100	4.535	837.4	131.5	94.2	225.6	3100	12.896	812.4	58.0	212.1	270.0
3200	4.537	854.9	134.2	96.2	230.5	3200	12.902	829.4	59.2	216.6	275.8
3300	4.539	872.2	136.9	98.3	235.2	3300	12.908	846.3	60.4	221.2	281.5
3400	4.542	889.3	139.6	100.3	239.9	3400	12.913	863.0	61.6	225.6	287.2
3500	4.544	906.2	142.3	102.3	244.6	3500	12.918	879.4	62.7	230.1	292.8
3600	4.546	922.9	144.9	104.3	249.2	3600	12.923	895.7	63.9	234.4	298.3
3700	4.548	939.5	147.5	106.3	253.8	3700	12.927	911.9	65.0	238.7	303.8
3800	4.550	955.8	150.1	108.3	258.3	3800	12.930	927.8	66.2	243.0	309.2
3900	4.552	972.1	152.6	110.2	262.8	3900	12.934	943.6	67.3	247.2	314.5
4000	4.554	988.1	155.1	112.1	267.3	4000	12.937	959.3	68.4	251.4	319.8
4100	4.556	1004.1	157.6	114.1	271.7	4100	12.940	974.8	69.5	255.5	325.1
4200	4.558	1019.8	160.1	116.0	276.1	4200	12.943	990.2	70.6	259.6	330.3
4300	4.559	1035.5	162.6	117.8	280.4	4300	12.946	1005.4	71.7	263.7	335.4
4400	4.561	1051.0	165.0	119.7	284.7	4400	12.948	1020.5	72.8	267.7	340.5
4500	4.563	1066.4	167.4	121.6	289.0	4500	12.950	1035.5	73.9	271.7	345.6
4600	4.565	1081.6	169.8	123.4	293.2	4600	12.952	1050.4	74.9	275.7	350.6
4700	4.567	1096.8	172.2	125.3	297.4	4700	12.954	1065.1	76.0	279.6	355.6
4800	4.568	1111.8	174.5	127.1	301.6	4800	12.956	1079.7	77.0	283.5	360.5
4900	4.570	1126.7	176.9	128.9	305.8	4900	12.958	1094.2	78.1	287.3	365.4
5000	4.572	1141.5	179.2	130.7	309.9	5000	12.960	1108.6	79.1	291.2	370.3

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CCl_2F_2						CCl_3F					
$M = 120.92$, $\sigma = 5.25$, $\epsilon/k = 253$						$M = 137.38$, $\sigma = 5.44$, $\epsilon/k = 334$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	4.760	42.5	2.6	2.1	4.7	100	5.211	38.0	2.1	2.0	4.0
200	7.021	84.1	5.2	8.2	13.4	200	7.747	72.3	3.9	7.2	11.2
300	8.721	126.3	7.8	17.0	24.8	300	9.408	109.2	5.9	14.4	20.3
400	9.900	165.9	10.2	26.6	36.9	400	10.482	145.4	7.9	22.2	30.1
500	10.706	202.1	12.5	36.0	48.4	500	11.177	180.0	9.8	29.8	39.6
600	11.258	235.3	14.5	44.7	59.2	600	11.636	212.2	11.5	37.0	48.5
700	11.644	266.1	16.4	52.8	69.2	700	11.949	242.3	13.1	43.7	56.9
800	11.920	294.9	18.2	60.3	78.4	800	12.169	270.5	14.7	49.9	64.6
900	12.122	322.2	19.9	67.2	87.1	900	12.328	297.2	16.1	55.8	71.9
1000	12.274	347.9	21.4	73.8	95.2	1000	12.447	322.6	17.5	61.3	78.8
1100	12.391	372.7	23.0	80.0	102.9	1100	12.537	346.9	18.8	66.5	85.3
1200	12.482	396.2	24.4	85.8	110.2	1200	12.607	370.2	20.1	71.4	91.5
1300	12.555	418.9	25.8	91.4	117.2	1300	12.663	392.5	21.3	76.2	97.5
1400	12.613	440.8	27.2	96.7	123.9	1400	12.708	414.1	22.5	80.7	103.2
1500	12.661	462.1	28.5	101.9	130.3	1500	12.744	434.9	23.6	85.1	108.7
1600	12.700	482.8	29.8	106.8	136.6	1600	12.774	455.1	24.7	89.3	114.0
1700	12.734	503.0	31.0	111.7	142.7	1700	12.799	474.6	25.7	93.3	119.1
1800	12.762	522.7	32.2	116.4	148.6	1800	12.820	493.7	26.8	97.3	124.1
1900	12.785	542.0	33.4	120.9	154.3	1900	12.838	512.4	27.8	101.1	128.9
2000	12.806	560.9	34.6	125.4	160.0	2000	12.854	530.6	28.8	104.9	133.7
2100	12.823	579.3	35.7	129.7	165.4	2100	12.867	548.5	29.8	108.6	138.3
2200	12.839	597.3	36.8	134.0	170.8	2200	12.879	566.1	30.7	112.2	142.9
2300	12.852	615.0	37.9	138.1	176.0	2300	12.889	583.3	31.6	115.7	147.4
2400	12.864	632.3	39.0	142.2	181.1	2400	12.898	600.2	32.6	119.2	151.7
2500	12.875	649.3	40.0	146.1	186.1	2500	12.906	616.9	33.5	122.6	156.0
2600	12.884	666.0	41.0	150.0	191.1	2600	12.913	633.2	34.3	125.9	160.2
2700	12.892	682.4	42.1	153.8	195.9	2700	12.919	649.3	35.2	129.2	164.4
2800	12.900	698.5	43.0	157.6	200.6	2800	12.925	665.1	36.1	132.4	168.5
2900	12.906	714.4	44.0	161.3	205.3	2900	12.930	680.6	36.9	135.6	172.5
3000	12.913	730.1	45.0	164.9	209.9	3000	12.934	696.0	37.8	138.7	176.4
3100	12.918	745.6	46.0	168.5	214.5	3100	12.938	711.0	38.6	141.7	180.3
3200	12.923	760.9	46.9	172.1	219.0	3200	12.942	725.9	39.4	144.7	184.1
3300	12.928	776.1	47.8	175.6	223.4	3300	12.946	740.5	40.2	147.7	187.9
3400	12.932	791.2	48.8	179.0	227.8	3400	12.949	755.0	41.0	150.6	191.6
3500	12.936	806.1	49.7	182.5	232.2	3500	12.952	769.2	41.7	153.5	195.2
3600	12.939	821.0	50.6	185.9	236.5	3600	12.954	783.3	42.5	156.4	198.9
3700	12.942	835.9	51.5	189.3	240.9	3700	12.957	797.2	43.2	159.2	202.4
3800	12.945	850.6	52.4	192.8	245.2	3800	12.959	811.0	44.0	162.0	206.0
3900	12.948	865.4	53.3	196.2	249.5	3900	12.961	824.6	44.7	164.7	209.4
4000	12.951	880.2	54.2	199.5	253.8	4000	12.963	838.1	45.5	167.4	212.9
4100	12.953	894.7	55.1	202.9	258.0	4100	12.965	851.5	46.2	170.1	216.3
4200	12.955	909.0	56.0	206.2	262.2	4200	12.966	864.7	46.9	172.8	219.7
4300	12.957	923.1	56.9	209.4	266.3	4300	12.968	877.9	47.6	175.5	223.1
4400	12.959	937.1	57.8	212.6	270.4	4400	12.969	890.9	48.3	178.1	226.4
4500	12.961	950.9	58.6	215.8	274.4	4500	12.971	903.9	49.0	180.7	229.8
4600	12.963	964.7	59.5	219.0	278.4	4600	12.972	916.9	49.7	183.3	233.1
4700	12.964	978.3	60.3	222.1	282.4	4700	12.973	929.7	50.4	185.9	236.4
4800	12.966	991.8	61.1	225.2	286.3	4800	12.974	942.6	51.1	188.5	239.6
4900	12.967	1005.2	62.0	228.3	290.2	4900	12.975	955.4	51.8	191.1	242.9
5000	12.968	1018.6	62.8	231.3	294.1	5000	12.976	968.2	52.5	193.7	246.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CCl_4						CF					
$M = 153.84$, $\sigma = 5.947$, $\epsilon/k = 322.7$						$M = 31.01$, $\sigma = 3.635$, $\epsilon/k = 94.2$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	5.654	34.1	1.6	1.8	3.5	100	3.730	73.0	17.5	7.6	25.1
200	8.399	65.2	3.2	6.6	9.7	200	3.581	138.4	33.3	12.7	45.9
300	10.047	98.4	4.8	12.7	17.4	300	3.617	191.1	45.9	18.1	64.0
400	11.028	130.9	6.3	19.0	25.4	400	3.740	236.2	56.8	24.8	81.5
500	11.619	161.7	7.8	25.1	33.0	500	3.879	276.1	66.4	32.2	98.6
600	11.989	190.3	9.2	30.8	40.0	600	4.003	312.7	75.1	39.8	114.9
700	12.232	217.0	10.5	36.0	46.5	700	4.103	346.9	83.4	47.1	130.4
800	12.399	242.1	11.7	40.9	52.6	800	4.183	379.1	91.1	54.0	145.1
900	12.518	265.8	12.9	45.4	58.3	900	4.247	409.5	98.4	60.5	158.9
1000	12.605	288.3	14.0	49.7	63.6	1000	4.297	438.3	105.3	66.6	172.0
1100	12.671	309.8	15.0	53.7	68.7	1100	4.338	466.0	112.0	72.5	184.4
1200	12.722	330.4	16.0	57.6	73.6	1200	4.372	492.7	118.4	78.0	196.4
1300	12.762	350.2	17.0	61.3	78.3	1300	4.400	518.8	124.7	83.4	208.1
1400	12.794	369.4	17.9	64.8	82.7	1400	4.424	544.5	130.9	88.6	219.5
1500	12.820	387.8	18.8	68.2	87.0	1500	4.444	570.1	137.0	93.7	230.7
1600	12.841	405.7	19.7	71.5	91.2	1600	4.462	594.8	142.9	98.7	241.6
1700	12.859	423.0	20.5	74.7	95.2	1700	4.477	618.8	148.7	103.5	252.2
1800	12.874	440.0	21.3	77.8	99.1	1800	4.491	642.3	154.4	108.2	262.5
1900	12.887	456.6	22.1	80.9	103.0	1900	4.504	665.3	159.9	112.8	272.7
2000	12.898	472.8	22.9	83.8	106.7	2000	4.515	687.9	165.3	117.3	282.6
2100	12.907	488.7	23.7	86.7	110.4	2100	4.526	710.0	170.6	121.7	292.3
2200	12.915	504.3	24.4	89.6	114.0	2200	4.535	731.8	175.9	126.0	301.8
2300	12.922	519.6	25.2	92.3	117.5	2300	4.544	753.2	181.0	130.2	311.2
2400	12.929	534.6	25.9	95.1	121.0	2400	4.553	774.2	186.1	134.4	320.5
2500	12.934	549.4	26.6	97.7	124.4	2500	4.561	795.0	191.0	138.6	329.6
2600	12.939	563.9	27.3	100.4	127.7	2600	4.568	815.4	196.0	142.7	338.6
2700	12.944	578.1	28.0	103.0	131.0	2700	4.575	835.5	200.8	146.7	347.5
2800	12.947	592.1	28.7	105.5	134.2	2800	4.582	855.4	205.6	150.7	356.3
2900	12.951	605.9	29.4	108.0	137.3	2900	4.589	875.0	210.3	154.6	364.9
3000	12.954	619.5	30.0	110.4	140.4	3000	4.595	894.4	214.9	158.5	373.5
3100	12.957	632.9	30.7	112.8	143.5	3100	4.602	913.5	219.5	162.4	382.0
3200	12.960	646.1	31.3	115.2	146.5	3200	4.608	932.5	224.1	166.2	390.3
3300	12.962	659.0	31.9	117.6	149.5	3300	4.614	951.2	228.6	170.1	398.6
3400	12.964	671.9	32.5	119.9	152.4	3400	4.619	969.7	233.0	173.8	406.9
3500	12.966	684.5	33.2	122.2	155.3	3500	4.625	988.0	237.4	177.6	415.0
3600	12.968	697.0	33.8	124.4	158.2	3600	4.630	1006.1	241.8	181.3	423.1
3700	12.970	709.4	34.4	126.6	161.0	3700	4.636	1024.1	246.1	185.0	431.1
3800	12.971	721.6	35.0	128.8	163.8	3800	4.641	1041.8	250.4	188.7	439.1
3900	12.973	733.7	35.5	131.0	166.6	3900	4.646	1059.4	254.6	192.4	447.0
4000	12.974	745.7	36.1	133.2	169.3	4000	4.652	1076.9	258.8	196.0	454.8
4100	12.975	757.6	36.7	135.3	172.0	4100	4.657	1094.2	262.9	199.6	462.6
4200	12.977	769.4	37.3	137.5	174.7	4200	4.662	1111.3	267.1	203.2	470.3
4300	12.978	781.2	37.8	139.6	177.4	4300	4.667	1128.3	271.1	206.8	477.9
4400	12.979	792.8	38.4	141.7	180.1	4400	4.672	1145.1	275.2	210.4	485.6
4500	12.980	804.5	39.0	143.8	182.7	4500	4.676	1161.9	279.2	213.9	493.1
4600	12.980	816.0	39.5	145.8	185.4	4600	4.681	1178.4	283.2	217.4	500.6
4700	12.981	827.6	40.1	147.9	188.0	4700	4.686	1194.9	287.2	221.0	508.1
4800	12.982	839.1	40.6	150.0	190.6	4800	4.691	1211.2	291.1	224.5	515.6
4900	12.983	850.6	41.2	152.0	193.2	4900	4.696	1227.4	295.0	228.0	522.9
5000	12.983	862.1	41.8	154.1	195.9	5000	4.700	1243.5	298.8	231.5	530.3

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CF_2						CF_3					
$M = 50.01$, $\sigma = 3.977$, $\epsilon/k = 108$						$M = 69.01$, $\sigma = 4.320$, $\epsilon/k = 121$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.006	72.3	10.8	5.7	16.5	100	4.102	67.9	7.3	4.1	11.5
200	4.216	139.9	20.8	12.6	33.4	200	5.083	133.3	14.4	13.1	27.5
300	4.639	195.4	29.1	21.9	51.0	300	6.175	188.2	20.3	26.3	46.6
400	5.099	243.0	36.2	33.1	69.3	400	7.073	235.3	25.4	40.9	66.3
500	5.500	285.2	42.5	44.9	87.4	500	7.783	277.3	29.9	55.7	85.6
600	5.819	323.6	48.2	56.3	104.6	600	8.334	315.3	34.1	69.9	104.0
700	6.064	359.4	53.6	67.2	120.8	700	8.760	350.6	37.9	83.4	121.3
800	6.253	393.2	58.6	77.4	136.0	800	9.093	383.9	41.5	96.2	137.7
900	6.399	425.3	63.4	87.0	150.3	900	9.359	415.5	44.9	108.3	153.2
1000	6.514	455.7	67.9	95.9	163.9	1000	9.576	445.7	48.1	119.9	168.0
1100	6.605	484.8	72.2	104.4	176.6	1100	9.756	474.5	51.2	130.9	182.1
1200	6.680	512.8	76.4	112.4	188.8	1200	9.909	502.2	54.2	141.4	195.6
1300	6.741	539.8	80.4	120.1	200.5	1300	10.041	528.8	57.1	151.6	208.7
1400	6.792	566.0	84.3	127.4	211.8	1400	10.157	554.5	59.9	161.4	221.3
1500	6.836	591.8	88.2	134.6	222.8	1500	10.261	579.6	62.6	171.0	233.6
1600	6.873	617.2	92.0	141.6	233.6	1600	10.356	604.1	65.2	180.4	245.6
1700	6.906	642.6	95.8	148.5	244.3	1700	10.443	628.3	67.8	189.7	257.5
1800	6.935	667.3	99.4	155.2	254.7	1800	10.523	652.2	70.4	198.9	269.3
1900	6.960	691.3	103.0	161.7	264.8	1900	10.599	676.0	73.0	208.1	281.1
2000	6.983	714.9	106.5	168.1	274.6	2000	10.671	699.4	75.5	217.2	292.7
2100	7.004	738.0	110.0	174.4	284.3	2100	10.739	722.1	78.0	226.1	304.1
2200	7.024	760.6	113.3	180.5	293.8	2200	10.804	744.3	80.4	235.0	315.3
2300	7.041	783.0	116.7	186.5	303.2	2300	10.867	766.2	82.7	243.7	326.5
2400	7.058	804.9	119.9	192.4	312.4	2400	10.928	787.8	85.1	252.4	337.5
2500	7.073	826.5	123.2	198.2	321.4	2500	10.988	809.0	87.4	261.0	348.4
2600	7.087	847.8	126.3	204.0	330.3	2600	11.046	829.9	89.6	269.6	359.2
2700	7.101	868.8	129.5	209.7	339.1	2700	11.102	850.5	91.8	278.1	369.9
2800	7.114	889.5	132.5	215.3	347.8	2800	11.158	870.8	94.0	286.6	380.6
2900	7.126	909.9	135.6	220.8	356.4	2900	11.212	890.8	96.2	295.0	391.2
3000	7.138	930.1	138.6	226.3	364.9	3000	11.266	910.6	98.3	303.4	401.8
3100	7.150	950.0	141.6	231.7	373.3	3100	11.319	930.1	100.4	311.8	412.3
3200	7.161	969.7	144.5	237.1	381.6	3200	11.372	949.5	102.5	320.2	422.7
3300	7.171	989.2	147.4	242.4	389.8	3300	11.423	968.5	104.6	328.5	433.1
3400	7.182	1008.5	150.3	247.6	397.9	3400	11.475	987.4	106.6	336.9	443.5
3500	7.192	1027.5	153.1	252.9	406.0	3500	11.526	1006.1	108.6	345.2	453.8
3600	7.201	1046.4	155.9	258.0	414.0	3600	11.576	1024.6	110.6	353.5	464.1
3700	7.211	1065.1	158.7	263.2	421.9	3700	11.626	1042.9	112.6	361.8	474.4
3800	7.220	1083.5	161.5	268.3	429.8	3800	11.676	1061.0	114.6	370.1	484.7
3900	7.230	1101.9	164.2	273.4	437.5	3900	11.726	1079.0	116.5	378.4	494.9
4000	7.239	1120.0	166.9	278.4	445.3	4000	11.775	1096.8	118.4	386.7	505.1
4100	7.248	1138.0	169.6	283.4	453.0	4100	11.824	1114.4	120.3	395.0	515.3
4200	7.256	1155.8	172.2	288.4	460.6	4200	11.873	1131.9	122.2	403.3	525.5
4300	7.265	1173.5	174.9	293.3	468.2	4300	11.921	1149.2	124.1	411.6	535.7
4400	7.273	1191.0	177.5	298.2	475.7	4400	11.970	1166.4	126.0	419.9	545.8
4500	7.282	1208.4	180.1	303.1	483.2	4500	12.018	1183.4	127.8	428.2	556.0
4600	7.290	1225.7	182.6	308.0	490.6	4600	12.066	1200.3	129.6	436.5	566.1
4700	7.298	1242.8	185.2	312.8	498.0	4700	12.114	1217.1	131.4	444.8	576.2
4800	7.307	1259.8	187.7	317.6	505.4	4800	12.162	1233.7	133.2	453.1	586.3
4900	7.315	1276.7	190.2	322.4	512.7	4900	12.210	1250.2	135.0	461.5	596.5
5000	7.323	1293.4	192.7	327.2	519.9	5000	12.258	1266.6	136.8	469.8	606.6

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TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CF_4						CH					
$M = 88.01$, $\sigma = 4.662$, $\epsilon/k = 134.0$						$M = 13.02$, $\sigma = 3.370$, $\epsilon/k = 68.6$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.179	62.4	5.3	3.1	8.4	100	3.503	63.8	36.5	12.9	49.4
200	5.710	123.9	10.5	11.9	22.3	200	3.505	114.9	65.8	23.3	89.0
300	7.424	176.7	15.0	25.9	40.9	300	3.507	155.2	88.8	31.5	120.3
400	8.808	222.2	18.8	41.8	60.6	400	3.514	189.4	108.4	38.7	147.1
500	9.856	262.7	22.2	57.6	79.8	500	3.536	220.3	126.1	46.0	172.1
600	10.633	299.6	25.4	72.6	98.0	600	3.577	248.6	142.3	54.0	196.3
700	11.211	333.6	28.2	86.6	114.9	700	3.636	274.9	157.3	62.9	220.3
800	11.649	365.5	31.0	99.7	130.6	800	3.706	299.5	171.4	72.8	244.2
900	11.987	395.9	33.5	112.0	145.5	900	3.780	323.0	184.9	83.3	268.2
1000	12.256	425.0	36.0	123.6	159.6	1000	3.854	345.9	198.0	94.3	292.3
1100	12.473	452.8	38.3	134.6	172.9	1100	3.925	368.5	210.9	105.8	316.7
1200	12.653	479.5	40.6	145.1	185.7	1200	3.991	390.1	223.3	117.1	340.4
1300	12.805	505.2	42.8	155.2	197.9	1300	4.051	411.0	235.2	128.5	363.7
1400	12.936	530.0	44.9	164.9	209.7	1400	4.107	431.3	246.9	139.6	386.5
1500	13.051	554.0	46.9	174.2	221.1	1500	4.157	451.1	258.2	150.6	408.8
1600	13.153	577.4	48.9	183.3	232.2	1600	4.202	470.4	269.2	161.3	430.6
1700	13.245	600.3	50.8	192.3	243.1	1700	4.244	489.2	280.0	171.9	451.9
1800	13.329	622.8	52.7	201.0	253.8	1800	4.281	507.7	290.6	182.2	472.7
1900	13.407	645.0	54.6	209.7	264.3	1900	4.315	525.8	300.9	192.3	493.2
2000	13.479	667.0	56.5	218.3	274.7	2000	4.346	543.5	311.1	202.2	513.2
2100	13.547	689.0	58.3	226.9	285.2	2100	4.375	560.9	321.0	211.9	532.9
2200	13.612	710.5	60.2	235.3	295.5	2200	4.401	578.0	330.8	221.4	552.2
2300	13.673	731.5	61.9	243.6	305.5	2300	4.425	594.8	340.5	230.7	571.2
2400	13.732	752.1	63.7	251.8	315.5	2400	4.448	611.4	349.9	239.9	589.9
2500	13.788	772.5	65.4	259.9	325.3	2500	4.469	627.7	359.3	249.0	608.3
2600	13.843	792.5	67.1	267.9	335.0	2600	4.488	643.8	368.5	257.9	626.4
2700	13.896	812.2	68.8	275.9	344.6	2700	4.507	659.7	377.6	266.7	644.3
2800	13.948	831.6	70.4	283.7	354.2	2800	4.524	675.3	386.5	275.4	662.0
2900	13.998	850.8	72.0	291.6	363.6	2900	4.541	690.8	395.4	284.0	679.4
3000	14.048	869.7	73.6	299.3	373.0	3000	4.556	706.1	404.1	292.5	696.6
3100	14.096	888.4	75.2	307.1	382.3	3100	4.571	721.2	412.8	300.9	713.7
3200	14.144	906.9	76.8	314.7	391.5	3200	4.585	736.1	421.3	309.2	730.5
3300	14.191	925.2	78.3	322.4	400.7	3300	4.599	750.8	429.8	317.4	747.2
3400	14.238	943.2	79.9	330.0	409.9	3400	4.611	765.4	438.1	325.6	763.7
3500	14.283	961.1	81.4	337.5	418.9	3500	4.624	779.9	446.4	333.7	780.1
3600	14.329	978.8	82.9	345.1	428.0	3600	4.636	794.2	454.6	341.8	796.3
3700	14.374	996.3	84.4	352.6	436.9	3700	4.648	808.3	462.7	349.8	812.4
3800	14.418	1013.6	85.8	360.1	445.9	3800	4.659	822.3	470.7	357.7	828.4
3900	14.462	1030.8	87.3	367.5	454.8	3900	4.670	836.2	478.6	365.6	844.2
4000	14.506	1047.8	88.7	375.0	463.7	4000	4.681	850.0	486.5	373.4	859.9
4100	14.550	1064.7	90.1	382.4	472.5	4100	4.691	863.6	494.3	381.2	875.5
4200	14.593	1081.4	91.6	389.8	481.3	4200	4.701	877.2	502.1	389.0	891.0
4300	14.636	1097.9	93.0	397.1	490.1	4300	4.711	890.6	509.7	396.7	906.4
4400	14.679	1114.3	94.4	404.5	498.9	4400	4.721	903.9	517.3	404.4	921.7
4500	14.721	1130.6	95.7	411.8	507.6	4500	4.730	917.1	524.9	412.1	937.0
4600	14.764	1146.8	97.1	419.2	516.3	4600	4.739	930.2	532.4	419.7	952.1
4700	14.806	1162.8	98.5	426.5	525.0	4700	4.749	943.2	539.8	427.3	967.1
4800	14.848	1178.7	99.8	433.8	533.6	4800	4.758	956.0	547.2	434.9	982.1
4900	14.890	1194.5	101.1	441.1	542.3	4900	4.766	968.8	554.5	442.4	996.9
5000	14.932	1210.2	102.5	448.4	550.9	5000	4.775	981.5	561.8	449.9	1011.7

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$CHBrCl_2$						$CHBr_3$					
$M = 163.85$, $\sigma = 5.25$, $\epsilon/k = 427$						$M = 252.77$, $\sigma = 5.33$, $\epsilon/k = 559$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	5.154	40.9	1.9	1.7	3.6	100	5.842	----	---	---	---
200	6.836	75.4	3.4	5.2	8.7	200	7.362	81.1	2.4	4.1	6.5
300	8.150	112.8	5.1	10.2	15.3	300	8.568	118.6	3.5	7.5	11.0
400	9.145	151.1	6.9	16.1	22.9	400	9.473	158.4	4.7	11.5	16.1
500	9.865	188.6	8.6	22.2	30.8	500	10.122	198.8	5.9	15.7	21.6
600	10.390	224.9	10.2	28.4	38.6	600	10.592	238.7	7.0	20.0	27.1
700	10.785	259.3	11.8	34.4	46.2	700	10.947	277.7	8.2	24.3	32.5
800	11.094	291.9	13.3	40.2	53.4	800	11.226	315.4	9.3	28.6	37.9
900	11.344	322.8	14.7	45.7	60.4	900	11.452	351.7	10.4	32.7	43.0
1000	11.549	352.2	16.0	51.0	67.0	1000	11.639	386.5	11.4	36.7	48.1
1100	11.721	380.3	17.3	56.1	73.4	1100	11.797	419.8	12.4	40.5	52.9
1200	11.866	407.3	18.5	61.1	79.6	1200	11.931	451.9	13.3	44.2	57.6
1300	11.989	433.3	19.7	65.8	85.5	1300	12.046	482.8	14.2	47.8	62.1
1400	12.095	458.4	20.8	70.4	91.3	1400	12.144	512.7	15.1	51.3	66.4
1500	12.186	482.7	22.0	74.8	96.8	1500	12.230	541.6	16.0	54.7	70.6
1600	12.265	506.2	23.0	79.1	102.2	1600	12.303	569.6	16.8	58.0	74.7
1700	12.334	528.9	24.1	83.3	107.3	1700	12.368	596.9	17.6	61.1	78.7
1800	12.394	551.3	25.1	87.3	112.4	1800	12.424	623.5	18.4	64.2	82.6
1900	12.446	572.9	26.1	91.2	117.3	1900	12.474	649.3	19.1	67.2	86.4
2000	12.493	593.9	27.0	95.0	122.0	2000	12.518	674.6	19.9	70.1	90.0
2100	12.534	614.5	27.9	98.7	126.7	2100	12.557	699.2	20.6	73.0	93.6
2200	12.570	634.6	28.9	102.3	131.2	2200	12.591	723.3	21.3	75.7	97.1
2300	12.603	654.3	29.8	105.8	135.6	2300	12.622	747.0	22.0	78.5	100.5
2400	12.632	673.7	30.6	109.3	139.9	2400	12.649	770.1	22.7	81.1	103.8
2500	12.658	692.8	31.5	112.7	144.2	2500	12.674	792.7	23.4	83.7	107.1
2600	12.681	711.6	32.4	116.0	148.3	2600	12.696	814.9	24.0	86.2	110.3
2700	12.703	730.0	33.2	119.2	152.4	2700	12.716	836.7	24.7	88.7	113.4
2800	12.722	748.2	34.0	122.4	156.5	2800	12.735	858.1	25.3	91.1	116.4
2900	12.739	766.2	34.8	125.6	160.4	2900	12.751	879.2	25.9	93.5	119.4
3000	12.755	783.9	35.7	128.7	164.3	3000	12.766	899.9	26.5	95.9	122.4
3100	12.770	801.3	36.4	131.7	168.2	3100	12.780	920.4	27.1	98.2	125.3
3200	12.783	818.5	37.2	134.7	172.0	3200	12.793	940.6	27.7	100.5	128.2
3300	12.795	835.5	38.0	137.7	175.7	3300	12.805	960.6	28.3	102.7	131.0
3400	12.806	852.2	38.8	140.6	179.4	3400	12.815	980.3	28.9	104.9	133.8
3500	12.817	868.8	39.5	143.5	183.0	3500	12.825	999.8	29.5	107.1	136.6
3600	12.826	885.1	40.3	146.3	186.6	3600	12.834	1019.1	30.0	109.3	139.3
3700	12.835	901.2	41.0	149.1	190.1	3700	12.843	1038.2	30.6	111.4	142.0
3800	12.843	917.1	41.7	151.9	193.6	3800	12.850	1057.1	31.2	113.5	144.7
3900	12.851	932.9	42.4	154.6	197.0	3900	12.858	1075.7	31.7	115.6	147.3
4000	12.858	948.4	43.1	157.3	200.4	4000	12.864	1094.2	32.3	117.7	149.9
4100	12.865	963.8	43.8	159.9	203.8	4100	12.871	1112.4	32.8	119.7	152.5
4200	12.871	979.0	44.5	162.5	207.1	4200	12.876	1130.5	33.3	121.7	155.1
4300	12.876	994.0	45.2	165.1	210.3	4300	12.882	1148.4	33.9	123.7	157.6
4400	12.882	1008.9	45.9	167.7	213.6	4400	12.887	1166.1	34.4	125.7	160.1
4500	12.887	1023.6	46.6	170.2	216.8	4500	12.892	1183.6	34.9	127.6	162.5
4600	12.891	1038.2	47.2	172.7	219.9	4600	12.896	1201.0	35.4	129.6	165.0
4700	12.896	1052.6	47.9	175.2	223.1	4700	12.901	1218.1	35.9	131.5	167.4
4800	12.900	1066.9	48.5	177.6	226.2	4800	12.905	1235.2	36.4	133.4	169.8
4900	12.904	1081.2	49.2	180.1	229.3	4900	12.908	1252.0	36.9	135.2	172.2
5000	12.908	1095.2	49.8	182.5	232.3	5000	12.912	1268.7	37.4	137.1	174.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$CHClF_2$						$CHCl_3$					
$M = 86.48$, $\sigma = 4.68$, $\epsilon/k = 261$						$M = 119.39$, $\sigma = 5.389$, $\epsilon/k = 340.2$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.247	44.7	3.9	2.4	6.2	100	4.842	35.8	2.2	1.8	4.1
200	5.479	88.1	7.6	8.0	15.5	200	6.553	68.1	4.2	6.1	10.3
300	6.740	132.4	11.4	17.0	28.4	300	7.929	102.8	6.4	12.3	18.7
400	7.866	174.3	15.0	28.4	43.4	400	8.974	136.9	8.5	19.5	28.0
500	8.781	212.7	18.3	40.5	58.8	500	9.732	169.6	10.6	27.0	37.5
600	9.495	247.9	21.4	52.6	74.0	600	10.285	200.2	12.5	34.2	46.7
700	10.049	280.6	24.2	64.3	88.5	700	10.701	228.7	14.3	41.2	55.5
800	10.487	311.3	26.8	75.4	102.2	800	11.026	255.5	15.9	47.9	63.8
900	10.837	340.3	29.3	86.0	115.4	900	11.288	280.9	17.5	54.2	71.8
1000	11.123	367.7	31.7	96.2	127.9	1000	11.502	305.0	19.0	60.3	79.4
1100	11.358	394.0	34.0	105.9	139.8	1100	11.681	328.0	20.5	66.2	86.6
1200	11.555	419.0	36.1	115.1	151.2	1200	11.832	350.1	21.9	71.8	93.6
1300	11.720	443.1	38.2	123.9	162.1	1300	11.960	371.3	23.2	77.2	100.4
1400	11.859	466.4	40.2	132.4	172.6	1400	12.070	391.8	24.5	82.4	106.8
1500	11.979	489.0	42.1	140.6	182.7	1500	12.164	411.6	25.7	87.4	113.1
1600	12.081	510.9	44.0	148.5	192.5	1600	12.245	430.7	26.9	92.2	119.1
1700	12.170	532.4	45.9	156.2	202.0	1700	12.316	449.3	28.0	96.9	124.9
1800	12.247	553.3	47.7	163.6	211.3	1800	12.378	467.4	29.2	101.4	130.6
1900	12.314	573.8	49.4	170.8	220.2	1900	12.432	485.1	30.3	105.9	136.1
2000	12.372	593.8	51.2	177.8	229.0	2000	12.480	502.4	31.4	110.2	141.5
2100	12.424	613.4	52.9	184.6	237.5	2100	12.522	519.4	32.4	114.4	146.8
2200	12.470	632.5	54.5	191.3	245.8	2200	12.559	536.0	33.5	118.5	151.9
2300	12.511	651.3	56.1	197.8	253.9	2300	12.593	552.3	34.5	122.5	157.0
2400	12.547	669.7	57.7	204.1	261.8	2400	12.623	568.4	35.5	126.4	161.9
2500	12.580	687.8	59.3	210.3	269.6	2500	12.649	584.2	36.5	130.3	166.7
2600	12.609	705.5	60.8	216.3	277.1	2600	12.673	599.7	37.4	134.0	171.5
2700	12.635	722.9	62.3	222.3	284.6	2700	12.695	614.9	38.4	137.8	176.1
2800	12.659	740.1	63.8	228.1	291.8	2800	12.715	629.9	39.3	141.4	180.7
2900	12.681	756.9	65.2	233.8	299.0	2900	12.733	644.7	40.2	145.0	185.2
3000	12.701	773.6	66.7	239.4	306.0	3000	12.749	659.2	41.1	148.5	189.6
3100	12.719	790.0	68.1	244.9	312.9	3100	12.764	673.6	42.0	151.9	193.9
3200	12.735	806.3	69.5	250.3	319.8	3200	12.778	687.7	42.9	155.3	198.2
3300	12.750	822.3	70.9	255.7	326.5	3300	12.790	701.6	43.8	158.6	202.4
3400	12.764	838.2	72.2	261.0	333.2	3400	12.802	715.3	44.6	161.9	206.5
3500	12.776	854.0	73.6	266.2	339.8	3500	12.812	728.8	45.5	165.1	210.6
3600	12.788	869.7	74.9	271.4	346.4	3600	12.822	742.2	46.3	168.3	214.6
3700	12.799	885.3	76.3	276.6	352.9	3700	12.831	755.3	47.1	171.5	218.6
3800	12.809	900.9	77.6	281.7	359.3	3800	12.840	768.4	48.0	174.6	222.5
3900	12.818	916.4	79.0	286.8	365.8	3900	12.847	781.3	48.8	177.6	226.4
4000	12.827	931.8	80.3	291.9	372.2	4000	12.855	794.1	49.6	180.7	230.2
4100	12.835	947.3	81.6	297.0	378.6	4100	12.861	806.8	50.4	183.7	234.0
4200	12.843	962.7	83.0	302.0	385.0	4200	12.868	819.3	51.1	186.6	237.8
4300	12.850	977.7	84.2	306.9	391.2	4300	12.873	831.8	51.9	189.6	241.5
4400	12.856	992.5	85.5	311.8	397.3	4400	12.879	844.1	52.7	192.5	245.2
4500	12.862	1007.2	86.8	316.6	403.4	4500	12.884	856.4	53.5	195.4	248.9
4600	12.868	1021.8	88.0	321.3	409.4	4600	12.889	868.6	54.2	198.3	252.5
4700	12.874	1036.2	89.3	326.1	415.3	4700	12.894	880.8	55.0	201.1	256.1
4800	12.879	1050.6	90.5	330.7	421.3	4800	12.898	892.9	55.7	204.0	259.7
4900	12.883	1064.8	91.8	335.4	427.1	4900	12.902	905.0	56.5	206.8	263.3
5000	12.888	1078.9	93.0	340.0	432.9	5000	12.906	917.0	57.2	209.7	266.9

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CHF_3						CH_2BrCl					
$M = 70.02$, $\sigma = 4.33$, $\epsilon/k = 240$						$M = 129.40$, $\sigma = 4.88$, $\epsilon/k = 410$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.077	48.7	5.2	2.9	8.1	100	4.459	42.6	2.5	1.7	4.1
200	4.960	96.7	10.3	8.9	19.2	200	5.320	79.0	4.5	4.5	9.1
300	6.160	144.8	15.4	19.9	35.3	300	6.393	118.4	6.8	9.3	16.2
400	7.334	189.6	20.2	34.3	54.5	400	7.401	158.7	9.1	15.8	24.9
500	8.330	230.3	24.5	50.3	74.8	500	8.224	197.8	11.4	23.0	34.3
600	9.121	267.5	28.5	66.3	94.8	600	8.878	235.4	13.6	30.4	44.0
700	9.740	302.0	32.1	81.9	114.1	700	9.406	271.0	15.6	37.9	53.6
800	10.230	334.4	35.6	96.8	132.4	800	9.845	304.7	17.5	45.4	62.9
900	10.622	364.9	38.8	111.0	149.9	900	10.215	336.5	19.4	52.6	72.0
1000	10.941	393.9	41.9	124.6	166.5	1000	10.532	366.8	21.1	59.7	80.9
1100	11.203	421.5	44.9	137.4	182.3	1100	10.804	395.8	22.8	66.6	89.4
1200	11.421	447.8	47.7	149.7	197.3	1200	11.039	423.7	24.4	73.3	97.7
1300	11.603	473.3	50.4	161.4	211.8	1300	11.243	450.4	25.9	79.8	105.8
1400	11.757	497.9	53.0	172.7	225.7	1400	11.419	476.3	27.4	86.1	113.6
1500	11.888	521.8	55.5	183.5	239.1	1500	11.573	501.3	28.9	92.2	121.1
1600	12.001	545.1	58.0	194.0	252.1	1600	11.708	525.5	30.3	98.1	128.3
1700	12.098	567.9	60.4	204.2	264.6	1700	11.825	549.1	31.6	103.8	135.4
1800	12.182	590.0	62.8	214.0	276.8	1800	11.929	571.9	32.9	109.3	142.3
1900	12.255	611.7	65.1	223.5	288.6	1900	12.020	594.2	34.2	114.7	148.9
2000	12.319	632.8	67.3	232.8	300.1	2000	12.101	615.8	35.5	119.9	155.3
2100	12.376	653.5	69.5	241.8	311.3	2100	12.172	637.0	36.7	124.9	161.6
2200	12.426	673.7	71.7	250.5	322.2	2200	12.236	657.8	37.9	129.8	167.7
2300	12.470	693.5	73.8	259.0	332.8	2300	12.293	678.1	39.1	134.6	173.7
2400	12.510	712.9	75.9	267.3	343.2	2400	12.344	698.1	40.2	139.3	179.5
2500	12.545	732.0	77.9	275.5	353.4	2500	12.390	717.8	41.3	143.9	185.3
2600	12.577	750.7	79.9	283.4	363.3	2600	12.432	737.2	42.5	148.4	190.9
2700	12.606	769.1	81.9	291.2	373.0	2700	12.469	756.3	43.6	152.8	196.4
2800	12.631	787.2	83.8	298.8	382.6	2800	12.503	775.1	44.6	157.2	201.8
2900	12.655	805.1	85.7	306.3	392.0	2900	12.534	793.6	45.7	161.4	207.1
3000	12.676	822.8	87.6	313.7	401.3	3000	12.562	811.9	46.8	165.6	212.4
3100	12.696	840.3	89.4	321.0	410.4	3100	12.588	829.9	47.8	169.7	217.5
3200	12.713	857.7	91.3	328.2	419.5	3200	12.612	847.6	48.8	173.7	222.6
3300	12.730	874.9	93.1	335.3	428.4	3300	12.634	865.1	49.8	177.7	227.5
3400	12.745	892.0	94.9	342.3	437.3	3400	12.653	882.4	50.8	181.6	232.4
3500	12.758	909.0	96.7	349.4	446.1	3500	12.672	899.4	51.8	185.5	237.3
3600	12.771	926.0	98.6	356.3	454.9	3600	12.689	916.2	52.8	189.2	242.0
3700	12.783	943.0	100.4	363.3	463.6	3700	12.705	932.8	53.7	193.0	246.7
3800	12.794	960.0	102.2	370.2	472.4	3800	12.719	949.2	54.7	196.6	251.3
3900	12.804	976.6	103.9	377.0	480.9	3900	12.733	965.4	55.6	200.3	255.9
4000	12.813	993.0	105.7	383.6	489.3	4000	12.745	981.4	56.5	203.8	260.4
4100	12.822	1009.1	107.4	390.2	497.6	4100	12.757	997.3	57.4	207.4	264.8
4200	12.830	1025.2	109.1	396.7	505.8	4200	12.768	1012.9	58.3	210.8	269.2
4300	12.838	1041.0	110.8	403.2	514.0	4300	12.778	1028.4	59.2	214.3	273.5
4400	12.845	1056.8	112.5	409.6	522.0	4400	12.788	1043.8	60.1	217.7	277.8
4500	12.851	1072.4	114.1	415.9	530.0	4500	12.797	1059.0	61.0	221.0	282.0
4600	12.858	1087.9	115.8	422.1	537.9	4600	12.805	1074.0	61.9	224.4	286.2
4700	12.863	1103.2	117.4	428.3	545.7	4700	12.813	1088.9	62.7	227.7	290.4
4800	12.869	1118.4	119.0	434.5	553.5	4800	12.821	1103.7	63.6	230.9	294.5
4900	12.874	1133.5	120.6	440.5	561.2	4900	12.828	1118.4	64.4	234.2	298.6
5000	12.879	1148.5	122.2	446.6	568.8	5000	12.834	1133.0	65.2	237.4	302.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CH_2ClF						CH_2Cl_2					
$M = 68.48$, $\sigma = 4.48$, $\epsilon/k = 318$						$M = 84.94$, $\sigma = 4.898$, $\epsilon/k = 356.3$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.124	40.3	4.4	2.5	6.9	100	4.293	36.0	3.2	2.0	5.2
200	4.759	77.2	8.4	6.7	15.1	200	5.107	67.9	6.0	5.5	11.4
300	5.676	116.6	12.7	14.2	26.9	300	6.169	102.5	9.0	11.6	20.6
400	6.683	155.0	16.9	24.8	41.7	400	7.199	136.7	12.0	19.8	31.8
500	7.585	191.3	20.8	37.3	58.1	500	8.053	169.7	14.9	29.1	44.0
600	8.334	225.0	24.5	50.3	74.8	600	8.737	200.7	17.6	38.7	56.3
700	8.950	256.4	27.9	63.4	91.3	700	9.291	229.8	20.2	48.2	68.3
800	9.463	285.9	31.1	76.3	107.4	800	9.750	257.1	22.6	57.6	80.1
900	9.893	313.8	34.1	88.9	123.0	900	10.136	282.9	24.8	66.7	91.5
1000	10.259	340.3	37.0	101.1	138.2	1000	10.466	307.4	27.0	75.6	102.6
1100	10.570	365.6	39.8	113.0	152.8	1100	10.748	330.9	29.0	84.3	113.3
1200	10.838	389.8	42.4	124.5	166.9	1200	10.992	353.4	31.0	92.7	123.7
1300	11.067	413.1	45.0	135.6	180.5	1300	11.202	375.1	32.9	100.8	133.7
1400	11.266	435.6	47.4	146.3	193.7	1400	11.384	395.9	34.7	108.6	143.4
1500	11.438	457.3	49.8	156.6	206.3	1500	11.542	416.2	36.5	116.2	152.7
1600	11.587	478.3	52.1	166.5	218.5	1600	11.680	435.7	38.2	123.5	161.8
1700	11.718	498.7	54.3	176.1	230.4	1700	11.801	454.6	39.9	130.6	170.5
1800	11.832	518.7	56.4	185.4	241.9	1800	11.907	473.1	41.5	137.4	178.9
1900	11.932	538.2	58.6	194.5	253.0	1900	12.001	491.0	43.1	144.1	187.2
2000	12.021	557.3	60.6	203.3	263.9	2000	12.083	508.6	44.6	150.5	195.2
2100	12.100	576.0	62.7	211.8	274.5	2100	12.156	525.9	46.1	156.8	203.0
2200	12.170	594.4	64.7	220.2	284.8	2200	12.222	542.8	47.6	163.0	210.6
2300	12.232	612.4	66.6	228.3	294.9	2300	12.280	559.4	49.1	169.0	218.0
2400	12.288	630.1	68.6	236.2	304.8	2400	12.332	575.7	50.5	174.8	225.3
2500	12.338	647.4	70.5	244.0	314.5	2500	12.379	591.8	51.9	180.6	232.5
2600	12.384	664.5	72.3	251.6	323.9	2600	12.421	607.6	53.3	186.2	239.5
2700	12.425	681.3	74.1	259.0	333.1	2700	12.460	623.1	54.7	191.7	246.3
2800	12.462	697.8	75.9	266.3	342.2	2800	12.494	638.4	56.0	197.0	253.0
2900	12.495	714.0	77.7	273.4	351.1	2900	12.526	653.4	57.3	202.3	259.6
3000	12.526	730.0	79.4	280.4	359.8	3000	12.555	668.2	58.6	207.5	266.1
3100	12.554	745.7	81.1	287.2	368.3	3100	12.581	682.8	59.9	212.6	272.5
3200	12.580	761.2	82.8	293.9	376.7	3200	12.605	697.2	61.2	217.6	278.7
3300	12.603	776.5	84.5	300.5	385.0	3300	12.627	711.3	62.4	222.5	284.9
3400	12.625	791.6	86.1	307.0	393.1	3400	12.647	725.3	63.6	227.3	290.9
3500	12.645	806.4	87.8	313.4	401.2	3500	12.666	739.1	64.8	232.0	296.9
3600	12.664	821.2	89.4	319.7	409.1	3600	12.684	752.7	66.0	236.7	302.8
3700	12.681	835.7	90.9	325.9	416.9	3700	12.700	766.1	67.2	241.3	308.5
3800	12.696	850.1	92.5	332.0	424.6	3800	12.714	779.4	68.4	245.9	314.3
3900	12.711	864.4	94.1	338.1	432.2	3900	12.728	792.6	69.5	250.3	319.9
4000	12.725	878.5	95.6	344.1	439.7	4000	12.741	805.5	70.7	254.8	325.4
4100	12.738	892.6	97.1	350.0	447.2	4100	12.753	818.4	71.8	259.1	330.9
4200	12.749	906.5	98.6	355.9	454.6	4200	12.764	831.1	72.9	263.5	336.4
4300	12.761	920.4	100.2	361.7	461.9	4300	12.775	843.8	74.0	267.7	341.8
4400	12.771	934.1	101.7	367.5	469.2	4400	12.784	856.3	75.1	272.0	347.1
4500	12.781	947.9	103.2	373.3	476.4	4500	12.794	868.7	76.2	276.2	352.4
4600	12.790	961.5	104.6	379.0	483.6	4600	12.802	881.0	77.3	280.3	357.6
4700	12.798	975.2	106.1	384.7	490.8	4700	12.810	893.3	78.4	284.4	362.8
4800	12.806	988.8	107.6	390.4	498.0	4800	12.818	905.5	79.4	288.5	368.0
4900	12.814	1002.4	109.1	396.1	505.1	4900	12.825	917.7	80.5	292.6	373.1
5000	12.821	1016.1	110.6	401.7	512.3	5000	12.832	929.8	81.6	296.7	378.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CH_2F_2						CH_2I_2					
$M = 52.03$, $\sigma = 4.08$, $\epsilon/k = 318$						$M = 267.85$, $\sigma = 5.16$, $\epsilon/k = 630$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.029	42.3	6.1	3.3	9.3	100	4.826	----	---	---	---
200	4.413	81.1	11.6	7.8	19.4	200	5.827	85.2	2.4	2.8	5.1
300	5.173	122.5	17.6	16.5	34.1	300	6.956	123.1	3.4	5.4	8.8
400	6.148	162.9	23.3	30.0	53.3	400	7.914	163.6	4.6	8.7	13.2
500	7.093	201.0	28.8	46.6	75.3	500	8.659	205.3	5.7	12.4	18.1
600	7.910	236.5	33.9	64.5	98.4	600	9.238	247.0	6.9	16.3	23.2
700	8.595	269.5	38.6	82.8	121.4	700	9.705	288.0	8.0	20.3	28.3
800	9.167	300.5	43.0	101.0	144.0	800	10.094	328.2	9.1	24.4	33.5
900	9.647	329.8	47.2	118.8	166.1	900	10.425	367.2	10.2	28.5	38.7
1000	10.052	357.6	51.2	136.2	187.4	1000	10.710	404.8	11.3	32.6	43.8
1100	10.396	384.2	55.0	153.0	208.0	1100	10.958	441.1	12.3	36.5	48.8
1200	10.690	409.7	58.7	169.2	227.8	1200	11.172	476.0	13.2	40.4	53.7
1300	10.941	434.2	62.2	184.8	247.0	1300	11.359	509.7	14.2	44.2	58.4
1400	11.156	457.8	65.6	199.8	265.4	1400	11.522	542.3	15.1	47.9	63.0
1500	11.342	480.6	68.8	214.2	283.1	1500	11.665	573.8	16.0	51.5	67.5
1600	11.503	502.7	72.0	228.2	300.2	1600	11.789	604.5	16.8	55.0	71.8
1700	11.643	524.1	75.1	241.6	316.7	1700	11.898	634.3	17.6	58.4	76.0
1800	11.766	545.1	78.1	254.7	332.7	1800	11.995	663.3	18.5	61.7	80.1
1900	11.873	565.6	81.0	267.3	348.3	1900	12.080	691.6	19.2	64.9	84.1
2000	11.968	585.7	83.9	279.6	363.5	2000	12.155	719.2	20.0	68.0	88.0
2100	12.052	605.4	86.7	291.5	378.2	2100	12.222	746.2	20.8	71.0	91.8
2200	12.126	624.7	89.5	303.2	392.6	2200	12.282	772.6	21.5	74.0	95.5
2300	12.193	643.6	92.2	314.5	406.7	2300	12.335	798.4	22.2	76.9	99.1
2400	12.252	662.2	94.8	325.6	420.4	2400	12.383	823.6	22.9	79.7	102.6
2500	12.305	680.4	97.5	336.4	433.8	2500	12.426	848.4	23.6	82.5	106.1
2600	12.353	698.4	100.0	346.9	446.9	2600	12.465	872.9	24.3	85.2	109.5
2700	12.396	716.0	102.6	357.2	459.8	2700	12.500	896.8	25.0	87.8	112.8
2800	12.435	733.3	105.0	367.3	472.4	2800	12.532	920.3	25.6	90.4	116.0
2900	12.471	750.4	107.5	377.2	484.7	2900	12.561	943.3	26.2	92.9	119.2
3000	12.503	767.2	109.9	386.9	496.8	3000	12.588	966.0	26.9	95.4	122.3
3100	12.533	783.7	112.2	396.4	508.7	3100	12.612	988.3	27.5	97.9	125.4
3200	12.560	800.0	114.6	405.7	520.3	3200	12.634	1010.2	28.1	100.3	128.4
3300	12.585	816.0	116.9	414.9	531.8	3300	12.655	1031.9	28.7	102.6	131.3
3400	12.607	831.9	119.2	423.9	543.1	3400	12.673	1053.4	29.3	105.0	134.3
3500	12.628	847.5	121.4	432.8	554.2	3500	12.691	1074.5	29.9	107.2	137.1
3600	12.648	863.0	123.6	441.5	565.1	3600	12.707	1095.5	30.5	109.5	140.0
3700	12.666	878.3	125.8	450.1	575.9	3700	12.722	1116.1	31.1	111.7	142.8
3800	12.682	893.4	128.0	458.6	586.6	3800	12.735	1136.6	31.6	113.9	145.6
3900	12.698	908.4	130.1	467.1	597.2	3900	12.748	1156.9	32.2	116.1	148.3
4000	12.712	923.3	132.2	475.4	607.6	4000	12.760	1176.9	32.7	118.3	151.0
4100	12.725	938.0	134.4	483.6	617.9	4100	12.771	1196.8	33.3	120.4	153.7
4200	12.738	952.7	136.5	491.7	628.2	4200	12.781	1216.4	33.8	122.5	156.3
4300	12.750	967.2	138.5	499.8	638.4	4300	12.791	1235.9	34.4	124.6	158.9
4400	12.760	981.7	140.6	507.8	648.5	4400	12.800	1255.2	34.9	126.6	161.5
4500	12.771	996.2	142.7	515.8	658.5	4500	12.809	1274.3	35.5	128.6	164.1
4600	12.780	1010.5	144.7	523.8	668.5	4600	12.816	1293.2	36.0	130.7	166.6
4700	12.789	1024.9	146.8	531.7	678.4	4700	12.824	1311.9	36.5	132.6	169.1
4800	12.798	1039.2	148.8	539.5	688.4	4800	12.831	1330.5	37.0	134.6	171.6
4900	12.806	1053.5	150.9	547.4	698.3	4900	12.838	1348.9	37.5	136.6	174.1
5000	12.813	1067.8	152.9	555.2	708.2	5000	12.844	1367.1	38.0	138.5	176.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CH_3Br						CH_3Cl					
$M = 94.95$, $\sigma = 4.118$, $\epsilon/k = 449.2$						$M = 50.49$, $\sigma = 4.182$, $\epsilon/k = 350$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.012	49.7	3.9	2.1	6.0	100	4.003	38.3	5.7	3.0	8.6
200	4.358	91.2	7.2	4.7	11.8	200	4.226	72.5	10.7	6.5	17.2
300	5.123	135.9	10.7	9.8	20.5	300	4.910	109.4	16.1	13.7	29.8
400	6.008	182.2	14.3	17.7	31.9	400	5.785	145.9	21.5	24.9	46.4
500	6.826	227.7	17.9	27.2	45.1	500	6.626	180.9	26.7	38.8	65.5
600	7.536	272.0	21.3	37.8	59.2	600	7.367	213.8	31.6	54.1	85.6
700	8.150	314.2	24.7	49.0	73.7	700	8.010	244.5	36.1	70.0	106.1
800	8.684	354.3	27.8	60.5	88.3	800	8.570	273.4	40.4	86.2	126.6
900	9.153	392.4	30.8	72.1	102.9	900	9.060	300.8	44.4	102.5	146.9
1000	9.565	428.7	33.6	83.7	117.3	1000	9.489	326.8	48.2	118.7	166.9
1100	9.927	463.4	36.4	95.1	131.5	1100	9.864	351.6	51.9	134.5	186.4
1200	10.244	496.7	39.0	106.3	145.3	1200	10.192	375.4	55.4	150.0	205.5
1300	10.522	528.8	41.5	117.2	158.7	1300	10.478	398.3	58.8	165.1	223.9
1400	10.765	559.8	43.9	127.8	171.8	1400	10.727	420.4	62.0	179.7	241.7
1500	10.978	589.8	46.3	138.1	184.4	1500	10.946	441.8	65.2	193.9	259.1
1600	11.165	618.8	48.6	148.1	196.7	1600	11.137	462.5	68.3	207.5	275.8
1700	11.329	647.0	50.8	157.8	208.6	1700	11.305	482.5	71.2	220.7	292.0
1800	11.474	674.4	52.9	167.2	220.2	1800	11.453	502.0	74.1	233.5	307.6
1900	11.603	701.3	55.0	176.4	231.4	1900	11.584	521.1	76.9	245.9	322.8
2000	11.716	727.3	57.1	185.2	242.3	2000	11.700	539.7	79.7	258.0	337.6
2100	11.818	752.7	59.1	193.8	252.8	2100	11.803	558.0	82.4	269.7	352.0
2200	11.908	777.6	61.0	202.1	263.1	2200	11.895	575.9	85.0	281.1	366.1
2300	11.989	801.9	62.9	210.2	273.1	2300	11.977	593.5	87.6	292.2	379.8
2400	12.061	825.8	64.8	218.1	282.9	2400	12.051	610.8	90.2	303.1	393.2
2500	12.127	849.2	66.7	225.9	292.5	2500	12.117	627.8	92.7	313.7	406.3
2600	12.186	872.3	68.5	233.4	301.9	2600	12.177	644.5	95.1	324.0	419.2
2700	12.239	895.1	70.3	240.8	311.1	2700	12.231	660.9	97.6	334.2	431.7
2800	12.288	917.5	72.0	248.1	320.1	2800	12.280	677.1	99.9	344.1	444.0
2900	12.332	939.6	73.7	255.2	329.0	2900	12.325	693.0	102.3	353.8	456.1
3000	12.372	961.4	75.5	262.2	337.7	3000	12.366	708.7	104.6	363.3	467.9
3100	12.409	982.9	77.1	269.1	346.2	3100	12.403	724.1	106.9	372.6	479.5
3200	12.443	1004.1	78.8	275.8	354.6	3200	12.437	739.4	109.1	381.7	490.9
3300	12.474	1025.0	80.4	282.4	362.9	3300	12.469	754.4	111.3	390.7	502.0
3400	12.503	1045.6	82.1	289.0	371.0	3400	12.498	769.1	113.5	399.5	513.0
3500	12.529	1066.0	83.7	295.4	379.0	3500	12.524	783.7	115.7	408.2	523.8
3600	12.553	1086.2	85.2	301.7	386.9	3600	12.549	798.1	117.8	416.7	534.5
3700	12.576	1106.1	86.8	307.9	394.7	3700	12.572	812.4	119.9	425.1	545.0
3800	12.597	1125.7	88.4	314.0	402.4	3800	12.593	826.4	122.0	433.3	555.3
3900	12.616	1145.1	89.9	320.0	409.9	3900	12.613	840.3	124.0	441.5	565.5
4000	12.634	1164.3	91.4	326.0	417.4	4000	12.631	854.1	126.1	449.5	575.6
4100	12.651	1183.3	92.9	331.8	424.7	4100	12.648	867.7	128.1	457.5	585.5
4200	12.667	1202.1	94.3	337.6	432.0	4200	12.664	881.2	130.1	465.3	595.4
4300	12.681	1220.6	95.8	343.3	439.1	4300	12.679	894.6	132.0	473.1	605.1
4400	12.695	1239.0	97.2	349.0	446.2	4400	12.692	907.9	134.0	480.8	614.8
4500	12.708	1257.2	98.7	354.5	453.2	4500	12.705	921.1	135.9	488.4	624.3
4600	12.720	1275.2	100.1	360.0	460.1	4600	12.718	934.2	137.9	495.9	633.8
4700	12.732	1293.0	101.5	365.5	467.0	4700	12.729	947.2	139.8	503.4	643.2
4800	12.742	1310.6	102.9	370.9	473.7	4800	12.740	960.2	141.7	510.8	652.5
4900	12.752	1328.1	104.2	376.2	480.4	4900	12.750	973.1	143.6	518.2	661.8
5000	12.762	1345.5	105.6	381.4	487.0	5000	12.760	986.0	145.5	525.6	671.1

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CH_3F						CH_3I					
$M = 34.04$, $\sigma = 3.73$, $\epsilon/k = 333$						$M = 141.94$, $\sigma = 4.23$, $\epsilon/k = 519$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.000	40.3	8.8	4.7	13.5	100	4.029	55.1	2.9	1.6	4.5
200	4.066	76.7	16.8	9.3	26.0	200	4.491	99.4	5.2	3.7	8.9
300	4.511	115.8	25.4	17.9	43.3	300	5.318	146.3	7.7	7.6	15.3
400	5.292	154.2	33.8	33.2	66.9	400	6.204	195.9	10.3	13.4	23.7
500	6.146	190.8	41.8	53.6	95.4	500	7.000	245.7	12.9	20.4	33.3
600	6.940	224.9	49.2	77.0	126.2	600	7.683	294.4	15.5	28.2	43.7
700	7.646	256.8	56.2	101.8	158.1	700	8.271	341.9	17.9	36.5	54.4
800	8.265	286.7	62.8	127.4	190.1	800	8.786	387.5	20.3	45.0	65.4
900	8.805	315.0	69.0	153.0	222.0	900	9.238	431.0	22.6	53.7	76.3
1000	9.275	341.9	74.8	178.5	253.3	1000	9.637	472.7	24.8	62.3	87.2
1100	9.683	367.6	80.5	203.5	284.0	1100	9.986	512.5	26.9	70.9	97.8
1200	10.038	392.2	85.9	227.8	313.7	1200	10.296	550.9	28.9	79.4	108.3
1300	10.346	415.8	91.0	251.4	342.5	1300	10.567	587.8	30.9	87.6	118.5
1400	10.613	438.8	96.1	274.3	370.4	1400	10.804	623.4	32.7	95.7	128.4
1500	10.847	460.8	100.9	296.4	397.3	1500	11.012	658.0	34.5	103.5	138.1
1600	11.050	482.1	105.5	317.7	423.2	1600	11.195	691.5	36.3	111.1	147.4
1700	11.228	502.8	110.1	338.2	448.3	1700	11.356	724.0	38.0	118.5	156.5
1800	11.385	523.0	114.5	358.1	472.6	1800	11.499	755.7	39.7	125.7	165.4
1900	11.523	542.8	118.8	377.4	496.3	1900	11.624	786.5	41.3	132.6	173.9
2000	11.645	562.1	123.1	396.2	519.2	2000	11.736	816.6	42.9	139.4	182.3
2100	11.754	581.1	127.2	414.4	541.6	2100	11.836	846.0	44.4	146.0	190.4
2200	11.850	599.7	131.3	432.1	563.4	2200	11.924	874.8	45.9	152.4	198.3
2300	11.936	617.9	135.3	449.3	584.6	2300	12.004	903.0	47.4	158.6	206.0
2400	12.013	635.9	139.2	466.2	605.4	2400	12.075	930.4	48.9	164.7	213.5
2500	12.083	653.5	143.1	482.6	625.6	2500	12.140	957.4	50.3	170.6	220.8
2600	12.145	670.8	146.9	498.6	645.4	2600	12.198	983.8	51.7	176.3	228.0
2700	12.202	687.8	150.6	514.2	664.8	2700	12.250	1009.8	53.0	182.0	235.0
2800	12.253	704.5	154.2	529.5	683.8	2800	12.298	1035.4	54.4	187.5	241.9
2900	12.300	721.0	157.8	544.5	702.3	2900	12.342	1060.7	55.7	192.9	248.6
3000	12.342	737.2	161.4	559.2	720.6	3000	12.381	1085.5	57.0	198.2	255.2
3100	12.381	753.2	164.9	573.5	738.4	3100	12.418	1110.1	58.3	203.5	261.7
3200	12.417	768.9	168.3	587.6	755.9	3200	12.451	1134.3	59.6	208.6	268.2
3300	12.449	784.4	171.7	601.4	773.2	3300	12.481	1158.3	60.8	213.7	274.5
3400	12.479	799.7	175.1	615.0	790.1	3400	12.509	1181.9	62.1	218.6	280.7
3500	12.507	814.8	178.4	628.4	806.7	3500	12.535	1205.3	63.3	223.5	286.8
3600	12.533	829.7	181.6	641.5	823.1	3600	12.559	1228.4	64.5	228.4	292.9
3700	12.556	844.5	184.9	654.4	839.3	3700	12.582	1251.2	65.7	233.1	298.8
3800	12.578	859.0	188.1	667.2	855.2	3800	12.602	1273.8	66.9	237.8	304.7
3900	12.599	873.5	191.2	679.7	871.0	3900	12.621	1296.1	68.1	242.4	310.5
4000	12.618	887.7	194.3	692.2	886.5	4000	12.639	1318.2	69.2	247.0	316.2
4100	12.635	901.9	197.4	704.4	901.9	4100	12.656	1340.0	70.4	251.5	321.9
4200	12.652	915.9	200.5	716.6	917.1	4200	12.671	1361.6	71.5	256.0	327.4
4300	12.667	929.9	203.6	728.6	932.1	4300	12.686	1383.0	72.6	260.3	333.0
4400	12.682	943.7	206.6	740.5	947.1	4400	12.699	1404.2	73.7	264.7	338.4
4500	12.695	957.5	209.6	752.3	961.9	4500	12.712	1425.1	74.8	269.0	343.8
4600	12.708	971.2	212.6	764.0	976.6	4600	12.724	1445.8	75.9	273.2	349.1
4700	12.720	984.9	215.6	775.6	991.2	4700	12.735	1466.3	77.0	277.4	354.3
4800	12.731	998.5	218.6	787.2	1005.8	4800	12.746	1486.6	78.1	281.5	359.5
4900	12.742	1012.0	221.6	798.7	1020.3	4900	12.756	1506.7	79.1	285.6	364.7
5000	12.752	1025.6	224.5	810.2	1034.7	5000	12.765	1526.7	80.2	289.6	369.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CH_3OH						CH_4					
$M = 32.04$, $\sigma = 3.626$, $\epsilon/k = 481.8$						$M = 16.04$, $\sigma = 3.758$, $\epsilon/k = 148.6$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.323	36.4	8.5	5.4	13.9	100	4.000	38.9	18.1	9.5	27.6
200	4.830	66.3	15.4	12.6	28.1	200	4.026	77.8	36.1	19.4	55.5
300	5.531	98.2	22.8	24.4	47.2	300	4.295	112.1	52.1	32.9	85.0
400	6.530	131.6	30.6	43.4	74.1	400	4.871	141.8	65.9	55.0	120.9
500	7.563	164.9	38.3	68.3	106.7	500	5.574	168.4	78.2	84.6	162.9
600	8.502	197.2	45.9	96.9	142.8	600	6.282	192.5	89.4	119.1	208.5
700	9.327	228.5	53.1	127.7	180.9	700	6.951	214.8	99.8	156.4	256.2
800	10.051	258.3	60.1	159.7	219.8	800	7.569	235.6	109.5	195.3	304.8
900	10.686	286.7	66.7	192.1	258.8	900	8.131	255.4	118.7	235.2	353.8
1000	11.245	313.7	73.0	224.6	297.6	1000	8.635	274.3	127.4	275.2	402.7
1100	11.735	339.6	79.0	256.8	335.8	1100	9.084	292.4	135.9	314.9	450.8
1200	12.165	364.5	84.8	288.4	373.2	1200	9.482	309.9	144.0	353.8	497.8
1300	12.543	388.5	90.4	319.4	409.8	1300	9.832	326.7	151.8	391.7	543.5
1400	12.875	411.6	95.7	349.6	445.4	1400	10.140	342.9	159.3	428.4	587.8
1500	13.167	434.0	100.9	379.0	480.0	1500	10.410	358.6	166.6	463.9	630.5
1600	13.424	455.7	106.0	407.6	513.6	1600	10.649	373.9	173.7	498.2	671.9
1700	13.650	476.8	110.9	435.3	546.2	1700	10.859	388.7	180.6	531.3	711.9
1800	13.851	497.3	115.7	462.2	577.9	1800	11.044	403.2	187.3	563.4	750.7
1900	14.029	517.3	120.3	488.3	608.6	1900	11.208	417.4	193.9	594.5	788.4
2000	14.187	536.9	124.9	513.7	638.6	2000	11.354	431.4	200.4	624.7	825.1
2100	14.328	555.9	129.3	538.3	667.6	2100	11.483	445.3	206.9	654.2	861.0
2200	14.454	574.5	133.6	562.3	695.9	2200	11.599	459.0	213.3	683.1	896.3
2300	14.567	592.7	137.9	585.5	723.4	2300	11.703	472.7	219.6	711.5	931.1
2400	14.668	610.5	142.0	608.2	750.2	2400	11.796	486.3	226.0	739.4	965.3
2500	14.760	628.0	146.1	630.3	776.4	2500	11.880	499.5	232.1	766.2	998.3
2600	14.843	645.2	150.1	652.0	802.0	2600	11.955	512.5	238.1	792.5	1030.6
2700	14.918	662.1	154.0	673.1	827.1	2700	12.024	525.3	244.1	818.2	1062.2
2800	14.987	678.8	157.9	693.9	851.8	2800	12.086	537.9	249.9	843.3	1093.2
2900	15.049	695.2	161.7	714.2	875.9	2900	12.143	550.3	255.7	867.9	1123.6
3000	15.106	711.4	165.5	734.2	899.7	3000	12.194	562.6	261.4	892.0	1153.4
3100	15.158	727.4	169.2	753.8	923.0	3100	12.242	574.8	267.0	915.7	1182.7
3200	15.206	743.2	172.9	773.1	945.9	3200	12.285	586.7	272.6	938.9	1211.5
3300	15.250	758.8	176.5	792.0	968.5	3300	12.325	598.6	278.1	961.8	1239.9
3400	15.290	774.2	180.1	810.7	990.7	3400	12.361	610.3	283.5	984.2	1267.8
3500	15.327	789.4	183.6	829.0	1012.6	3500	12.395	621.9	288.9	1006.4	1295.3
3600	15.362	804.4	187.1	847.1	1034.2	3600	12.427	633.3	294.2	1028.1	1322.4
3700	15.394	819.2	190.5	864.8	1055.4	3700	12.455	644.7	299.5	1049.6	1349.1
3800	15.424	833.9	194.0	882.3	1076.3	3800	12.482	655.9	304.7	1070.8	1375.5
3900	15.451	848.4	197.3	899.6	1096.9	3900	12.507	667.0	309.9	1091.6	1401.5
4000	15.477	862.7	200.7	916.6	1117.3	4000	12.530	678.0	315.0	1112.3	1427.3
4100	15.501	876.9	204.0	933.4	1137.4	4100	12.552	689.0	320.1	1132.6	1452.7
4200	15.523	890.9	207.2	950.0	1157.2	4200	12.572	699.8	325.1	1152.7	1477.8
4300	15.544	904.8	210.4	966.3	1176.7	4300	12.591	710.5	330.1	1172.6	1502.7
4400	15.564	918.5	213.6	982.4	1196.0	4400	12.609	721.2	335.0	1192.2	1527.2
4500	15.582	932.1	216.8	998.3	1215.1	4500	12.625	731.7	339.9	1211.6	1551.6
4600	15.599	945.5	219.9	1014.1	1234.0	4600	12.641	742.2	344.8	1230.8	1575.6
4700	15.616	958.8	223.0	1029.6	1252.6	4700	12.655	752.5	349.6	1249.9	1599.5
4800	15.631	972.0	226.1	1045.0	1271.0	4800	12.669	762.9	354.4	1268.7	1623.1
4900	15.645	985.1	229.1	1060.2	1289.3	4900	12.682	773.1	359.2	1287.3	1646.5
5000	15.659	998.0	232.1	1075.2	1307.3	5000	12.694	783.2	363.9	1305.8	1669.7

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CN						CO					
$M=26.02$, $\sigma=3.856$, $\epsilon/k=75.0$						$M=28.01$, $\sigma=3.690$, $\epsilon/k=91.7$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.501	66.2	19.0	6.7	25.6	100	3.501	68.2	18.1	6.4	24.5
200	3.501	121.0	34.7	12.2	46.9	200	3.501	128.8	34.3	12.1	46.3
300	3.507	164.3	47.1	16.7	63.7	300	3.505	177.5	47.2	16.7	63.9
400	3.537	201.2	57.6	21.0	78.7	400	3.529	219.1	58.3	21.1	79.4
500	3.601	234.3	67.1	26.0	93.1	500	3.583	255.9	68.1	26.0	94.1
600	3.687	264.7	75.8	31.7	107.5	600	3.661	289.8	77.1	31.5	108.6
700	3.780	292.9	83.9	37.8	121.7	700	3.749	321.4	85.5	37.6	123.1
800	3.870	319.4	91.5	44.1	135.6	800	3.837	351.1	93.4	44.0	137.4
900	3.951	344.4	98.6	50.4	149.0	900	3.918	379.2	100.9	50.4	151.2
1000	4.023	368.5	105.6	56.6	162.1	1000	3.991	405.8	108.0	56.7	164.6
1100	4.085	392.1	112.3	62.7	175.0	1100	4.054	431.4	114.8	62.8	177.6
1200	4.139	415.4	119.0	68.6	187.6	1200	4.110	456.2	121.4	68.8	190.1
1300	4.185	437.8	125.4	74.4	199.7	1300	4.158	480.4	127.8	74.6	202.4
1400	4.225	459.5	131.6	79.9	211.5	1400	4.199	504.4	134.2	80.3	214.4
1500	4.259	480.6	137.6	85.2	222.9	1500	4.235	528.0	140.5	85.8	226.3
1600	4.288	501.2	143.5	90.4	233.9	1600	4.266	550.8	146.5	91.1	237.7
1700	4.314	521.3	149.3	95.4	244.7	1700	4.294	573.0	152.5	96.3	248.7
1800	4.337	541.0	154.9	100.2	255.1	1800	4.318	594.8	158.2	101.3	259.5
1900	4.357	560.3	160.5	104.9	265.4	1900	4.339	616.1	163.9	106.1	270.0
2000	4.375	579.2	165.9	109.5	275.4	2000	4.358	637.0	169.5	110.8	280.3
2100	4.391	597.8	171.2	113.9	285.2	2100	4.375	657.5	174.9	115.4	290.4
2200	4.405	616.0	176.4	118.3	294.7	2200	4.390	677.6	180.3	119.9	300.2
2300	4.418	634.0	181.6	122.6	304.2	2300	4.404	697.4	185.5	124.3	309.9
2400	4.430	651.7	186.6	126.8	313.4	2400	4.416	716.9	190.7	128.6	319.4
2500	4.440	669.1	191.6	130.9	322.5	2500	4.427	736.1	195.8	132.8	328.7
2600	4.450	686.2	196.5	134.9	331.4	2600	4.437	755.0	200.9	137.0	337.9
2700	4.459	703.1	201.4	138.9	340.2	2700	4.447	773.6	205.8	141.1	346.9
2800	4.467	719.8	206.2	142.8	348.9	2800	4.456	792.0	210.7	145.1	355.8
2900	4.475	736.3	210.9	146.6	357.5	2900	4.464	810.2	215.6	149.0	364.6
3000	4.482	752.6	215.6	150.4	365.9	3000	4.471	828.1	220.3	152.9	373.2
3100	4.489	768.7	220.2	154.1	374.3	3100	4.478	845.9	225.0	156.7	381.8
3200	4.495	784.6	224.7	157.8	382.5	3200	4.485	863.4	229.7	160.5	390.2
3300	4.501	800.3	229.2	161.5	390.7	3300	4.491	880.7	234.3	164.2	398.5
3400	4.507	815.9	233.7	165.1	398.7	3400	4.497	897.8	238.9	167.9	406.8
3500	4.512	831.3	238.1	168.6	406.7	3500	4.502	914.8	243.4	171.5	414.9
3600	4.517	846.5	242.4	172.1	414.6	3600	4.508	931.5	247.8	175.2	423.0
3700	4.522	861.6	246.8	175.6	422.4	3700	4.513	948.2	252.3	178.7	431.0
3800	4.527	876.6	251.0	179.1	430.1	3800	4.517	964.6	256.6	182.2	438.9
3900	4.531	891.4	255.3	182.5	437.8	3900	4.522	980.9	261.0	185.7	446.7
4000	4.535	906.0	259.5	185.9	445.4	4000	4.526	997.1	265.3	189.2	454.5
4100	4.539	920.6	263.7	189.3	452.9	4100	4.531	1013.1	269.5	192.6	462.2
4200	4.543	935.0	267.8	192.6	460.4	4200	4.535	1028.9	273.8	196.0	469.8
4300	4.547	949.3	271.9	195.9	467.8	4300	4.538	1044.7	277.9	199.4	477.4
4400	4.551	963.5	275.9	199.2	475.1	4400	4.542	1060.3	282.1	202.8	484.9
4500	4.555	977.5	280.0	202.5	482.4	4500	4.546	1075.7	286.2	206.1	492.3
4600	4.558	991.5	284.0	205.7	489.7	4600	4.549	1091.1	290.3	209.4	499.7
4700	4.561	1005.3	287.9	208.9	496.9	4700	4.553	1106.3	294.3	212.7	507.0
4800	4.565	1019.1	291.9	212.1	504.0	4800	4.556	1121.5	298.4	215.9	514.3
4900	4.568	1032.7	295.8	215.3	511.1	4900	4.559	1136.5	302.4	219.2	521.5
5000	4.571	1046.2	299.6	218.5	518.1	5000	4.563	1151.4	306.3	222.4	528.7

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

COS						CO_2					
$M = 60.08$, $\sigma = 4.130$, $\epsilon/k = 336.0$						$M = 44.01$, $\sigma = 3.941$, $\epsilon/k = 195.2$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.561	43.5	5.4	2.0	7.4	100	3.512	51.1	8.7	3.1	11.7
200	4.265	82.7	10.3	6.4	16.6	200	3.881	102.8	17.4	8.5	25.9
300	5.002	124.9	15.5	13.6	29.1	300	4.460	152.0	25.7	17.8	43.5
400	5.515	166.4	20.6	21.9	42.5	400	4.952	196.0	33.2	28.6	61.8
500	5.881	206.0	25.5	30.4	56.0	500	5.346	235.4	39.9	39.9	79.8
600	6.164	242.9	30.1	38.9	69.0	600	5.669	271.4	46.0	51.3	97.2
700	6.391	277.4	34.4	47.1	81.5	700	5.938	304.8	51.6	62.4	114.1
800	6.576	309.8	38.4	55.1	93.6	800	6.163	335.9	56.9	73.3	130.2
900	6.728	340.5	42.2	62.8	105.1	900	6.351	365.3	61.9	83.8	145.7
1000	6.854	369.6	45.8	70.3	116.1	1000	6.509	393.1	66.6	93.9	160.5
1100	6.959	397.4	49.3	77.4	126.7	1100	6.643	419.7	71.1	103.6	174.7
1200	7.047	424.1	52.6	84.2	136.8	1200	6.756	445.4	75.4	113.0	188.4
1300	7.122	449.7	55.8	90.8	146.5	1300	6.852	470.2	79.6	122.0	201.6
1400	7.186	474.5	58.9	97.1	155.9	1400	6.934	494.2	83.7	130.6	214.3
1500	7.241	498.4	61.8	103.2	165.0	1500	7.004	517.6	87.6	138.9	226.6
1600	7.289	521.5	64.7	109.0	173.7	1600	7.065	540.2	91.5	147.0	238.5
1700	7.331	544.0	67.5	114.7	182.2	1700	7.118	562.3	95.2	154.8	250.0
1800	7.369	565.8	70.2	120.3	190.5	1800	7.164	583.7	98.8	162.3	261.1
1900	7.402	587.2	72.8	125.7	198.5	1900	7.205	604.6	102.4	169.6	272.0
2000	7.432	608.2	75.4	131.0	206.4	2000	7.242	625.1	105.8	176.7	282.5
2100	7.459	628.7	78.0	136.1	214.1	2100	7.274	645.0	109.2	183.5	292.8
2200	7.484	648.8	80.5	141.2	221.7	2200	7.303	664.6	112.5	190.3	302.8
2300	7.507	668.6	82.9	146.2	229.1	2300	7.329	683.8	115.8	196.8	312.6
2400	7.529	688.0	85.3	151.1	236.4	2400	7.353	702.7	119.0	203.3	322.3
2500	7.549	707.1	87.7	155.9	243.6	2500	7.375	721.3	122.1	209.6	331.7
2600	7.567	725.8	90.0	160.6	250.6	2600	7.395	739.8	125.3	215.8	341.1
2700	7.585	744.2	92.3	165.2	257.5	2700	7.413	758.0	128.4	222.0	350.3
2800	7.601	762.4	94.6	169.8	264.4	2800	7.430	776.2	131.4	228.1	359.5
2900	7.617	780.2	96.8	174.3	271.1	2900	7.445	794.2	134.5	234.1	368.6
3000	7.632	797.8	99.0	178.8	277.7	3000	7.460	812.2	137.5	240.1	377.7
3100	7.646	815.1	101.1	183.1	284.2	3100	7.474	830.2	140.6	246.1	386.7
3200	7.660	832.1	103.2	187.5	290.7	3200	7.486	847.8	143.6	252.0	395.5
3300	7.673	848.9	105.3	191.8	297.1	3300	7.499	865.1	146.5	257.7	404.2
3400	7.686	865.5	107.4	196.0	303.3	3400	7.510	882.1	149.4	263.4	412.8
3500	7.699	881.8	109.4	200.2	309.5	3500	7.521	899.0	152.2	269.0	421.2
3600	7.711	898.0	111.4	204.3	315.7	3600	7.531	915.7	155.0	274.6	429.6
3700	7.723	913.9	113.4	208.4	321.8	3700	7.541	932.2	157.8	280.1	437.9
3800	7.734	929.7	115.3	212.5	327.8	3800	7.550	948.5	160.6	285.5	446.1
3900	7.745	945.3	117.3	216.5	333.8	3900	7.559	964.7	163.3	290.9	454.2
4000	7.756	960.8	119.2	220.5	339.7	4000	7.568	980.7	166.1	296.2	462.3
4100	7.767	976.1	121.1	224.5	345.5	4100	7.576	996.6	168.7	301.5	470.3
4200	7.778	991.3	123.0	228.4	351.4	4200	7.584	1012.3	171.4	306.8	478.2
4300	7.788	1006.4	124.8	232.4	357.2	4300	7.592	1027.9	174.1	312.0	486.0
4400	7.798	1021.4	126.7	236.3	363.0	4400	7.599	1043.3	176.7	317.1	493.8
4500	7.808	1036.2	128.5	240.2	368.7	4500	7.606	1058.7	179.3	322.2	501.5
4600	7.818	1051.1	130.4	244.1	374.4	4600	7.614	1073.9	181.8	327.3	509.1
4700	7.828	1065.8	132.2	247.9	380.1	4700	7.620	1088.9	184.4	332.3	516.7
4800	7.838	1080.5	134.0	251.8	385.8	4800	7.627	1103.9	186.9	337.4	524.3
4900	7.847	1095.1	135.8	255.7	391.5	4900	7.634	1118.7	189.4	342.3	531.8
5000	7.857	1109.8	137.7	259.6	397.2	5000	7.640	1133.5	191.9	347.3	539.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CP						CS					
$M = 42.99$, $\sigma = 4.400$, $\epsilon/k = 227$						$M = 44.08$, $\sigma = 4.216$, $\epsilon/k = 199.4$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.501	37.8	6.6	2.3	8.9	100	3.501	44.2	7.5	2.6	10.1
200	3.513	75.5	13.1	4.7	17.8	200	3.510	89.0	15.0	5.3	20.4
300	3.600	112.8	19.6	7.6	27.1	300	3.586	131.7	22.3	8.5	30.8
400	3.747	147.1	25.5	11.2	36.7	400	3.725	170.1	28.8	12.4	41.2
500	3.895	178.0	30.9	15.2	46.0	500	3.870	204.6	34.6	16.7	51.3
600	4.020	206.4	35.8	19.1	54.9	600	3.995	236.0	39.9	21.0	60.9
700	4.118	232.7	40.3	23.0	63.3	700	4.095	265.2	44.8	25.2	70.0
800	4.194	257.3	44.6	26.6	71.2	800	4.174	292.4	49.4	29.1	78.5
900	4.254	280.4	48.6	30.0	78.6	900	4.235	318.1	53.8	32.8	86.6
1000	4.300	302.5	52.4	33.2	85.7	1000	4.284	342.3	57.9	36.3	94.2
1100	4.337	323.4	56.1	36.3	92.3	1100	4.322	365.6	61.8	39.6	101.5
1200	4.368	343.5	59.5	39.1	98.7	1200	4.354	388.0	65.6	42.8	108.4
1300	4.393	362.8	62.9	41.9	104.8	1300	4.380	409.6	69.3	45.8	115.1
1400	4.413	381.6	66.2	44.6	110.7	1400	4.402	430.6	72.8	48.7	121.5
1500	4.431	399.9	69.3	47.1	116.4	1500	4.420	451.0	76.2	51.5	127.8
1600	4.446	417.7	72.4	49.6	122.0	1600	4.436	470.8	79.6	54.2	133.8
1700	4.459	435.0	75.4	52.0	127.4	1700	4.449	490.1	82.9	56.8	139.7
1800	4.471	451.9	78.3	54.3	132.7	1800	4.461	508.8	86.0	59.4	145.4
1900	4.481	468.4	81.2	56.6	137.8	1900	4.472	527.1	89.1	61.9	151.0
2000	4.491	484.4	84.0	58.8	142.8	2000	4.481	544.9	92.1	64.3	156.4
2100	4.499	500.2	86.7	61.0	147.7	2100	4.490	562.3	95.1	66.6	161.7
2200	4.507	515.5	89.4	63.1	152.5	2200	4.498	579.4	98.0	68.9	166.8
2300	4.514	530.6	92.0	65.2	157.2	2300	4.505	596.2	100.8	71.1	171.9
2400	4.520	545.4	94.5	67.2	161.8	2400	4.511	612.7	103.6	73.3	176.9
2500	4.526	559.9	97.1	69.2	166.3	2500	4.518	628.9	106.3	75.5	181.8
2600	4.532	574.2	99.5	71.2	170.7	2600	4.523	644.9	109.0	77.7	186.7
2700	4.538	588.2	102.0	73.1	175.1	2700	4.529	660.8	111.7	79.8	191.5
2800	4.543	602.1	104.4	75.0	179.4	2800	4.534	676.6	114.4	81.9	196.3
2900	4.548	615.8	106.7	76.9	183.7	2900	4.539	692.2	117.0	84.0	201.0
3000	4.552	629.4	109.1	78.8	187.9	3000	4.543	707.8	119.7	86.1	205.7
3100	4.557	642.8	111.4	80.7	192.1	3100	4.548	723.4	122.3	88.1	210.4
3200	4.561	656.2	113.7	82.5	196.3	3200	4.552	738.9	124.9	90.2	215.2
3300	4.565	669.5	116.1	84.4	200.4	3300	4.556	754.0	127.5	92.2	219.7
3400	4.570	682.7	118.4	86.2	204.6	3400	4.560	768.9	130.0	94.2	224.2
3500	4.574	696.0	120.6	88.1	208.7	3500	4.564	783.6	132.5	96.2	228.7
3600	4.577	709.2	122.9	89.9	212.8	3600	4.567	798.1	134.9	98.2	233.1
3700	4.581	722.2	125.2	91.7	216.9	3700	4.571	812.5	137.4	100.1	237.5
3800	4.585	734.9	127.4	93.5	220.9	3800	4.575	826.8	139.8	102.1	241.9
3900	4.588	747.5	129.6	95.3	224.8	3900	4.578	840.9	142.2	104.0	246.2
4000	4.592	760.0	131.7	97.0	228.8	4000	4.582	854.9	144.5	105.9	250.4
4100	4.596	772.3	133.9	98.8	232.6	4100	4.585	868.7	146.9	107.8	254.7
4200	4.599	784.6	136.0	100.5	236.5	4200	4.589	882.4	149.2	109.7	258.9
4300	4.602	796.7	138.1	102.2	240.3	4300	4.592	896.0	151.5	111.6	263.0
4400	4.606	808.7	140.2	103.9	244.1	4400	4.595	909.5	153.8	113.4	267.2
4500	4.609	820.7	142.3	105.6	247.9	4500	4.599	922.9	156.0	115.3	271.3
4600	4.612	832.5	144.3	107.3	251.6	4600	4.602	936.1	158.3	117.1	275.4
4700	4.615	844.2	146.3	109.0	255.3	4700	4.606	949.3	160.5	119.0	279.5
4800	4.619	855.8	148.4	110.6	259.0	4800	4.610	962.3	162.7	120.8	283.5
4900	4.622	867.4	150.4	112.3	262.7	4900	4.613	975.3	164.9	122.6	287.5
5000	4.625	878.8	152.3	114.0	266.3	5000	4.617	988.1	167.1	124.5	291.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CS_2						C_2					
$M = 76.14$, $\sigma = 4.483$, $\epsilon/k = 467$						$M = 24.02$, $\sigma = 3.913$, $\epsilon/k = 78.8$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.726	37.1	3.6	1.6	5.2	100	3.580	60.4	18.7	7.1	25.9
200	4.759	67.7	6.6	5.3	11.9	200	4.866	111.3	34.5	28.8	63.3
300	5.494	100.7	9.9	10.4	20.2	300	5.184	151.6	47.0	44.4	91.5
400	5.968	134.9	13.2	16.1	29.3	400	4.769	186.0	57.7	46.1	103.8
500	6.309	168.8	16.5	22.2	38.7	500	4.468	216.7	67.2	46.6	113.8
600	6.566	201.8	19.8	28.3	48.0	600	4.331	244.9	76.0	49.0	125.0
700	6.763	233.6	22.9	34.3	57.2	700	4.285	271.2	84.1	52.9	137.0
800	6.915	263.7	25.8	40.1	65.9	800	4.283	295.9	91.8	57.6	149.4
900	7.035	292.4	28.6	45.7	74.3	900	4.300	319.1	99.0	62.7	161.8
1000	7.131	319.8	31.3	51.0	82.3	1000	4.326	341.4	105.9	68.1	174.0
1100	7.209	345.9	33.9	56.1	90.0	1100	4.357	363.1	112.6	73.6	186.3
1200	7.273	371.1	36.3	61.0	97.3	1200	4.389	384.4	119.3	79.3	198.5
1300	7.326	395.3	38.7	65.7	104.4	1300	4.422	405.3	125.8	85.1	210.8
1400	7.372	418.6	41.0	70.3	111.2	1400	4.456	425.5	132.0	90.9	222.9
1500	7.411	441.3	43.2	74.7	117.9	1500	4.490	445.1	138.1	96.7	234.8
1600	7.446	463.2	45.3	78.9	124.3	1600	4.524	464.2	144.0	102.6	246.6
1700	7.476	484.5	47.4	83.1	130.5	1700	4.558	482.8	149.8	108.5	258.3
1800	7.503	505.2	49.4	87.1	136.5	1800	4.592	501.1	155.5	114.5	269.9
1900	7.528	525.4	51.4	91.0	142.4	1900	4.624	519.0	161.0	120.4	281.4
2000	7.551	545.1	53.4	94.9	148.2	2000	4.656	536.5	166.4	126.3	292.7
2100	7.571	564.3	55.2	98.6	153.8	2100	4.686	553.7	171.8	132.2	304.0
2200	7.591	583.0	57.1	102.3	159.3	2200	4.714	570.6	177.0	138.0	315.0
2300	7.609	601.4	58.9	105.9	164.7	2300	4.741	587.3	182.2	143.7	325.9
2400	7.626	619.4	60.6	109.4	170.0	2400	4.767	603.6	187.3	149.4	336.7
2500	7.642	637.0	62.4	112.9	175.2	2500	4.790	619.8	192.3	155.0	347.3
2600	7.657	654.4	64.1	116.3	180.3	2600	4.812	635.7	197.2	160.5	357.7
2700	7.672	671.6	65.7	119.7	185.4	2700	4.832	651.3	202.1	165.9	368.0
2800	7.686	688.4	67.4	123.0	190.4	2800	4.851	666.8	206.9	171.2	378.1
2900	7.700	705.1	69.0	126.3	195.3	2900	4.868	682.1	211.6	176.4	388.0
3000	7.713	721.5	70.6	129.6	200.2	3000	4.883	697.2	216.3	181.4	397.7
3100	7.726	737.6	72.2	132.8	205.0	3100	4.897	712.1	220.9	186.4	407.3
3200	7.738	753.6	73.8	136.0	209.8	3200	4.909	726.8	225.5	191.2	416.7
3300	7.751	769.4	75.3	139.2	214.5	3300	4.920	741.4	230.0	195.9	426.0
3400	7.763	784.9	76.8	142.3	219.1	3400	4.930	755.8	234.5	200.6	435.1
3500	7.774	800.3	78.3	145.4	223.8	3500	4.939	770.1	238.9	205.1	444.0
3600	7.786	815.5	79.8	148.5	228.3	3600	4.946	784.2	243.3	209.5	452.8
3700	7.797	830.5	81.3	151.6	232.8	3700	4.953	798.2	247.6	213.8	461.4
3800	7.808	845.3	82.7	154.6	237.3	3800	4.959	812.0	251.9	218.0	470.0
3900	7.819	859.9	84.2	157.6	241.8	3900	4.964	825.7	256.2	222.2	478.3
4000	7.830	874.4	85.6	160.6	246.2	4000	4.968	839.3	260.4	226.2	486.6
4100	7.841	888.7	87.0	163.5	250.5	4100	4.971	852.8	264.6	230.2	494.7
4200	7.851	902.9	88.4	166.5	254.8	4200	4.974	866.1	268.7	234.1	502.8
4300	7.862	916.9	89.7	169.4	259.1	4300	4.977	879.4	272.8	237.9	510.7
4400	7.872	930.7	91.1	172.3	263.4	4400	4.979	892.5	276.9	241.6	518.5
4500	7.883	944.5	92.4	175.1	267.6	4500	4.980	905.5	280.9	245.3	526.2
4600	7.893	958.0	93.8	178.0	271.8	4600	4.981	918.5	285.0	248.9	533.8
4700	7.903	971.5	95.1	180.8	275.9	4700	4.982	931.3	288.9	252.4	541.4
4800	7.913	984.8	96.4	183.7	280.0	4800	4.982	944.0	292.9	255.9	548.8
4900	7.923	997.9	97.7	186.5	284.1	4900	4.983	956.6	296.8	259.4	556.2
5000	7.933	1011.0	99.0	189.3	288.2	5000	4.982	969.2	300.7	262.7	563.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

C_2H_2						C_2H_4					
$M = 26.04$, $\sigma = 4.033$, $\epsilon/k = 231.8$						$M = 28.05$, $\sigma = 4.162$, $\epsilon/k = 224.7$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.530	34.7	9.9	3.6	13.5	100	4.002	34.3	9.1	4.8	13.9
200	4.282	69.2	19.8	12.4	32.2	200	4.258	68.5	18.2	11.3	29.5
300	5.318	103.5	29.6	29.4	59.0	300	5.185	102.3	27.2	25.7	52.9
400	6.063	135.1	38.7	48.5	87.2	400	6.383	133.3	35.4	48.4	83.8
500	6.583	163.8	46.9	67.4	114.2	500	7.514	161.3	42.8	75.6	118.5
600	6.982	190.0	54.4	85.8	140.2	600	8.498	186.9	49.6	104.8	154.5
700	7.316	214.3	61.3	104.0	165.3	700	9.345	210.6	56.0	134.8	190.8
800	7.612	237.1	67.9	122.1	189.9	800	10.082	232.8	61.9	165.1	226.9
900	7.879	258.5	74.0	140.1	214.1	900	10.727	253.7	67.4	195.2	262.6
1000	8.122	279.0	79.8	158.0	237.8	1000	11.292	273.6	72.7	225.0	297.7
1100	8.342	298.3	85.4	175.6	261.0	1100	11.787	292.5	77.7	254.1	331.8
1200	8.541	316.9	90.7	192.9	283.6	1200	12.221	310.7	82.5	282.4	365.0
1300	8.720	334.8	95.8	209.8	305.6	1300	12.601	328.2	87.2	310.0	397.2
1400	8.879	352.2	100.8	226.3	327.1	1400	12.934	345.2	91.7	336.8	428.5
1500	9.022	369.1	105.6	242.5	348.1	1500	13.226	361.7	96.1	362.8	458.9
1600	9.150	385.5	110.3	258.3	368.6	1600	13.482	377.7	100.4	388.0	488.3
1700	9.263	401.6	114.9	273.6	388.5	1700	13.707	393.4	104.5	412.3	516.8
1800	9.365	417.2	119.4	288.5	407.9	1800	13.906	408.6	108.6	435.9	544.5
1900	9.455	432.4	123.8	303.0	426.7	1900	14.082	423.5	112.5	458.7	571.2
2000	9.537	447.3	128.0	317.1	445.1	2000	14.238	438.0	116.4	480.9	597.2
2100	9.610	461.9	132.2	330.8	463.0	2100	14.377	452.2	120.2	502.3	622.5
2200	9.675	476.1	136.2	344.1	480.4	2200	14.501	466.1	123.8	523.1	647.0
2300	9.734	490.0	140.2	357.1	497.3	2300	14.612	479.7	127.5	543.4	670.8
2400	9.787	503.7	144.2	369.8	513.9	2400	14.711	493.1	131.0	563.1	694.1
2500	9.835	517.1	148.0	382.1	530.1	2500	14.801	506.2	134.5	582.3	716.8
2600	9.879	530.3	151.8	394.2	546.0	2600	14.882	519.1	137.9	601.1	739.0
2700	9.919	543.3	155.5	406.0	561.5	2700	14.955	531.8	141.3	619.4	760.7
2800	9.955	556.1	159.2	417.6	576.8	2800	15.022	544.3	144.6	637.4	782.0
2900	9.988	568.8	162.8	429.0	591.8	2900	15.082	556.7	147.9	655.1	803.0
3000	10.018	581.3	166.4	440.2	606.6	3000	15.138	569.0	151.2	672.5	823.7
3100	10.046	593.7	169.9	451.3	621.2	3100	15.188	581.2	154.4	689.6	844.0
3200	10.071	606.0	173.4	462.2	635.6	3200	15.235	593.3	157.6	706.6	864.2
3300	10.095	618.2	176.9	473.0	649.9	3300	15.277	605.3	160.8	723.3	884.2
3400	10.116	630.4	180.4	483.7	664.1	3400	15.317	617.4	164.0	740.0	904.0
3500	10.136	642.5	183.9	494.3	678.2	3500	15.353	629.4	167.2	756.5	923.7
3600	10.155	654.7	187.4	504.8	692.2	3600	15.386	641.4	170.4	772.9	943.3
3700	10.172	666.8	190.8	515.4	706.2	3700	15.417	653.0	173.5	788.8	962.3
3800	10.188	678.6	194.2	525.5	719.8	3800	15.446	664.5	176.5	804.5	981.0
3900	10.203	690.2	197.5	535.6	733.1	3900	15.472	675.9	179.6	820.0	999.5
4000	10.217	701.8	200.8	545.5	746.4	4000	15.497	687.2	182.6	835.2	1017.8
4100	10.230	713.2	204.1	555.3	759.4	4100	15.520	698.3	185.5	850.3	1035.9
4200	10.242	724.5	207.3	565.0	772.3	4200	15.542	709.4	188.5	865.2	1053.7
4300	10.253	735.7	210.5	574.6	785.1	4300	15.562	720.4	191.4	880.0	1071.3
4400	10.263	746.8	213.7	584.1	797.8	4400	15.581	731.2	194.3	894.5	1088.8
4500	10.273	757.8	216.9	593.4	810.3	4500	15.599	742.0	197.1	908.9	1106.1
4600	10.283	768.8	220.0	602.7	822.7	4600	15.616	752.7	200.0	923.2	1123.2
4700	10.291	779.6	223.1	611.9	835.0	4700	15.631	763.3	202.8	937.3	1140.1
4800	10.300	790.3	226.2	621.0	847.2	4800	15.646	773.8	205.6	951.3	1156.9
4900	10.307	801.0	229.2	630.0	859.2	4900	15.660	784.2	208.4	965.1	1173.5
5000	10.315	811.6	232.3	638.9	871.2	5000	15.673	794.6	211.1	978.9	1190.0

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

C_2H_6						C_2N_2					
$M = 30.07$, $\sigma = 4.443$, $\epsilon/k = 215.7$						$M = 52.04$, $\sigma = 4.361$, $\epsilon/k = 348.6$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.313	31.7	7.9	5.0	12.9	100	4.378	35.8	5.1	3.4	8.5
200	5.016	63.6	15.8	14.0	29.7	200	5.883	67.8	9.7	11.6	21.3
300	6.227	94.7	23.5	30.8	54.2	300	6.839	102.3	14.7	22.4	37.0
400	7.809	123.0	30.5	57.0	87.4	400	7.433	136.5	19.5	33.9	53.5
500	9.390	148.5	36.8	89.2	126.0	500	7.858	169.2	24.2	45.7	69.9
600	10.822	171.8	42.6	124.7	167.3	600	8.205	199.9	28.6	57.5	86.1
700	12.087	193.4	47.9	161.7	209.7	700	8.504	228.6	32.7	69.2	101.9
800	13.201	213.6	52.9	199.4	252.3	800	8.763	255.6	36.6	80.7	117.3
900	14.180	232.6	57.7	237.1	294.7	900	8.986	281.1	40.3	91.9	132.2
1000	15.039	250.7	62.1	274.2	336.3	1000	9.177	305.4	43.7	102.8	146.5
1100	15.789	267.9	66.4	310.5	376.9	1100	9.339	328.6	47.1	113.3	160.3
1200	16.443	284.4	70.5	346.0	416.4	1200	9.477	350.9	50.2	123.4	173.6
1300	17.014	300.4	74.4	380.4	454.8	1300	9.594	372.2	53.3	133.1	186.4
1400	17.512	315.9	78.3	413.7	492.0	1400	9.694	392.8	56.3	142.5	198.7
1500	17.947	331.0	82.0	446.0	528.0	1500	9.779	412.8	59.1	151.5	210.6
1600	18.327	345.6	85.6	477.2	562.8	1600	9.853	432.1	61.9	160.2	222.0
1700	18.661	359.9	89.2	507.3	596.5	1700	9.916	450.8	64.6	168.5	233.1
1800	18.954	373.7	92.6	536.5	629.1	1800	9.971	469.0	67.2	176.6	243.8
1900	19.213	387.3	96.0	564.7	660.6	1900	10.019	486.8	69.7	184.5	254.2
2000	19.443	400.5	99.3	592.0	691.2	2000	10.061	504.2	72.2	192.2	264.4
2100	19.646	413.4	102.5	618.4	720.8	2100	10.097	521.3	74.7	199.6	274.3
2200	19.828	426.1	105.6	644.0	749.6	2200	10.130	538.0	77.0	206.9	284.0
2300	19.990	438.5	108.7	669.0	777.6	2300	10.159	554.5	79.4	214.1	293.5
2400	20.135	450.6	111.7	693.2	804.9	2400	10.185	570.6	81.7	221.0	302.8
2500	20.266	462.6	114.6	716.9	831.6	2500	10.208	586.5	84.0	227.9	311.9
2600	20.384	474.3	117.6	740.0	857.6	2600	10.228	602.1	86.2	234.6	320.8
2700	20.491	486.0	120.4	762.7	883.1	2700	10.247	617.5	88.4	241.1	329.5
2800	20.588	497.4	123.3	784.9	908.2	2800	10.263	632.6	90.6	247.5	338.1
2900	20.676	508.8	126.1	806.7	932.8	2900	10.279	647.4	92.7	253.9	346.6
3000	20.756	520.1	128.9	828.3	957.1	3000	10.292	662.1	94.8	260.1	354.9
3100	20.829	531.3	131.7	849.5	981.2	3100	10.305	676.5	96.9	266.1	363.0
3200	20.897	542.5	134.4	870.6	1005.0	3200	10.316	690.7	98.9	272.1	371.0
3300	20.958	553.6	137.2	891.4	1028.6	3300	10.327	704.7	100.9	278.0	378.9
3400	21.015	564.7	140.0	912.2	1052.1	3400	10.337	718.5	102.9	283.8	386.7
3500	21.067	575.7	142.7	932.5	1075.2	3500	10.345	732.1	104.8	289.5	394.4
3600	21.116	586.4	145.3	952.4	1097.7	3600	10.354	745.6	106.8	295.2	401.9
3700	21.160	597.1	148.0	971.9	1119.9	3700	10.361	758.9	108.7	300.7	409.4
3800	21.202	607.6	150.6	991.2	1141.8	3800	10.368	772.0	110.5	306.2	416.7
3900	21.241	617.9	153.1	1010.2	1163.4	3900	10.375	785.0	112.4	311.6	424.0
4000	21.276	628.2	155.7	1029.0	1184.7	4000	10.381	797.8	114.2	316.9	431.2
4100	21.310	638.4	158.2	1047.6	1205.8	4100	10.386	810.5	116.1	322.2	438.3
4200	21.341	648.5	160.7	1065.9	1226.7	4200	10.391	823.2	117.9	327.4	445.3
4300	21.370	658.6	163.2	1084.1	1247.3	4300	10.396	835.7	119.7	332.6	452.3
4400	21.397	668.5	165.7	1102.0	1267.7	4400	10.401	848.1	121.4	337.8	459.2
4500	21.423	678.3	168.1	1119.7	1287.8	4500	10.405	860.4	123.2	342.8	466.1
4600	21.447	688.1	170.5	1137.3	1307.8	4600	10.409	872.6	125.0	347.9	472.9
4700	21.470	697.8	172.9	1154.7	1327.6	4700	10.413	884.8	126.7	352.9	479.6
4800	21.491	707.4	175.3	1171.9	1347.2	4800	10.416	896.9	128.4	357.9	486.4
4900	21.511	716.9	177.7	1188.9	1366.6	4900	10.420	909.0	130.2	362.9	493.1
5000	21.529	726.3	180.0	1205.8	1385.8	5000	10.423	921.1	131.9	367.8	499.7

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CH_3OCH_3						CH_2CHCH_3					
$M = 46.07$, $\sigma = 4.307$, $\epsilon/k = 395.0$						$M = 42.08$, $\sigma = 4.678$, $\epsilon/k = 298.9$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.579	33.1	5.3	3.9	9.3	100	4.706	29.6	5.2	4.1	9.3
200	6.000	61.6	10.0	12.3	22.2	200	5.885	57.3	10.1	12.1	22.2
300	7.476	92.5	15.0	26.2	41.2	300	7.568	86.5	15.3	27.3	42.7
400	9.302	123.8	20.0	48.0	68.0	400	9.542	114.6	20.3	50.3	70.6
500	11.141	154.2	24.9	75.9	100.8	500	11.417	141.0	25.0	78.4	103.4
600	12.808	183.3	29.6	107.6	137.2	600	13.062	165.4	29.3	108.9	138.2
700	14.269	210.7	34.1	141.2	175.2	700	14.482	188.1	33.3	140.5	173.8
800	15.540	236.5	38.3	175.6	213.8	800	15.710	209.3	37.1	172.4	209.5
900	16.642	260.9	42.2	210.1	252.3	900	16.775	229.4	40.6	204.2	244.8
1000	17.597	284.2	46.0	244.3	290.3	1000	17.698	248.5	44.0	235.5	279.5
1100	18.422	306.4	49.6	277.8	327.4	1100	18.500	266.8	47.2	266.1	313.3
1200	19.136	327.8	53.0	310.5	363.5	1200	19.195	284.2	50.3	295.8	346.1
1300	19.754	348.4	56.3	342.2	398.6	1300	19.798	301.0	53.3	324.6	377.9
1400	20.290	368.2	59.6	372.9	432.5	1400	20.323	317.2	56.2	352.4	408.6
1500	20.755	387.3	62.7	402.6	465.2	1500	20.780	332.8	58.9	379.2	438.1
1600	21.160	405.9	65.7	431.3	496.9	1600	21.178	347.9	61.6	405.1	466.8
1700	21.515	424.0	68.6	459.0	527.6	1700	21.528	362.7	64.2	430.2	494.5
1800	21.825	441.5	71.4	485.8	557.2	1800	21.835	377.1	66.8	454.6	521.4
1900	22.099	458.5	74.2	511.7	585.8	1900	22.105	391.3	69.3	478.2	547.5
2000	22.340	475.1	76.9	536.8	613.6	2000	22.344	405.1	71.7	501.1	572.8
2100	22.554	491.4	79.5	561.1	640.6	2100	22.556	418.6	74.1	523.4	597.5
2200	22.744	507.4	82.1	584.8	666.9	2200	22.745	431.9	76.5	545.0	621.5
2300	22.914	523.0	84.6	607.9	692.5	2300	22.914	444.9	78.8	566.2	644.9
2400	23.066	538.4	87.1	630.5	717.6	2400	23.066	457.7	81.0	586.7	667.8
2500	23.203	553.6	89.5	652.5	742.1	2500	23.202	470.2	83.3	606.8	690.0
2600	23.326	568.4	92.0	674.1	766.0	2600	23.324	482.5	85.4	626.3	711.8
2700	23.437	583.1	94.3	695.2	789.5	2700	23.435	494.6	87.6	645.5	733.0
2800	23.538	597.6	96.7	715.8	812.5	2800	23.536	506.5	89.7	664.1	753.8
2900	23.630	611.8	99.0	736.0	835.0	2900	23.627	518.2	91.8	682.4	774.2
3000	23.713	625.8	101.2	755.9	857.1	3000	23.710	529.7	93.8	700.3	794.1
3100	23.789	639.6	103.5	775.4	878.8	3100	23.787	541.0	95.8	717.9	813.7
3200	23.859	653.2	105.7	794.5	900.1	3200	23.856	552.2	97.8	735.1	832.9
3300	23.923	666.7	107.8	813.2	921.1	3300	23.920	563.2	99.7	752.1	851.8
3400	23.982	679.9	110.0	831.7	941.7	3400	23.979	574.1	101.7	768.7	870.4
3500	24.037	693.0	112.1	849.8	961.9	3500	24.034	584.9	103.6	785.1	888.7
3600	24.087	705.9	114.2	867.6	981.8	3600	24.084	595.5	105.5	801.3	906.8
3700	24.133	718.6	116.2	885.2	1001.4	3700	24.130	606.1	107.3	817.2	924.6
3800	24.176	731.2	118.3	902.5	1020.8	3800	24.173	616.5	109.2	833.0	942.2
3900	24.216	743.7	120.3	919.5	1039.8	3900	24.213	626.9	111.0	848.6	959.6
4000	24.253	755.9	122.3	936.3	1058.6	4000	24.250	637.2	112.8	864.0	976.8
4100	24.288	768.1	124.2	952.9	1077.1	4100	24.285	647.5	114.7	879.3	993.9
4200	24.320	780.1	126.2	969.2	1095.4	4200	24.317	657.7	116.5	894.4	1010.9
4300	24.350	792.0	128.1	985.4	1113.5	4300	24.348	667.8	118.3	909.5	1027.8
4400	24.378	803.8	130.0	1001.3	1131.3	4400	24.376	677.9	120.1	924.5	1044.6
4500	24.405	815.5	131.9	1017.1	1149.0	4500	24.402	688.0	121.8	939.4	1061.3
4600	24.430	827.0	133.8	1032.7	1166.5	4600	24.427	698.1	123.6	954.3	1077.9
4700	24.453	838.5	135.6	1048.1	1183.7	4700	24.451	708.2	125.4	969.1	1094.5
4800	24.475	849.9	137.5	1063.4	1200.9	4800	24.473	718.3	127.2	983.9	1111.1
4900	24.495	861.2	139.3	1078.6	1217.9	4900	24.493	728.1	128.9	998.2	1127.1
5000	24.515	872.4	141.1	1093.6	1234.7	5000	24.513	737.8	130.7	1012.4	1143.0

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TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CH_3CCH						cyclo-C_3H_6					
$M = 40.06$, $\sigma = 4.761$, $\epsilon/k = 251.8$						$M = 42.08$, $\sigma = 4.807$, $\epsilon/k = 248.9$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.405	29.8	5.6	3.7	9.3	100	4.008	30.1	5.3	2.8	8.2
200	5.827	59.0	11.0	12.9	23.8	200	4.704	59.7	10.6	8.2	18.8
300	7.321	88.6	16.5	28.0	44.4	300	6.824	89.5	15.9	24.1	40.0
400	8.718	116.3	21.6	47.4	69.0	400	9.283	117.5	20.8	49.7	70.5
500	9.931	141.7	26.4	68.9	95.3	500	11.429	143.0	25.3	79.6	104.9
600	10.969	164.9	30.7	91.4	122.1	600	13.182	166.4	29.5	110.8	140.3
700	11.865	186.5	34.7	114.4	149.0	700	14.626	188.1	33.3	142.2	175.5
800	12.649	206.7	38.4	137.4	175.8	800	15.841	208.4	36.9	173.3	210.2
900	13.338	225.7	42.0	160.2	202.2	900	16.880	227.6	40.3	204.0	244.3
1000	13.944	243.8	45.3	182.7	228.0	1000	17.776	245.7	43.5	234.0	277.5
1100	14.475	261.1	48.6	204.7	253.3	1100	18.554	263.1	46.6	263.3	309.9
1200	14.941	277.6	51.6	226.1	277.8	1200	19.229	279.7	49.5	291.7	341.2
1300	15.349	293.4	54.6	246.9	301.5	1300	19.818	295.6	52.4	319.2	371.5
1400	15.707	308.8	57.4	267.0	324.5	1400	20.331	311.1	55.1	345.8	400.9
1500	16.020	323.7	60.2	286.5	346.8	1500	20.779	326.1	57.8	371.6	429.3
1600	16.295	338.2	62.9	305.5	368.4	1600	21.172	340.7	60.3	396.6	456.9
1700	16.537	352.3	65.5	323.9	389.4	1700	21.516	355.0	62.9	420.8	483.6
1800	16.750	366.2	68.1	341.7	409.8	1800	21.820	368.9	65.3	444.2	509.6
1900	16.939	379.6	70.6	359.0	429.6	1900	22.088	382.4	67.7	467.0	534.7
2000	17.107	392.8	73.1	375.7	448.8	2000	22.326	395.7	70.1	489.1	559.1
2100	17.256	405.7	75.5	392.0	467.5	2100	22.538	408.7	72.4	510.5	582.9
2200	17.389	418.4	77.8	407.9	485.7	2200	22.726	421.4	74.6	531.3	605.9
2300	17.508	430.7	80.1	423.3	503.4	2300	22.895	433.8	76.8	551.5	628.4
2400	17.615	442.9	82.4	438.3	520.7	2400	23.046	446.0	79.0	571.3	650.2
2500	17.711	454.7	84.6	452.9	537.5	2500	23.183	458.0	81.1	590.5	671.6
2600	17.798	466.4	86.8	467.2	554.0	2600	23.306	469.7	83.2	609.2	692.4
2700	17.877	477.9	88.9	481.2	570.1	2700	23.417	481.3	85.2	627.5	712.8
2800	17.949	489.2	91.0	494.9	585.9	2800	23.518	492.6	87.2	645.5	732.7
2900	18.014	500.3	93.1	508.3	601.3	2900	23.610	503.9	89.2	663.0	752.3
3000	18.073	511.3	95.1	521.4	616.5	3000	23.694	514.9	91.2	680.3	771.5
3100	18.127	522.2	97.1	534.4	631.5	3100	23.771	525.9	93.1	697.3	790.4
3200	18.177	532.9	99.1	547.1	646.2	3200	23.841	536.7	95.0	714.0	809.0
3300	18.223	543.6	101.1	559.6	660.8	3300	23.906	547.4	96.9	730.4	827.4
3400	18.265	554.1	103.1	572.0	675.1	3400	23.965	558.0	98.8	746.7	845.5
3500	18.304	564.6	105.0	584.3	689.3	3500	24.020	568.6	100.7	762.8	863.5
3600	18.340	575.0	107.0	596.4	703.4	3600	24.071	579.2	102.6	778.8	881.3
3700	18.373	585.4	108.9	608.5	717.4	3700	24.117	589.7	104.4	794.6	899.1
3800	18.404	595.8	110.8	620.5	731.3	3800	24.161	600.1	106.3	810.4	916.7
3900	18.433	606.2	112.8	632.4	745.2	3900	24.201	610.6	108.1	826.1	934.2
4000	18.459	616.5	114.7	644.3	759.0	4000	24.239	621.1	110.0	841.6	951.6
4100	18.484	626.7	116.6	655.9	772.5	4100	24.274	631.2	111.8	856.7	968.5
4200	18.508	636.7	118.4	667.3	785.8	4200	24.307	641.2	113.6	871.7	985.2
4300	18.529	646.5	120.3	678.6	798.9	4300	24.337	651.2	115.3	886.4	1001.8
4400	18.550	656.3	122.1	689.8	811.9	4400	24.366	661.0	117.1	901.0	1018.1
4500	18.569	666.0	123.9	700.8	824.7	4500	24.393	670.8	118.8	915.5	1034.3
4600	18.587	675.7	125.7	711.7	837.4	4600	24.418	680.5	120.5	929.8	1050.3
4700	18.603	685.2	127.5	722.5	850.0	4700	24.442	690.1	122.2	943.9	1066.1
4800	18.619	694.7	129.2	733.2	862.5	4800	24.464	699.6	123.9	957.9	1081.8
4900	18.634	704.1	131.0	743.8	874.8	4900	24.485	709.1	125.6	971.8	1097.4
5000	18.648	713.4	132.7	754.3	887.0	5000	24.505	718.5	127.2	985.6	1112.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

C_3H_8						C_6H_6					
$M = 44.10$, $\sigma = 5.118$, $\epsilon/k = 237.1$						$M = 78.11$, $\sigma = 5.349$, $\epsilon/k = 412.3$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.623	27.8	4.7	3.5	8.2	100	4.262	27.5	2.6	1.6	4.3
200	6.335	55.3	9.3	12.6	21.9	200	6.463	50.9	4.9	6.8	11.6
300	8.459	82.7	14.0	29.3	43.3	300	9.757	76.4	7.3	18.6	25.9
400	10.950	108.2	18.3	54.4	72.7	400	13.161	102.3	9.8	36.6	46.4
500	13.342	131.3	22.2	84.7	106.9	500	16.148	127.6	12.2	58.5	70.6
600	15.456	152.5	25.8	117.5	143.3	600	18.626	151.9	14.5	82.3	96.7
700	17.291	172.1	29.1	151.4	180.5	700	20.667	174.9	16.7	106.7	123.4
800	18.883	190.5	32.2	185.7	217.9	800	22.363	196.6	18.8	131.2	149.9
900	20.267	207.9	35.1	219.7	254.8	900	23.788	217.2	20.7	155.3	176.0
1000	21.470	224.3	37.9	253.1	291.0	1000	24.995	236.8	22.6	178.9	201.5
1100	22.515	240.0	40.6	285.7	326.3	1100	26.024	255.6	24.4	201.9	226.3
1200	23.422	255.0	43.1	317.3	360.4	1200	26.904	273.5	26.1	224.2	250.3
1300	24.210	269.4	45.5	347.9	393.5	1300	27.660	290.9	27.8	245.8	273.5
1400	24.895	283.5	47.9	377.6	425.5	1400	28.312	307.6	29.3	266.6	296.0
1500	25.491	297.1	50.2	406.3	456.5	1500	28.877	323.7	30.9	286.8	317.7
1600	26.012	310.3	52.4	434.0	486.5	1600	29.367	339.4	32.4	306.2	338.6
1700	26.468	323.2	54.6	460.9	515.5	1700	29.796	354.6	33.8	325.1	358.9
1800	26.869	335.8	56.8	486.8	543.6	1800	30.171	369.4	35.2	343.3	378.5
1900	27.222	348.1	58.8	512.0	570.8	1900	30.501	383.8	36.6	360.9	397.5
2000	27.535	360.2	60.9	536.3	597.2	2000	30.792	397.8	38.0	378.0	415.9
2100	27.812	371.9	62.8	560.0	622.8	2100	31.050	411.5	39.3	394.5	433.8
2200	28.059	383.4	64.8	582.9	647.7	2200	31.279	424.9	40.5	410.7	451.2
2300	28.279	394.7	66.7	605.2	671.9	2300	31.484	438.1	41.8	426.4	468.2
2400	28.476	405.7	68.6	626.9	695.4	2400	31.667	451.0	43.0	441.8	484.8
2500	28.654	416.5	70.4	648.0	718.4	2500	31.832	463.7	44.2	456.8	501.0
2600	28.814	427.2	72.2	668.6	740.8	2600	31.980	476.3	45.4	471.5	517.0
2700	28.959	437.6	74.0	688.8	762.7	2700	32.114	488.6	46.6	485.9	532.5
2800	29.090	448.0	75.7	708.5	784.2	2800	32.236	500.7	47.8	500.0	547.8
2900	29.209	458.1	77.4	727.9	805.3	2900	32.346	512.7	48.9	513.9	562.8
3000	29.318	468.2	79.1	746.9	826.0	3000	32.447	524.5	50.0	527.5	577.5
3100	29.417	478.2	80.8	765.6	846.4	3100	32.539	536.1	51.2	540.9	592.0
3200	29.508	488.1	82.5	784.1	866.6	3200	32.623	547.6	52.2	554.0	606.2
3300	29.592	497.9	84.1	802.3	886.4	3300	32.700	558.9	53.3	566.9	620.2
3400	29.669	507.6	85.8	820.4	906.1	3400	32.771	570.1	54.4	579.6	633.9
3500	29.740	517.4	87.4	838.3	925.7	3500	32.837	581.1	55.4	592.0	647.5
3600	29.805	527.1	89.1	856.0	945.1	3600	32.897	592.0	56.5	604.3	660.8
3700	29.866	536.8	90.7	873.7	964.4	3700	32.953	602.7	57.5	616.4	673.9
3800	29.922	546.4	92.3	891.3	983.6	3800	33.005	613.3	58.5	628.3	686.8
3900	29.974	555.8	93.9	908.3	1002.3	3900	33.053	623.8	59.5	640.1	699.6
4000	30.022	565.1	95.5	925.1	1020.6	4000	33.098	634.1	60.5	651.6	712.1
4100	30.068	574.3	97.0	941.8	1038.8	4100	33.140	644.4	61.5	663.1	724.5
4200	30.110	583.4	98.6	958.2	1056.8	4200	33.179	654.5	62.4	674.3	736.8
4300	30.149	592.5	100.1	974.4	1074.5	4300	33.215	664.5	63.4	685.5	748.9
4400	30.186	601.4	101.6	990.4	1092.1	4400	33.249	674.4	64.3	696.5	760.8
4500	30.221	610.3	103.1	1006.3	1109.4	4500	33.281	684.2	65.3	707.3	772.6
4600	30.253	619.1	104.6	1022.0	1126.6	4600	33.311	694.0	66.2	718.1	784.3
4700	30.284	627.8	106.1	1037.6	1143.7	4700	33.339	703.6	67.1	728.7	795.8
4800	30.312	636.5	107.6	1053.0	1160.5	4800	33.366	713.2	68.0	739.3	807.3
4900	30.339	645.1	109.0	1068.2	1177.2	4900	33.390	722.7	68.9	749.7	818.6
5000	30.365	653.6	110.4	1083.3	1193.8	5000	33.414	732.1	69.8	760.0	829.9

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Cd						Cl					
M = 112.41, σ = 2.606, ϵ/k = 1227						M = 35.457, σ = 3.613, ϵ/k = 130.8					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	-----	----	---	----	100	2.500	66.8	14.0	0.0	14.0
200	2.500	-----	----	---	----	200	2.535	132.3	27.8	0.3	28.1
300	2.500	241.4	16.0	0.0	16.0	300	2.628	188.2	39.6	1.8	41.3
400	2.500	309.0	20.5	0.0	20.5	400	2.702	236.4	49.7	3.5	53.2
500	2.500	377.0	25.0	0.0	25.0	500	2.735	279.2	58.7	4.9	63.5
600	2.500	447.6	29.7	0.0	29.7	600	2.740	318.2	66.9	5.6	72.5
700	2.500	520.6	34.5	0.0	34.5	700	2.729	354.1	74.4	6.0	80.4
800	2.500	595.5	39.5	0.0	39.5	800	2.712	388.0	81.5	6.1	87.6
900	2.500	671.4	44.5	0.0	44.5	900	2.693	420.2	88.3	6.0	94.3
1000	2.500	747.5	49.6	0.0	49.6	1000	2.674	450.9	94.8	5.8	100.6
1100	2.500	823.6	54.6	0.0	54.6	1100	2.657	480.4	101.0	5.6	106.5
1200	2.500	899.4	59.6	0.0	59.6	1200	2.641	508.6	106.9	5.3	112.2
1300	2.500	973.9	64.6	0.0	64.6	1300	2.627	535.8	112.6	5.0	117.7
1400	2.500	1047.8	69.5	0.0	69.5	1400	2.615	562.0	118.1	4.8	122.9
1500	2.500	1121.1	74.3	0.0	74.3	1500	2.604	587.5	123.5	4.5	128.0
1600	2.500	1193.3	79.1	0.0	79.1	1600	2.595	612.3	128.7	4.3	133.0
1700	2.500	1264.4	83.8	0.0	83.8	1700	2.586	636.6	133.8	4.1	137.9
1800	2.500	1334.3	88.5	0.0	88.5	1800	2.579	660.5	138.8	3.9	142.7
1900	2.500	1402.8	93.0	0.0	93.0	1900	2.573	684.1	143.8	3.7	147.5
2000	2.500	1470.0	97.5	0.0	97.5	2000	2.567	707.6	148.7	3.5	152.2
2100	2.500	1535.9	101.8	0.0	101.8	2100	2.562	731.1	153.7	3.3	157.0
2200	2.500	1600.5	106.1	0.0	106.1	2200	2.557	753.7	158.4	3.2	161.6
2300	2.500	1663.9	110.3	0.0	110.3	2300	2.553	775.9	163.1	3.0	166.1
2400	2.500	1726.2	114.4	0.0	114.4	2400	2.549	797.8	167.7	2.9	170.6
2500	2.500	1787.4	118.5	0.0	118.5	2500	2.546	819.3	172.2	2.8	175.0
2600	2.500	1847.4	122.5	0.0	122.5	2600	2.543	840.5	176.7	2.7	179.3
2700	2.500	1906.5	126.4	0.0	126.4	2700	2.540	861.4	181.1	2.6	183.6
2800	2.500	1964.7	130.2	0.0	130.3	2800	2.538	882.0	185.4	2.5	187.8
2900	2.500	2021.9	134.0	0.0	134.1	2900	2.535	902.4	189.7	2.4	192.0
3000	2.501	2078.2	137.8	0.0	137.8	3000	2.533	922.4	193.9	2.3	196.1
3100	2.501	2133.7	141.5	0.0	141.5	3100	2.531	942.3	198.0	2.2	200.2
3200	2.501	2188.4	145.1	0.1	145.2	3200	2.530	961.9	202.2	2.1	204.3
3300	2.502	2242.3	148.7	0.1	148.8	3300	2.528	981.2	206.2	2.0	208.3
3400	2.503	2295.5	152.2	0.2	152.3	3400	2.527	1000.4	210.3	2.0	212.2
3500	2.504	2348.0	155.7	0.2	155.9	3500	2.525	1019.3	214.2	1.9	216.1
3600	2.505	2399.9	159.1	0.3	159.4	3600	2.524	1038.1	218.2	1.8	220.0
3700	2.507	2451.1	162.5	0.4	162.9	3700	2.523	1056.6	222.1	1.8	223.9
3800	2.509	2501.6	165.8	0.6	166.4	3800	2.522	1075.0	225.9	1.7	227.7
3900	2.512	2551.5	169.2	0.7	169.9	3900	2.521	1093.2	229.8	1.7	231.4
4000	2.515	2600.9	172.4	0.9	173.4	4000	2.520	1111.2	233.6	1.6	235.2
4100	2.519	2649.7	175.7	1.2	176.8	4100	2.519	1129.1	237.3	1.6	238.9
4200	2.524	2697.9	178.9	1.5	180.4	4200	2.518	1146.8	241.0	1.5	242.6
4300	2.529	2745.6	182.0	1.9	183.9	4300	2.517	1164.4	244.7	1.5	246.2
4400	2.535	2792.7	185.1	2.3	187.4	4400	2.517	1181.8	248.4	1.4	249.8
4500	2.542	2839.3	188.2	2.8	191.0	4500	2.516	1199.1	252.0	1.4	253.4
4600	2.550	2885.4	191.3	3.4	194.7	4600	2.515	1216.2	255.6	1.4	257.0
4700	2.560	2931.1	194.3	4.1	198.4	4700	2.515	1233.2	259.2	1.3	260.5
4800	2.570	2976.2	197.3	4.8	202.2	4800	2.514	1250.1	262.7	1.3	264.0
4900	2.581	3020.8	200.3	5.7	206.0	4900	2.513	1266.8	266.3	1.3	267.5
5000	2.594	3065.7	203.2	6.7	210.0	5000	2.513	1283.4	269.7	1.2	271.0

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

CICN						CIF					
M = 61.48, σ = 4.047, ϵ/k = 338.7						M = 54.46, σ = 3.668, ϵ/k = 203.4					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.758	45.7	5.5	2.5	8.0	100	3.507	64.4	8.8	3.1	11.9
200	4.747	86.8	10.5	8.3	18.8	200	3.631	129.4	17.7	7.0	24.7
300	5.403	131.1	15.9	16.2	32.1	300	3.874	191.8	26.2	12.7	38.9
400	5.791	174.6	21.2	24.5	45.7	400	4.074	248.1	33.9	18.8	52.8
500	6.054	216.2	26.2	32.8	59.0	500	4.212	298.6	40.9	24.6	65.5
600	6.258	255.1	30.9	40.9	71.8	600	4.307	344.7	47.2	30.0	77.2
700	6.427	291.5	35.3	48.8	84.2	700	4.374	387.5	53.0	35.0	88.0
800	6.571	325.6	39.5	56.6	96.0	800	4.423	427.4	58.5	39.6	98.1
900	6.693	357.8	43.4	64.0	107.4	900	4.461	465.1	63.7	43.9	107.6
1000	6.796	388.5	47.1	71.2	118.3	1000	4.492	500.8	68.5	48.0	116.6
1100	6.883	417.8	50.6	78.1	128.8	1100	4.517	534.9	73.2	52.0	125.2
1200	6.956	445.9	54.1	84.8	138.8	1200	4.539	567.7	77.7	55.8	133.4
1300	7.019	472.9	57.3	91.2	148.5	1300	4.558	599.4	82.0	59.4	141.4
1400	7.072	499.0	60.5	97.3	157.8	1400	4.575	630.2	86.2	63.0	149.2
1500	7.117	524.2	63.5	103.3	166.8	1500	4.591	660.1	90.3	66.5	156.8
1600	7.155	548.6	66.5	109.0	175.5	1600	4.605	689.1	94.3	69.9	164.2
1700	7.189	572.2	69.4	114.5	183.8	1700	4.619	717.4	98.2	73.2	171.4
1800	7.217	595.2	72.1	119.8	192.0	1800	4.632	744.9	101.9	76.5	178.4
1900	7.242	617.7	74.9	125.0	199.9	1900	4.644	771.7	105.6	79.7	185.3
2000	7.264	639.8	77.5	130.1	207.6	2000	4.656	797.8	109.2	82.9	192.0
2100	7.284	661.4	80.2	135.0	215.2	2100	4.668	823.4	112.7	86.0	198.6
2200	7.301	682.6	82.7	139.8	222.5	2200	4.679	848.5	116.1	89.0	205.1
2300	7.316	703.4	85.3	144.5	229.8	2300	4.690	873.0	119.5	92.1	211.5
2400	7.329	723.8	87.7	149.1	236.9	2400	4.701	897.2	122.8	95.1	217.9
2500	7.341	743.9	90.2	153.6	243.8	2500	4.711	920.9	126.0	98.1	224.1
2600	7.351	763.6	92.6	158.1	250.6	2600	4.721	944.4	129.2	101.1	230.3
2700	7.361	783.0	94.9	162.4	257.3	2700	4.732	967.6	132.4	104.0	236.4
2800	7.370	802.1	97.2	166.7	263.9	2800	4.742	990.6	135.5	107.0	242.5
2900	7.377	820.9	99.5	170.8	270.3	2900	4.752	1013.4	138.7	109.9	248.6
3000	7.384	839.4	101.7	174.9	276.7	3000	4.762	1036.1	141.8	112.9	254.7
3100	7.391	857.6	104.0	179.0	282.9	3100	4.772	1058.8	144.9	115.9	260.7
3200	7.397	875.6	106.1	182.9	289.1	3200	4.781	1081.5	148.0	118.8	266.8
3300	7.402	893.3	108.3	186.8	295.1	3300	4.791	1103.8	151.0	121.8	272.9
3400	7.407	910.7	110.4	190.7	301.1	3400	4.801	1125.6	154.0	124.7	278.8
3500	7.411	927.9	112.5	194.4	306.9	3500	4.810	1147.2	157.0	127.7	284.6
3600	7.415	944.9	114.5	198.2	312.7	3600	4.820	1168.5	159.9	130.6	290.5
3700	7.419	961.7	116.6	201.8	318.4	3700	4.830	1189.6	162.8	133.5	296.3
3800	7.422	978.3	118.6	205.5	324.1	3800	4.839	1210.4	165.6	136.4	302.0
3900	7.426	994.8	120.6	209.1	329.6	3900	4.849	1231.1	168.5	139.3	307.7
4000	7.429	1011.0	122.6	212.6	335.2	4000	4.858	1251.6	171.3	142.2	313.4
4100	7.431	1027.2	124.5	216.1	340.6	4100	4.867	1271.9	174.0	145.0	319.1
4200	7.434	1043.2	126.4	219.6	346.0	4200	4.877	1292.0	176.8	147.9	324.7
4300	7.436	1059.0	128.4	223.0	351.4	4300	4.886	1311.9	179.5	150.8	330.3
4400	7.438	1074.8	130.3	226.5	356.7	4400	4.896	1331.6	182.2	153.7	335.9
4500	7.440	1090.4	132.2	229.8	362.0	4500	4.905	1351.2	184.9	156.5	341.4
4600	7.442	1106.0	134.1	233.2	367.3	4600	4.914	1370.6	187.6	159.4	346.9
4700	7.444	1121.5	135.9	236.6	372.5	4700	4.924	1389.9	190.2	162.3	352.4
4800	7.446	1136.9	137.8	239.9	377.7	4800	4.933	1409.0	192.8	165.1	357.9
4900	7.447	1152.3	139.7	243.2	382.9	4900	4.942	1427.9	195.4	168.0	363.4
5000	7.448	1167.7	141.5	246.5	388.1	5000	4.952	1446.7	198.0	170.8	368.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

ClF_3						ClO					
$M = 92.46$, $\sigma = 4.288$, $\epsilon/k = 335.7$						$M = 51.46$, $\sigma = 3.842$, $\epsilon/k = 184$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.465	50.1	4.0	2.8	6.8	100	3.502	59.8	8.7	3.1	11.7
200	6.331	95.3	7.7	10.4	18.0	200	3.586	120.4	17.4	6.7	24.1
300	7.698	143.8	11.6	21.2	32.8	300	3.798	177.2	25.7	11.7	37.4
400	8.492	191.6	15.4	32.6	48.0	400	3.997	227.5	32.9	17.4	50.3
500	8.956	237.1	19.1	43.4	62.5	500	4.142	272.5	39.5	22.8	62.3
600	9.242	279.6	22.5	53.5	76.0	600	4.244	313.6	45.4	27.9	73.3
700	9.427	319.4	25.7	62.8	88.5	700	4.316	351.6	50.9	32.6	83.5
800	9.553	356.6	28.7	71.4	100.1	800	4.370	387.1	56.1	36.9	93.0
900	9.642	391.9	31.6	79.4	111.0	900	4.410	420.5	60.9	40.9	101.8
1000	9.708	425.4	34.3	87.0	121.3	1000	4.442	452.3	65.5	44.8	110.3
1100	9.757	457.5	36.9	94.2	131.1	1100	4.467	482.7	69.9	48.4	118.3
1200	9.794	488.2	39.3	101.0	140.4	1200	4.488	512.1	74.2	51.9	126.1
1300	9.824	517.6	41.7	107.6	149.3	1300	4.507	540.5	78.3	55.3	133.6
1400	9.848	546.2	44.0	113.9	157.9	1400	4.522	568.0	82.3	58.6	140.8
1500	9.867	573.7	46.2	119.9	166.1	1500	4.536	594.6	86.1	61.7	147.8
1600	9.883	600.3	48.4	125.7	174.1	1600	4.549	620.5	89.9	64.8	154.7
1700	9.896	626.1	50.5	131.4	181.8	1700	4.561	645.6	93.5	67.8	161.3
1800	9.907	651.3	52.5	136.9	189.4	1800	4.571	670.1	97.0	70.8	167.8
1900	9.917	675.9	54.5	142.2	196.7	1900	4.582	694.0	100.5	73.6	174.1
2000	9.925	700.0	56.4	147.4	203.9	2000	4.591	717.3	103.9	76.5	180.3
2100	9.932	723.6	58.3	152.6	210.9	2100	4.600	740.1	107.2	79.2	186.4
2200	9.938	746.8	60.2	157.6	217.8	2200	4.609	762.5	110.4	82.0	192.4
2300	9.943	769.5	62.0	162.5	224.5	2300	4.617	784.5	113.6	84.7	198.3
2400	9.947	791.9	63.8	167.3	231.1	2400	4.625	806.2	116.8	87.3	204.1
2500	9.952	813.8	65.6	172.0	237.6	2500	4.633	827.7	119.9	90.0	209.9
2600	9.955	835.4	67.3	176.7	244.0	2600	4.641	849.0	123.0	92.7	215.6
2700	9.958	856.6	69.0	181.3	250.3	2700	4.648	870.2	126.0	95.3	221.3
2800	9.961	877.5	70.7	185.7	256.5	2800	4.656	891.3	129.1	97.9	227.0
2900	9.964	898.0	72.4	190.2	262.5	2900	4.663	912.4	132.1	100.6	232.7
3000	9.966	918.2	74.0	194.5	268.5	3000	4.670	933.2	135.1	103.2	238.4
3100	9.968	938.1	75.6	198.8	274.4	3100	4.677	953.4	138.1	105.8	243.9
3200	9.970	957.7	77.2	203.0	280.2	3200	4.684	973.4	141.0	108.4	249.3
3300	9.972	977.1	78.8	207.1	285.9	3300	4.691	993.2	143.8	110.9	254.8
3400	9.974	996.1	80.3	211.2	291.5	3400	4.698	1012.8	146.7	113.5	260.1
3500	9.975	1014.9	81.8	215.2	297.1	3500	4.704	1032.1	149.5	116.0	265.4
3600	9.977	1033.5	83.3	219.2	302.5	3600	4.711	1051.2	152.2	118.5	270.7
3700	9.978	1051.9	84.8	223.2	307.9	3700	4.718	1070.1	155.0	121.0	276.0
3800	9.979	1070.1	86.2	227.0	313.3	3800	4.724	1088.8	157.7	123.5	281.1
3900	9.980	1088.0	87.7	230.9	318.6	3900	4.731	1107.4	160.4	125.9	286.3
4000	9.981	1105.8	89.1	234.7	323.8	4000	4.738	1125.7	163.0	128.4	291.4
4100	9.982	1123.4	90.5	238.5	329.0	4100	4.744	1143.9	165.7	130.9	296.5
4200	9.983	1140.9	92.0	242.2	334.2	4200	4.751	1162.0	168.3	133.3	301.6
4300	9.984	1158.3	93.4	245.9	339.3	4300	4.757	1179.8	170.9	135.7	306.6
4400	9.984	1175.5	94.7	249.6	344.4	4400	4.764	1197.6	173.4	138.2	311.6
4500	9.985	1192.7	96.1	253.3	349.4	4500	4.770	1215.1	176.0	140.6	316.6
4600	9.986	1209.7	97.5	256.9	354.4	4600	4.776	1232.6	178.5	143.0	321.5
4700	9.986	1226.7	98.9	260.5	359.4	4700	4.783	1249.8	181.0	145.4	326.4
4800	9.987	1243.6	100.2	264.2	364.4	4800	4.789	1267.0	183.5	147.8	331.3
4900	9.987	1260.5	101.6	267.8	369.3	4900	4.796	1284.0	185.9	150.3	336.2
5000	9.988	1277.3	103.0	271.3	374.3	5000	4.802	1300.9	188.4	152.7	341.0

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Cl_2						F					
$M = 70.91$, $\sigma = 4.217$, $\epsilon/k = 316.0$						$M = 19.00$, $\sigma = 2.968$, $\epsilon/k = 112.6$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.523	46.3	4.9	1.8	6.6	100	2.550	78.3	30.7	0.5	31.3
200	3.812	89.0	9.3	4.3	13.7	200	2.719	152.4	59.8	4.6	64.4
300	4.086	134.3	14.1	7.9	22.0	300	2.735	213.7	83.8	6.9	90.8
400	4.246	178.5	18.8	11.5	30.3	400	2.698	266.3	104.4	7.3	111.7
500	4.340	220.2	23.1	15.0	38.1	500	2.658	313.0	122.8	6.8	129.6
600	4.400	259.0	27.2	18.2	45.4	600	2.626	355.4	139.4	6.2	145.6
700	4.440	295.1	31.0	21.2	52.2	700	2.601	394.9	154.9	5.5	160.4
800	4.469	329.0	34.6	24.0	58.5	800	2.583	432.1	169.5	4.9	174.4
900	4.491	361.0	37.9	26.6	64.5	900	2.569	467.5	183.4	4.4	187.8
1000	4.509	391.4	41.1	29.1	70.2	1000	2.558	501.1	196.6	4.0	200.5
1100	4.525	420.5	44.2	31.5	75.7	1100	2.549	533.3	209.2	3.6	212.8
1200	4.538	448.3	47.1	33.8	80.9	1200	2.542	564.1	221.3	3.3	224.5
1300	4.549	475.1	49.9	36.0	86.0	1300	2.537	593.8	232.9	3.0	235.9
1400	4.559	501.0	52.6	38.2	90.8	1400	2.532	622.7	244.2	2.8	247.0
1500	4.569	525.9	55.3	40.3	95.5	1500	2.528	651.0	255.3	2.6	257.9
1600	4.578	550.0	57.8	42.3	100.1	1600	2.525	678.7	266.2	2.4	268.6
1700	4.587	573.5	60.3	44.3	104.5	1700	2.523	706.3	277.0	2.2	279.2
1800	4.595	596.4	62.7	46.2	108.9	1800	2.520	733.7	287.8	2.1	289.8
1900	4.603	618.8	65.0	48.1	113.2	1900	2.518	760.2	298.2	1.9	300.1
2000	4.610	640.8	67.3	50.0	117.4	2000	2.517	786.1	308.3	1.8	310.1
2100	4.618	662.3	69.6	51.9	121.5	2100	2.515	811.6	318.3	1.7	320.0
2200	4.625	683.4	71.8	53.7	125.5	2200	2.514	836.5	328.1	1.6	329.7
2300	4.632	704.1	74.0	55.5	129.5	2300	2.513	861.1	337.7	1.5	339.3
2400	4.639	724.4	76.1	57.3	133.5	2400	2.512	885.2	347.2	1.5	348.7
2500	4.646	744.3	78.2	59.1	137.3	2500	2.511	909.0	356.5	1.4	357.9
2600	4.653	764.0	80.3	60.8	141.1	2600	2.510	932.5	365.7	1.3	367.0
2700	4.660	783.2	82.3	62.6	144.9	2700	2.509	955.6	374.8	1.3	376.0
2800	4.666	802.2	84.3	64.3	148.6	2800	2.509	978.3	383.7	1.2	384.9
2900	4.673	820.8	86.3	66.0	152.2	2900	2.508	1000.8	392.6	1.1	393.7
3000	4.680	839.2	88.2	67.7	155.9	3000	2.508	1023.0	401.3	1.1	402.4
3100	4.686	857.2	90.1	69.3	159.4	3100	2.507	1045.0	409.9	1.1	410.9
3200	4.693	875.0	92.0	71.0	162.9	3200	2.507	1066.7	418.4	1.0	419.4
3300	4.699	892.6	93.8	72.6	166.4	3300	2.506	1088.1	426.8	1.0	427.7
3400	4.706	909.9	95.6	74.2	169.9	3400	2.506	1109.3	435.1	0.9	436.0
3500	4.712	927.0	97.4	75.9	173.3	3500	2.506	1130.3	443.3	0.9	444.2
3600	4.719	943.9	99.2	77.5	176.7	3600	2.505	1151.0	451.5	0.9	452.3
3700	4.725	960.6	101.0	79.1	180.0	3700	2.505	1171.6	459.5	0.8	460.4
3800	4.732	977.2	102.7	80.7	183.4	3800	2.505	1191.9	467.5	0.8	468.3
3900	4.738	993.6	104.4	82.3	186.7	3900	2.505	1212.1	475.4	0.8	476.2
4000	4.744	1009.9	106.1	83.8	190.0	4000	2.504	1232.0	483.2	0.8	484.0
4100	4.751	1026.0	107.8	85.4	193.2	4100	2.504	1251.8	491.0	0.7	491.7
4200	4.757	1042.0	109.5	87.0	196.5	4200	2.504	1271.4	498.7	0.7	499.4
4300	4.763	1058.0	111.2	88.6	199.8	4300	2.504	1290.9	506.3	0.7	507.0
4400	4.770	1073.8	112.9	90.2	203.0	4400	2.504	1310.2	513.9	0.7	514.6
4500	4.776	1089.6	114.5	91.7	206.3	4500	2.504	1329.3	521.4	0.6	522.0
4600	4.782	1105.4	116.2	93.3	209.5	4600	2.503	1348.3	528.8	0.6	529.5
4700	4.789	1121.1	117.8	94.9	212.7	4700	2.503	1367.1	536.2	0.6	536.8
4800	4.795	1136.8	119.5	96.5	216.0	4800	2.503	1385.8	543.6	0.6	544.1
4900	4.801	1152.5	121.1	98.1	219.2	4900	2.503	1404.4	550.8	0.6	551.4
5000	4.807	1168.2	122.8	99.7	222.5	5000	2.503	1422.8	558.1	0.6	558.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

FCN						F_2					
$M = 45.02$, $\sigma = 3.578$, $\epsilon/k = 168$						$M = 38.00$, $\sigma = 3.357$, $\epsilon/k = 112.6$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.682	67.5	11.2	4.6	15.8	100	3.502	86.6	17.0	6.0	23.0
200	4.637	135.7	22.5	16.9	39.4	200	3.571	168.5	33.0	12.5	45.5
300	5.340	198.1	32.8	32.8	65.6	300	3.771	236.2	46.3	20.7	67.1
400	5.747	252.7	41.8	47.8	89.6	400	3.972	294.4	57.7	29.9	87.6
500	5.999	301.4	49.9	61.5	111.3	500	4.126	346.0	67.9	38.8	106.7
600	6.179	345.9	57.3	74.1	131.4	600	4.236	392.8	77.0	47.1	124.1
700	6.325	387.0	64.1	86.3	150.3	700	4.317	436.5	85.6	54.7	140.3
800	6.452	425.3	70.4	97.9	168.3	800	4.377	477.7	93.7	61.9	155.6
900	6.565	461.5	76.4	109.3	185.7	900	4.424	516.8	101.3	68.6	170.0
1000	6.664	496.0	82.1	120.3	202.4	1000	4.462	554.0	108.6	75.0	183.7
1100	6.752	529.1	87.6	131.1	218.7	1100	4.493	589.5	115.6	81.1	196.7
1200	6.830	561.1	92.9	141.6	234.4	1200	4.519	623.6	122.3	86.9	209.2
1300	6.898	591.9	98.0	151.7	249.7	1300	4.542	656.5	128.7	92.5	221.3
1400	6.958	621.7	102.9	161.5	264.4	1400	4.563	688.4	135.0	98.0	233.0
1500	7.010	650.6	107.7	171.0	278.7	1500	4.581	719.6	141.1	103.4	244.5
1600	7.056	678.6	112.3	180.2	292.5	1600	4.598	750.3	147.1	108.7	255.8
1700	7.096	705.8	116.8	189.0	305.9	1700	4.613	780.7	153.1	113.9	267.0
1800	7.132	732.3	121.2	197.6	318.9	1800	4.628	811.1	159.1	119.2	278.2
1900	7.163	758.2	125.5	206.0	331.5	1900	4.642	840.4	164.8	124.3	289.1
2000	7.191	783.6	129.7	214.2	343.9	2000	4.655	869.0	170.4	129.3	299.7
2100	7.216	808.4	133.8	222.1	355.9	2100	4.668	897.1	175.9	134.3	310.2
2200	7.238	832.9	137.9	229.9	367.8	2200	4.680	924.7	181.4	139.2	320.5
2300	7.257	857.2	141.9	237.6	379.5	2300	4.693	951.9	186.7	144.1	330.7
2400	7.275	881.2	145.9	245.2	391.0	2400	4.704	978.6	191.9	148.9	340.8
2500	7.291	905.1	149.8	252.6	402.4	2500	4.716	1004.9	197.1	153.7	350.8
2600	7.305	928.9	153.8	260.1	413.8	2600	4.727	1030.8	202.1	158.5	360.6
2700	7.318	952.6	157.7	267.4	425.1	2700	4.738	1056.3	207.2	163.2	370.4
2800	7.329	975.6	161.5	274.5	436.0	2800	4.749	1081.5	212.1	167.9	380.0
2900	7.340	998.2	165.2	281.5	446.8	2900	4.760	1106.4	217.0	172.6	389.6
3000	7.350	1020.6	168.9	288.4	457.4	3000	4.770	1130.9	221.8	177.3	399.0
3100	7.359	1042.7	172.6	295.2	467.8	3100	4.781	1155.2	226.5	181.9	408.4
3200	7.367	1064.5	176.2	301.9	478.1	3200	4.791	1179.1	231.2	186.5	417.8
3300	7.374	1086.1	179.8	308.4	488.2	3300	4.802	1202.8	235.9	191.1	427.0
3400	7.381	1107.4	183.3	314.9	498.2	3400	4.812	1226.3	240.5	195.7	436.2
3500	7.387	1128.4	186.8	321.4	508.1	3500	4.822	1249.4	245.0	200.3	445.3
3600	7.393	1149.3	190.2	327.7	517.9	3600	4.833	1272.4	249.5	204.9	454.4
3700	7.399	1169.9	193.7	333.9	527.6	3700	4.843	1295.1	254.0	209.5	463.4
3800	7.404	1190.4	197.0	340.1	537.2	3800	4.853	1317.6	258.4	214.0	472.4
3900	7.408	1210.6	200.4	346.2	546.6	3900	4.863	1339.9	262.8	218.6	481.3
4000	7.413	1230.6	203.7	352.3	556.0	4000	4.873	1362.0	267.1	223.1	490.2
4100	7.417	1250.5	207.0	358.2	565.2	4100	4.883	1383.8	271.4	227.6	499.0
4200	7.420	1270.2	210.2	364.2	574.4	4200	4.893	1405.5	275.6	232.2	507.8
4300	7.424	1289.7	213.5	370.0	583.5	4300	4.903	1427.0	279.9	236.7	516.6
4400	7.427	1309.0	216.7	375.8	592.5	4400	4.913	1448.3	284.0	241.2	525.3
4500	7.430	1328.2	219.9	381.6	601.4	4500	4.923	1469.5	288.2	245.8	533.9
4600	7.433	1347.2	223.0	387.2	610.3	4600	4.932	1490.5	292.3	250.3	542.6
4700	7.436	1366.1	226.1	392.9	619.0	4700	4.942	1511.3	296.4	254.8	551.2
4800	7.439	1384.8	229.2	398.5	627.7	4800	4.952	1532.0	300.4	259.3	559.8
4900	7.441	1403.4	232.3	404.0	636.3	4900	4.962	1552.5	304.5	263.8	568.3
5000	7.443	1421.8	235.4	409.5	644.9	5000	4.972	1572.8	308.4	268.4	576.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

H						HBr					
$M = 1.008$, $\sigma = 2.708$, $\epsilon/k = 37.0$						$M = 80.92$, $\sigma = 3.353$, $\epsilon/k = 449$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	34.3	253.4	0.0	253.4	100	3.502	69.2	6.4	2.2	8.6
200	2.500	56.9	420.8	0.0	420.8	200	3.503	127.0	11.7	4.1	15.8
300	2.500	74.9	553.4	0.0	553.4	300	3.505	189.3	17.4	6.2	23.6
400	2.500	90.3	667.6	0.0	667.6	400	3.514	253.7	23.4	8.3	31.7
500	2.500	104.2	770.4	0.0	770.4	500	3.542	317.2	29.2	10.7	39.9
600	2.500	117.5	868.5	0.0	868.5	600	3.592	378.8	34.9	13.4	48.3
700	2.500	129.9	960.5	0.0	960.5	700	3.659	437.6	40.3	16.4	56.7
800	2.500	141.7	1047.7	0.0	1047.7	800	3.735	493.5	45.4	19.8	65.2
900	2.500	153.0	1130.9	0.0	1130.9	900	3.812	546.5	50.3	23.2	73.6
1000	2.500	163.8	1210.8	0.0	1210.8	1000	3.887	597.0	55.0	26.8	81.8
1100	2.500	174.2	1287.7	0.0	1287.7	1100	3.957	645.4	59.4	30.5	89.9
1200	2.500	184.3	1362.2	0.0	1362.2	1200	4.020	691.8	63.7	34.1	97.8
1300	2.500	194.0	1434.4	0.0	1434.4	1300	4.078	736.4	67.8	37.7	105.5
1400	2.500	203.5	1504.7	0.0	1504.7	1400	4.129	779.6	71.8	41.2	113.0
1500	2.500	212.8	1573.2	0.0	1573.2	1500	4.175	821.4	75.6	44.6	120.2
1600	2.500	221.8	1640.1	0.0	1640.1	1600	4.216	861.8	79.4	48.0	127.3
1700	2.500	230.7	1705.4	0.0	1705.4	1700	4.253	901.1	83.0	51.2	134.2
1800	2.500	239.3	1769.5	0.0	1769.5	1800	4.287	939.2	86.5	54.4	140.9
1900	2.500	247.8	1832.3	0.0	1832.3	1900	4.317	976.6	89.9	57.5	147.5
2000	2.500	256.2	1893.9	0.0	1893.9	2000	4.344	1012.9	93.3	60.5	153.8
2100	2.500	264.4	1954.4	0.0	1954.4	2100	4.369	1048.3	96.5	63.5	160.0
2200	2.500	272.4	2013.9	0.0	2013.9	2200	4.391	1082.8	99.7	66.4	166.1
2300	2.500	280.3	2072.5	0.0	2072.5	2300	4.412	1116.7	102.8	69.2	172.0
2400	2.500	288.1	2130.1	0.0	2130.1	2400	4.431	1149.9	105.9	72.0	177.9
2500	2.500	295.8	2187.0	0.0	2187.0	2500	4.449	1182.6	108.9	74.7	183.6
2600	2.500	303.4	2243.0	0.0	2243.0	2600	4.465	1214.8	111.9	77.4	189.3
2700	2.500	310.9	2298.2	0.0	2298.2	2700	4.480	1246.5	114.8	80.0	194.8
2800	2.500	318.2	2352.8	0.0	2352.8	2800	4.495	1277.7	117.7	82.6	200.3
2900	2.500	325.5	2406.6	0.0	2406.6	2900	4.508	1308.4	120.5	85.2	205.7
3000	2.500	332.7	2459.8	0.0	2459.8	3000	4.521	1338.8	123.3	87.7	211.0
3100	2.500	339.8	2512.4	0.0	2512.4	3100	4.533	1368.7	126.0	90.2	216.2
3200	2.500	346.9	2564.4	0.0	2564.4	3200	4.544	1398.2	128.8	92.7	221.4
3300	2.500	353.8	2615.8	0.0	2615.8	3300	4.555	1427.4	131.5	95.1	226.6
3400	2.500	360.7	2666.7	0.0	2666.7	3400	4.566	1456.1	134.1	97.5	231.6
3500	2.500	367.5	2717.0	0.0	2717.0	3500	4.576	1484.5	136.7	99.9	236.6
3600	2.500	374.2	2766.8	0.0	2766.8	3600	4.585	1512.6	139.3	102.2	241.5
3700	2.500	380.9	2816.2	0.0	2816.2	3700	4.594	1540.3	141.9	104.6	246.4
3800	2.500	387.5	2865.0	0.0	2865.0	3800	4.603	1567.7	144.4	106.9	251.3
3900	2.500	394.1	2913.4	0.0	2913.4	3900	4.612	1594.7	146.9	109.2	256.0
4000	2.500	400.6	2961.4	0.0	2961.4	4000	4.620	1621.4	149.3	111.4	260.8
4100	2.500	407.0	3009.0	0.0	3009.0	4100	4.628	1647.8	151.8	113.7	265.5
4200	2.500	413.4	3056.1	0.0	3056.1	4200	4.636	1674.0	154.2	115.9	270.1
4300	2.500	419.7	3102.8	0.0	3102.8	4300	4.644	1699.8	156.5	118.1	274.7
4400	2.500	426.0	3149.2	0.0	3149.2	4400	4.652	1725.4	158.9	120.3	279.2
4500	2.500	432.2	3195.2	0.0	3195.2	4500	4.659	1750.7	161.2	122.5	283.7
4600	2.500	438.4	3240.8	0.0	3240.8	4600	4.666	1775.7	163.5	124.7	288.2
4700	2.500	444.5	3286.1	0.0	3286.1	4700	4.673	1800.5	165.8	126.8	292.7
4800	2.500	450.6	3331.0	0.0	3331.0	4800	4.680	1825.1	168.1	129.0	297.1
4900	2.500	456.6	3375.6	0.0	3375.6	4900	4.687	1849.5	170.3	131.1	301.4
5000	2.500	462.6	3419.9	0.0	3419.9	5000	4.693	1873.6	172.6	133.2	305.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

HCN						HCl					
M = 27.03, σ = 3.630, ϵ/k = 569.1						M = 36.47, σ = 3.339, ϵ/k = 344.7					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.508	----	----	---	----	100	3.502	51.4	10.5	3.7	14.2
200	3.817	56.8	15.7	7.3	22.9	200	3.503	97.4	19.9	7.0	26.9
300	4.325	82.9	22.8	14.7	37.5	300	3.504	147.0	30.0	10.6	40.6
400	4.724	110.6	30.5	23.9	54.4	400	3.509	195.9	40.0	14.2	54.3
500	5.026	138.9	38.3	34.0	72.3	500	3.524	242.8	49.6	17.9	67.5
600	5.277	166.8	46.0	45.0	91.0	600	3.557	286.7	58.6	21.8	80.4
700	5.500	194.1	53.5	56.5	110.0	700	3.606	327.8	67.0	26.1	93.1
800	5.703	220.6	60.8	68.6	129.4	800	3.668	366.3	74.9	30.8	105.6
900	5.889	246.1	67.9	80.9	148.8	900	3.735	402.8	82.3	35.8	118.1
1000	6.058	270.6	74.6	93.4	168.0	1000	3.804	437.5	89.4	41.0	130.4
1100	6.210	294.1	81.1	105.9	187.0	1100	3.872	470.6	96.2	46.4	142.6
1200	6.348	316.7	87.3	118.3	205.6	1200	3.935	502.4	102.7	51.9	154.5
1300	6.472	338.4	93.3	130.4	223.8	1300	3.994	532.9	108.9	57.3	166.2
1400	6.582	359.5	99.1	142.4	241.5	1400	4.048	562.4	114.9	62.6	177.6
1500	6.681	379.8	104.7	154.1	258.9	1500	4.097	591.0	120.8	67.9	188.7
1600	6.770	399.6	110.2	165.6	275.8	1600	4.142	618.5	126.4	73.0	199.4
1700	6.850	418.8	115.5	176.8	292.3	1700	4.183	645.2	131.8	78.1	209.9
1800	6.922	437.5	120.6	187.8	308.4	1800	4.219	671.2	137.2	83.0	220.2
1900	6.987	455.8	125.7	198.4	324.1	1900	4.253	696.7	142.4	87.8	230.2
2000	7.045	473.5	130.6	208.9	339.4	2000	4.283	721.5	147.4	92.5	240.0
2100	7.099	490.9	135.3	219.1	354.4	2100	4.311	745.9	152.4	97.2	249.6
2200	7.147	507.9	140.0	229.0	369.1	2200	4.336	769.9	157.3	101.7	259.0
2300	7.191	524.5	144.6	238.8	383.4	2300	4.360	793.4	162.1	106.1	268.2
2400	7.232	540.9	149.1	248.4	397.5	2400	4.381	816.5	166.8	110.5	277.3
2500	7.270	556.8	153.5	257.8	411.3	2500	4.401	839.2	171.5	114.7	286.2
2600	7.305	572.5	157.8	266.9	424.7	2600	4.419	861.5	176.0	118.9	295.0
2700	7.337	587.8	162.1	275.9	438.0	2700	4.437	883.4	180.5	123.1	303.6
2800	7.367	602.9	166.2	284.7	451.0	2800	4.453	905.0	184.9	127.1	312.0
2900	7.395	617.7	170.3	293.4	463.7	2900	4.468	926.2	189.3	131.1	320.4
3000	7.421	632.3	174.3	302.0	476.3	3000	4.482	947.1	193.5	135.0	328.6
3100	7.446	646.8	178.3	310.4	488.7	3100	4.495	967.7	197.7	138.9	336.6
3200	7.469	661.0	182.2	318.8	501.0	3200	4.508	988.0	201.9	142.7	344.6
3300	7.491	675.0	186.1	327.0	513.1	3300	4.520	1008.0	206.0	146.5	352.4
3400	7.512	688.9	189.9	335.1	525.0	3400	4.531	1027.8	210.0	150.2	360.2
3500	7.532	702.7	193.7	343.1	536.8	3500	4.542	1047.2	214.0	153.8	367.8
3600	7.551	716.2	197.5	351.1	548.5	3600	4.553	1066.4	217.9	157.5	375.4
3700	7.569	729.6	201.2	358.9	560.1	3700	4.563	1085.4	221.8	161.0	382.8
3800	7.586	742.9	204.8	366.7	571.5	3800	4.572	1104.2	225.6	164.6	390.2
3900	7.603	756.0	208.4	374.4	582.8	3900	4.581	1122.8	229.4	168.1	397.5
4000	7.619	769.0	212.0	382.0	594.1	4000	4.590	1141.1	233.2	171.6	404.8
4100	7.634	781.9	215.6	389.6	605.2	4100	4.599	1159.3	236.9	175.0	411.9
4200	7.649	794.6	219.1	397.1	616.2	4200	4.607	1177.4	240.6	178.5	419.0
4300	7.664	807.2	222.5	404.5	627.1	4300	4.615	1195.2	244.2	181.9	426.1
4400	7.678	819.7	226.0	411.9	637.8	4400	4.623	1213.0	247.9	185.3	433.1
4500	7.691	832.0	229.4	419.2	648.5	4500	4.631	1230.6	251.5	188.6	440.1
4600	7.704	844.2	232.8	426.4	659.2	4600	4.639	1248.2	255.1	192.0	447.0
4700	7.717	856.4	236.1	433.6	669.7	4700	4.646	1265.6	258.6	195.3	454.0
4800	7.730	868.3	239.4	440.7	680.1	4800	4.653	1283.0	262.2	198.7	460.8
4900	7.742	880.2	242.7	447.8	690.5	4900	4.660	1300.3	265.7	202.0	467.7
5000	7.754	892.0	245.9	454.8	700.7	5000	4.667	1317.6	269.2	205.3	474.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

HF						HI					
$M = 20.01$, $\sigma = 3.148$, $\epsilon/k = 330$						$M = 127.92$, $\sigma = 4.211$, $\epsilon/k = 288.7$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.504	43.5	16.2	5.7	21.9	100	3.502	64.6	3.8	1.3	5.1
200	3.503	82.9	30.9	10.9	41.8	200	3.503	125.5	7.3	2.6	9.9
300	3.504	125.3	46.6	16.5	63.1	300	3.507	189.3	11.0	3.9	14.9
400	3.506	166.7	62.1	22.0	84.1	400	3.527	250.6	14.6	5.3	19.9
500	3.509	206.2	76.8	27.3	104.0	500	3.577	307.6	17.9	6.8	24.7
600	3.515	242.9	90.5	32.3	122.8	600	3.650	360.2	21.0	8.5	29.5
700	3.530	277.3	103.3	37.4	140.7	700	3.737	409.1	23.8	10.4	34.2
800	3.554	309.5	115.3	42.7	158.0	800	3.825	454.9	26.5	12.4	38.9
900	3.587	339.9	126.6	48.4	175.0	900	3.910	498.2	29.0	14.4	43.4
1000	3.628	368.9	137.4	54.6	191.9	1000	3.987	539.4	31.4	16.4	47.9
1100	3.675	396.6	147.7	61.1	208.8	1100	4.056	578.6	33.7	18.5	52.2
1200	3.724	423.1	157.6	67.9	225.5	1200	4.117	616.3	35.9	20.4	56.3
1300	3.776	448.5	167.0	75.0	242.0	1300	4.171	652.4	38.0	22.4	60.4
1400	3.827	473.2	176.2	82.3	258.5	1400	4.218	687.2	40.0	24.2	64.2
1500	3.877	496.9	185.1	89.7	274.7	1500	4.260	720.8	42.0	26.0	68.0
1600	3.925	519.9	193.6	97.1	290.7	1600	4.297	753.5	43.9	27.8	71.7
1700	3.970	542.2	201.9	104.5	306.4	1700	4.330	785.4	45.8	29.5	75.2
1800	4.014	564.0	210.0	111.9	321.9	1800	4.359	816.6	47.6	31.1	78.7
1900	4.054	585.2	218.0	119.2	337.2	1900	4.386	847.0	49.3	32.8	82.1
2000	4.092	606.1	225.7	126.5	352.2	2000	4.410	876.9	51.1	34.3	85.4
2100	4.128	626.5	233.3	133.7	367.0	2100	4.431	906.1	52.8	35.9	88.7
2200	4.161	646.5	240.8	140.8	381.6	2200	4.451	934.7	54.5	37.4	91.9
2300	4.192	666.2	248.1	147.8	395.9	2300	4.470	962.8	56.1	38.9	95.0
2400	4.221	685.5	255.3	154.7	410.0	2400	4.487	990.3	57.7	40.3	98.0
2500	4.248	704.5	262.4	161.4	423.8	2500	4.502	1017.3	59.3	41.8	101.0
2600	4.273	723.1	269.3	168.1	437.4	2600	4.517	1043.8	60.8	43.2	104.0
2700	4.297	741.4	276.1	174.7	450.8	2700	4.531	1069.9	62.3	44.6	106.9
2800	4.319	759.5	282.8	181.1	464.0	2800	4.544	1095.5	63.8	45.9	109.7
2900	4.340	777.2	289.4	187.5	476.9	2900	4.556	1120.7	65.3	47.3	112.5
3000	4.360	794.7	295.9	193.7	489.7	3000	4.568	1145.5	66.7	48.6	115.3
3100	4.378	811.8	302.4	199.9	502.3	3100	4.579	1169.9	68.2	49.9	118.0
3200	4.396	828.8	308.7	206.0	514.6	3200	4.590	1194.1	69.6	51.2	120.7
3300	4.412	845.5	314.9	212.0	526.8	3300	4.600	1217.9	70.9	52.5	123.4
3400	4.428	862.0	321.0	217.9	538.9	3400	4.610	1241.4	72.3	53.7	126.0
3500	4.443	878.2	327.1	223.7	550.8	3500	4.620	1264.7	73.7	55.0	128.6
3600	4.457	894.3	333.1	229.4	562.5	3600	4.629	1287.7	75.0	56.2	131.2
3700	4.471	910.2	339.0	235.1	574.1	3700	4.638	1310.5	76.3	57.5	133.8
3800	4.484	925.9	344.8	240.8	585.6	3800	4.646	1333.2	77.7	58.7	136.3
3900	4.496	941.4	350.6	246.3	596.9	3900	4.655	1355.7	79.0	59.9	138.9
4000	4.508	956.8	356.3	251.8	608.2	4000	4.663	1378.1	80.3	61.1	141.4
4100	4.519	972.0	362.0	257.3	619.3	4100	4.671	1400.4	81.6	62.3	143.9
4200	4.530	987.2	367.7	262.7	630.4	4200	4.679	1422.6	82.9	63.6	146.4
4300	4.541	1002.2	373.3	268.1	641.4	4300	4.687	1444.7	84.2	64.8	148.9
4400	4.551	1017.2	378.8	273.5	652.3	4400	4.694	1466.8	85.5	66.0	151.5
4500	4.561	1032.0	384.4	278.8	663.1	4500	4.702	1488.9	86.7	67.2	154.0
4600	4.570	1046.8	389.9	284.1	674.0	4600	4.709	1511.1	88.0	68.4	156.5
4700	4.579	1061.6	395.3	289.4	684.7	4700	4.716	1532.6	89.3	69.6	158.9
4800	4.588	1076.2	400.8	294.6	695.5	4800	4.723	1553.9	90.5	70.8	161.4
4900	4.597	1090.9	406.3	299.9	706.2	4900	4.730	1575.0	91.8	72.0	163.8
5000	4.606	1105.5	411.7	305.2	716.9	5000	4.737	1596.0	93.0	73.2	166.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

HS						H_2					
$M = 33.07$, $\sigma = 3.673$, $\epsilon/k = 86.4$						$M = 2.016$, $\sigma = 2.827$, $\epsilon/k = 59.7$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.631	77.0	17.3	6.9	24.3	100	-----	37.8	139.8	-----	-----
200	3.933	144.0	32.5	16.4	48.8	200	-----	66.6	246.3	-----	-----
300	3.901	197.6	44.5	22.0	66.5	300	-----	89.2	329.8	-----	-----
400	3.814	243.2	54.8	25.3	80.2	400	-----	108.6	401.4	-----	-----
500	3.764	283.8	63.9	28.4	92.4	500	3.520	126.1	466.0	167.2	633.2
600	3.758	321.1	72.4	32.0	104.4	600	3.527	142.0	524.9	189.7	714.7
700	3.786	355.9	80.2	36.3	116.5	700	3.540	156.8	579.6	212.3	791.9
800	3.835	388.6	87.6	41.1	128.7	800	3.562	170.8	631.5	236.1	867.6
900	3.893	419.5	94.5	46.3	140.9	900	3.593	184.5	681.9	262.4	944.2
1000	3.953	448.8	101.1	51.7	152.9	1000	3.632	197.8	731.1	291.3	1022.4
1100	4.013	477.1	107.5	57.2	164.8	1100	3.677	210.5	778.1	322.3	1100.4
1200	4.069	504.6	113.7	62.8	176.5	1200	3.726	222.8	823.5	355.2	1178.7
1300	4.121	531.7	119.8	68.4	188.2	1300	3.777	234.7	867.5	389.9	1257.3
1400	4.168	558.6	125.9	73.9	199.8	1400	3.829	246.2	910.2	425.7	1336.0
1500	4.211	584.4	131.7	79.3	211.0	1500	3.880	257.5	951.8	462.5	1414.3
1600	4.250	609.6	137.4	84.6	222.0	1600	3.931	268.5	992.5	499.8	1492.3
1700	4.286	634.1	142.9	89.8	232.7	1700	3.979	279.2	1032.1	537.5	1569.6
1800	4.318	658.2	148.3	94.9	243.2	1800	4.026	289.7	1071.0	575.2	1646.2
1900	4.347	681.7	153.6	99.9	253.5	1900	4.070	300.0	1109.1	612.9	1722.0
2000	4.374	704.8	158.8	104.7	263.6	2000	4.112	310.1	1146.4	650.5	1796.9
2100	4.398	727.4	163.9	109.5	273.4	2100	4.152	320.1	1183.1	687.8	1870.9
2200	4.421	749.7	168.9	114.2	283.2	2200	4.189	329.8	1219.2	724.8	1943.9
2300	4.442	771.6	173.9	118.8	292.7	2300	4.224	339.4	1254.6	761.4	2016.0
2400	4.461	793.1	178.7	123.4	302.1	2400	4.257	348.9	1289.6	797.6	2087.2
2500	4.479	814.3	183.5	127.8	311.3	2500	4.288	358.2	1324.0	833.5	2157.4
2600	4.496	835.2	188.2	132.2	320.4	2600	4.318	367.3	1357.9	868.9	2226.8
2700	4.511	855.8	192.9	136.6	329.4	2700	4.346	376.4	1391.3	904.0	2295.3
2800	4.526	876.2	197.4	140.8	338.3	2800	4.372	385.3	1424.4	938.7	2363.0
2900	4.540	896.3	202.0	145.1	347.0	2900	4.397	394.1	1456.9	973.0	2430.0
3000	4.554	916.1	206.4	149.2	355.7	3000	4.421	402.8	1489.1	1007.0	2496.1
3100	4.567	935.7	210.9	153.4	364.2	3100	4.444	411.5	1521.0	1040.6	2561.5
3200	4.579	955.1	215.2	157.5	372.7	3200	4.465	420.0	1552.4	1073.8	2626.3
3300	4.590	974.2	219.5	161.5	381.1	3300	4.486	428.4	1583.5	1106.8	2690.3
3400	4.601	993.1	223.8	165.5	389.4	3400	4.505	436.7	1614.3	1139.5	2753.8
3500	4.612	1011.9	228.0	169.5	397.6	3500	4.524	444.9	1644.8	1171.8	2816.6
3600	4.623	1030.5	232.2	173.5	405.7	3600	4.542	453.1	1674.9	1203.9	2878.9
3700	4.633	1048.8	236.3	177.4	413.8	3700	4.559	461.2	1704.8	1235.8	2940.6
3800	4.642	1067.0	240.4	181.3	421.8	3800	4.576	469.2	1734.4	1267.4	3001.8
3900	4.652	1085.0	244.5	185.2	429.7	3900	4.592	477.1	1763.6	1298.8	3062.4
4000	4.661	1102.9	248.5	189.1	437.6	4000	4.608	485.0	1792.7	1330.0	3122.7
4100	4.670	1120.6	252.5	192.9	445.4	4100	4.623	492.7	1821.5	1361.0	3182.4
4200	4.679	1138.2	256.5	196.7	453.2	4200	4.637	500.5	1850.0	1391.8	3241.7
4300	4.687	1155.6	260.4	200.5	460.9	4300	4.651	508.1	1878.3	1422.4	3300.6
4400	4.696	1172.8	264.3	204.3	468.6	4400	4.665	515.7	1906.3	1452.8	3359.1
4500	4.704	1189.9	268.1	208.0	476.2	4500	4.678	523.2	1934.2	1483.1	3417.3
4600	4.712	1206.9	272.0	211.8	483.7	4600	4.691	530.7	1961.8	1513.3	3475.0
4700	4.720	1223.8	275.8	215.5	491.3	4700	4.704	538.1	1989.2	1543.3	3532.5
4800	4.728	1240.5	279.5	219.2	498.7	4800	4.717	545.5	2016.4	1573.2	3589.5
4900	4.735	1257.1	283.3	222.9	506.2	4900	4.729	552.8	2043.4	1603.0	3646.3
5000	4.743	1273.6	287.0	226.6	513.6	5000	4.740	560.0	2070.2	1632.6	3702.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

H_2O						H_2O_2					
M = 18.02, σ = 2.641, ϵ/k = 809.1						M = 34.02, σ = 4.196, ϵ/k = 289.3					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.006	----	----	----	----	100	4.044	33.5	7.3	4.0	11.3
200	4.010	77.1	31.9	17.0	48.9	200	4.475	65.1	14.3	9.9	24.2
300	4.040	109.6	45.3	24.6	69.9	300	5.055	98.2	21.5	19.4	40.9
400	4.120	143.2	59.2	33.8	93.0	400	5.629	130.0	28.5	31.4	59.9
500	4.236	178.6	73.9	45.1	119.0	500	6.124	159.6	35.0	44.6	79.6
600	4.368	214.9	88.9	58.4	147.3	600	6.531	186.9	41.0	58.1	99.1
700	4.508	251.5	104.0	73.5	177.5	700	6.871	212.3	46.5	71.6	118.1
800	4.656	287.9	119.1	90.3	209.4	800	7.164	236.1	51.7	84.9	136.7
900	4.808	323.5	133.8	108.7	242.5	900	7.423	258.6	56.7	98.2	154.8
1000	4.962	358.7	148.3	128.5	276.9	1000	7.656	280.0	61.3	111.3	172.7
1100	5.114	393.2	162.6	149.6	312.2	1100	7.865	300.4	65.8	124.3	190.1
1200	5.262	426.7	176.5	171.6	348.0	1200	8.055	320.0	70.1	137.0	207.1
1300	5.404	459.3	189.9	194.2	384.1	1300	8.226	338.7	74.2	149.5	223.7
1400	5.538	491.0	203.0	217.1	420.1	1400	8.379	356.8	78.2	161.7	239.9
1500	5.663	521.7	215.8	240.2	456.0	1500	8.517	374.2	82.0	173.6	255.6
1600	5.780	551.6	228.1	263.3	491.5	1600	8.641	391.2	85.7	185.3	271.0
1700	5.887	580.7	240.1	286.3	526.5	1700	8.752	407.8	89.3	196.6	285.9
1800	5.987	609.0	251.9	309.2	561.0	1800	8.852	424.0	92.9	207.6	300.5
1900	6.079	636.7	263.3	331.7	595.0	1900	8.941	439.8	96.3	218.4	314.8
2000	6.164	663.7	274.5	354.0	628.5	2000	9.021	455.3	99.7	228.9	328.7
2100	6.242	690.1	285.4	375.9	661.3	2100	9.094	470.4	103.1	239.2	342.2
2200	6.314	716.0	296.1	397.5	693.6	2200	9.159	485.3	106.3	249.2	355.5
2300	6.381	741.3	306.6	418.8	725.4	2300	9.218	499.9	109.5	258.9	368.4
2400	6.443	766.2	316.8	439.7	756.6	2400	9.271	514.2	112.6	268.5	381.1
2500	6.500	790.5	326.9	460.3	787.2	2500	9.320	528.2	115.7	277.8	393.5
2600	6.553	814.5	336.8	480.5	817.4	2600	9.364	542.0	118.7	286.8	405.6
2700	6.603	838.0	346.5	500.4	847.0	2700	9.404	555.5	121.7	295.7	417.4
2800	6.649	861.1	356.1	520.0	876.1	2800	9.440	568.8	124.6	304.4	429.0
2900	6.692	883.8	365.5	539.3	904.8	2900	9.474	581.9	127.5	312.9	440.4
3000	6.733	906.1	374.7	558.3	933.0	3000	9.505	594.8	130.3	321.2	451.5
3100	6.771	928.0	383.8	577.0	960.8	3100	9.533	607.5	133.1	329.4	462.5
3200	6.807	949.6	392.7	595.4	988.1	3200	9.559	620.0	135.8	337.5	473.3
3300	6.841	971.1	401.6	613.6	1015.2	3300	9.583	632.4	138.5	345.3	483.9
3400	6.873	992.2	410.3	631.6	1041.9	3400	9.605	644.6	141.2	353.1	494.3
3500	6.903	1013.0	418.9	649.3	1068.2	3500	9.625	656.7	143.8	360.8	504.6
3600	6.932	1033.4	427.4	666.7	1094.1	3600	9.644	668.6	146.5	368.3	514.8
3700	6.960	1053.6	435.7	684.0	1119.7	3700	9.662	680.5	149.1	375.8	524.8
3800	6.986	1073.5	443.9	701.0	1144.9	3800	9.678	692.2	151.6	383.1	534.8
3900	7.011	1093.1	452.1	717.8	1169.9	3900	9.693	703.9	154.2	390.4	544.6
4000	7.035	1112.5	460.1	734.4	1194.5	4000	9.707	715.5	156.7	397.7	554.4
4100	7.058	1131.7	468.0	750.9	1218.9	4100	9.720	727.1	159.3	404.8	564.1
4200	7.080	1150.7	475.9	767.2	1243.1	4200	9.733	738.6	161.8	411.9	573.7
4300	7.102	1169.5	483.7	783.4	1267.1	4300	9.744	750.1	164.3	419.0	583.3
4400	7.122	1188.2	491.4	799.5	1290.8	4400	9.755	761.6	166.8	426.1	592.9
4500	7.142	1206.6	499.0	815.4	1314.4	4500	9.766	773.1	169.3	433.1	602.4
4600	7.161	1224.9	506.6	831.2	1337.8	4600	9.775	784.5	171.9	440.1	612.0
4700	7.180	1243.1	514.1	846.9	1360.9	4700	9.784	795.8	174.3	447.0	621.3
4800	7.198	1261.1	521.5	862.5	1384.0	4800	9.793	806.8	176.7	453.7	630.4
4900	7.216	1278.9	528.9	877.9	1406.8	4900	9.801	817.8	179.1	460.4	639.5
5000	7.233	1296.6	536.2	893.3	1429.5	5000	9.808	828.7	181.5	467.0	648.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

H_2S						He					
M = 34.08, σ = 3.623, ϵ/k = 301.1						M = 4.003, σ = 2.551, ϵ/k = 10.22					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	4.004	44.3	9.7	5.1	14.8	100	2.500	99.9	186.0	0.0	186.0
200	4.019	85.6	18.7	10.0	28.7	200	2.500	156.8	291.8	0.0	291.8
300	4.110	129.3	28.3	16.0	44.3	300	2.500	203.9	379.6	0.0	379.6
400	4.267	171.4	37.5	23.3	60.8	400	2.500	245.5	457.0	0.0	457.0
500	4.453	211.0	46.1	31.7	77.8	500	2.500	283.5	527.8	0.0	527.8
600	4.653	247.5	54.1	41.0	95.1	600	2.500	318.9	593.6	0.0	593.6
700	4.862	281.5	61.6	51.2	112.7	700	2.500	352.2	655.7	0.0	655.7
800	5.070	313.4	68.5	62.0	130.5	800	2.500	383.9	714.6	0.0	714.6
900	5.271	343.6	75.1	73.3	148.4	900	2.500	414.2	771.0	0.0	771.0
1000	5.458	372.2	81.4	84.7	166.1	1000	2.500	443.3	825.3	0.0	825.3
1100	5.630	399.5	87.4	96.3	183.6	1100	2.500	471.4	877.6	0.0	877.6
1200	5.785	425.7	93.1	107.6	200.7	1200	2.500	498.6	928.3	0.0	928.3
1300	5.924	451.0	98.6	118.9	217.5	1300	2.500	525.1	977.5	0.0	977.5
1400	6.049	475.2	103.9	129.8	233.7	1400	2.500	550.8	1025.3	0.0	1025.3
1500	6.160	498.6	109.0	140.5	249.5	1500	2.500	575.8	1072.0	0.0	1072.0
1600	6.259	521.3	114.0	150.8	264.8	1600	2.500	600.3	1117.6	0.0	1117.6
1700	6.348	543.5	118.8	161.0	279.8	1700	2.500	624.3	1162.1	0.0	1162.1
1800	6.427	565.1	123.6	170.8	294.4	1800	2.500	647.7	1205.8	0.0	1205.8
1900	6.499	586.3	128.2	180.5	308.7	1900	2.500	670.7	1248.6	0.0	1248.6
2000	6.564	607.0	132.7	189.9	322.6	2000	2.500	693.2	1290.6	0.0	1290.6
2100	6.623	627.3	137.2	199.0	336.2	2100	2.500	715.4	1331.8	0.0	1331.8
2200	6.676	647.2	141.5	208.0	349.5	2200	2.500	737.2	1372.4	0.0	1372.4
2300	6.725	666.7	145.8	216.8	362.6	2300	2.500	758.6	1412.3	0.0	1412.3
2400	6.770	685.8	150.0	225.4	375.4	2400	2.500	779.7	1451.6	0.0	1451.6
2500	6.811	704.6	154.1	233.8	387.9	2500	2.500	800.5	1490.3	0.0	1490.3
2600	6.850	723.1	158.1	242.1	400.2	2600	2.500	821.0	1528.5	0.0	1528.5
2700	6.885	741.2	162.1	250.2	412.3	2700	2.500	841.3	1566.2	0.0	1566.2
2800	6.919	759.0	166.0	258.2	424.1	2800	2.500	861.2	1603.3	0.0	1603.3
2900	6.950	776.6	169.8	266.0	435.8	2900	2.500	880.9	1640.0	0.0	1640.0
3000	6.979	793.8	173.6	273.7	447.3	3000	2.500	900.4	1676.3	0.0	1676.3
3100	7.007	810.9	177.3	281.3	458.6	3100	2.500	919.7	1712.1	0.0	1712.1
3200	7.033	827.6	181.0	288.7	469.7	3200	2.500	938.7	1747.5	0.0	1747.5
3300	7.057	844.2	184.6	296.1	480.7	3300	2.500	957.5	1782.5	0.0	1782.5
3400	7.081	860.5	188.2	303.4	491.6	3400	2.500	976.1	1817.2	0.0	1817.2
3500	7.103	876.6	191.7	310.6	502.3	3500	2.500	994.5	1851.5	0.0	1851.5
3600	7.125	892.6	195.2	317.7	512.9	3600	2.500	1012.7	1885.4	0.0	1885.4
3700	7.145	908.4	198.6	324.8	523.5	3700	2.500	1030.8	1919.0	0.0	1919.0
3800	7.165	924.1	202.1	331.8	533.9	3800	2.500	1048.7	1952.3	0.0	1952.3
3900	7.184	939.6	205.5	338.8	544.3	3900	2.500	1066.4	1985.3	0.0	1985.3
4000	7.203	955.0	208.8	345.7	554.5	4000	2.500	1084.0	2018.0	0.0	2018.0
4100	7.221	970.4	212.2	352.6	564.8	4100	2.500	1101.4	2050.4	0.0	2050.4
4200	7.238	985.6	215.5	359.4	575.0	4200	2.500	1118.6	2082.5	0.0	2082.5
4300	7.255	1000.8	218.9	366.3	585.1	4300	2.500	1135.7	2114.3	0.0	2114.3
4400	7.271	1016.0	222.2	373.1	595.3	4400	2.500	1152.7	2145.9	0.0	2145.9
4500	7.287	1031.1	225.5	379.9	605.4	4500	2.500	1169.5	2177.3	0.0	2177.3
4600	7.302	1046.2	228.8	386.7	615.5	4600	2.500	1186.2	2208.4	0.0	2208.4
4700	7.317	1061.3	232.1	393.5	625.6	4700	2.500	1202.8	2239.2	0.0	2239.2
4800	7.332	1076.4	235.4	400.4	635.7	4800	2.500	1219.3	2269.8	0.0	2269.8
4900	7.347	1091.1	238.6	407.1	645.7	4900	2.500	1235.6	2300.2	0.0	2300.2
5000	7.361	1105.7	241.8	413.7	655.5	5000	2.500	1251.8	2330.4	0.0	2330.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Hg						$HgBr_2$					
$M = 200.61$, $\sigma = 2.969$, $\epsilon/k = 750$						$M = 360.44$, $\sigma = 5.080$, $\epsilon/k = 686.2$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	-----	---	---	---	100	6.099	----	---	---	---
200	2.500	209.1	7.8	0.0	7.8	200	6.963	98.8	2.0	3.2	5.3
300	2.500	298.3	11.1	0.0	11.1	300	7.237	141.8	2.9	4.9	7.8
400	2.500	391.9	14.6	0.0	14.6	400	7.346	187.5	3.9	6.6	10.5
500	2.500	490.2	18.2	0.0	18.2	500	7.400	235.0	4.9	8.4	13.2
600	2.500	590.2	21.9	0.0	21.9	600	7.430	283.0	5.9	10.2	16.0
700	2.500	690.3	25.6	0.0	25.6	700	7.448	330.6	6.8	11.9	18.7
800	2.500	788.9	29.3	0.0	29.3	800	7.460	377.2	7.8	13.6	21.4
900	2.500	885.9	32.9	0.0	32.9	900	7.468	422.9	8.7	15.3	24.0
1000	2.500	980.9	36.4	0.0	36.4	1000	7.474	467.3	9.7	16.9	26.6
1100	2.500	1073.4	39.9	0.0	39.9	1100	7.479	510.2	10.5	18.5	29.0
1200	2.500	1163.0	43.2	0.0	43.2	1200	7.482	551.7	11.4	20.0	31.4
1300	2.500	1249.9	46.4	0.0	46.4	1300	7.485	591.8	12.2	21.5	33.7
1400	2.500	1334.0	49.6	0.0	49.6	1400	7.487	630.6	13.0	22.9	35.9
1500	2.500	1415.7	52.6	0.0	52.6	1500	7.489	668.2	13.8	24.3	38.1
1600	2.500	1495.0	55.5	0.0	55.5	1600	7.490	704.7	14.6	25.6	40.2
1700	2.500	1572.1	58.4	0.0	58.4	1700	7.491	740.2	15.3	26.9	42.2
1800	2.500	1647.3	61.2	0.0	61.2	1800	7.492	774.7	16.0	28.1	44.2
1900	2.500	1720.6	63.9	0.0	63.9	1900	7.493	808.5	16.7	29.4	46.1
2000	2.500	1792.2	66.6	0.0	66.6	2000	7.494	841.4	17.4	30.6	48.0
2100	2.500	1862.2	69.2	0.0	69.2	2100	7.494	873.6	18.1	31.8	49.8
2200	2.500	1930.7	71.7	0.0	71.7	2200	7.495	905.1	18.7	32.9	51.6
2300	2.500	1997.9	74.2	0.0	74.2	2300	7.495	935.9	19.4	34.0	53.4
2400	2.500	2063.6	76.7	0.0	76.7	2400	7.496	966.1	20.0	35.1	55.1
2500	2.500	2128.2	79.1	0.0	79.1	2500	7.496	995.7	20.6	36.2	56.8
2600	2.500	2191.5	81.4	0.0	81.4	2600	7.496	1024.7	21.2	37.3	58.4
2700	2.500	2253.7	83.7	0.0	83.7	2700	7.496	1053.2	21.8	38.3	60.1
2800	2.500	2314.7	86.0	0.0	86.0	2800	7.497	1081.4	22.4	39.3	61.7
2900	2.500	2374.7	88.2	0.0	88.2	2900	7.497	1109.1	22.9	40.3	63.3
3000	2.500	2433.6	90.4	0.0	90.4	3000	7.497	1136.2	23.5	41.3	64.8
3100	2.500	2492.3	92.6	0.0	92.6	3100	7.497	1162.8	24.0	42.3	66.3
3200	2.500	2549.7	94.7	0.0	94.7	3200	7.497	1189.1	24.6	43.2	67.8
3300	2.500	2606.1	96.8	0.0	96.8	3300	7.498	1214.9	25.1	44.2	69.3
3400	2.500	2661.7	98.9	0.0	98.9	3400	7.498	1240.4	25.6	45.1	70.8
3500	2.500	2716.4	100.9	0.0	100.9	3500	7.498	1265.5	26.2	46.0	72.2
3600	2.500	2770.4	102.9	0.0	102.9	3600	7.498	1290.4	26.7	46.9	73.6
3700	2.500	2823.7	104.9	0.0	104.9	3700	7.498	1315.0	27.2	47.8	75.0
3800	2.500	2876.4	106.9	0.0	106.9	3800	7.498	1339.2	27.7	48.7	76.4
3900	2.501	2928.5	108.8	0.0	108.8	3900	7.498	1363.3	28.2	49.6	77.8
4000	2.501	2980.0	110.7	0.0	110.7	4000	7.498	1387.1	28.7	50.5	79.1
4100	2.501	3031.0	112.6	0.0	112.6	4100	7.498	1410.6	29.2	51.3	80.5
4200	2.501	3081.5	114.5	0.1	114.5	4200	7.499	1434.0	29.6	52.2	81.8
4300	2.502	3131.5	116.3	0.1	116.4	4300	7.499	1457.1	30.1	53.0	83.1
4400	2.503	3181.1	118.2	0.1	118.3	4400	7.499	1480.0	30.6	53.8	84.4
4500	2.503	3230.2	120.0	0.1	120.1	4500	7.499	1502.6	31.1	54.7	85.7
4600	2.504	3278.8	121.8	0.2	122.0	4600	7.499	1525.1	31.5	55.5	87.0
4700	2.505	3327.1	123.6	0.2	123.8	4700	7.499	1547.4	32.0	56.3	88.3
4800	2.506	3374.9	125.4	0.3	125.7	4800	7.499	1569.5	32.4	57.1	89.5
4900	2.508	3422.4	127.1	0.4	127.5	4900	7.499	1591.4	32.9	57.9	90.8
5000	2.510	3469.4	128.9	0.4	129.3	5000	7.499	1613.1	33.4	58.7	92.0

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$HgCl_2$						HgI_2					
M = 271.52, σ = 4.550, ϵ/k = 750						M = 454.43, σ = 5.625, ϵ/k = 695.6					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	5.550	-----	---	---	---	100	6.513	----	---	---	---
200	6.522	103.6	2.8	4.0	6.9	200	7.176	90.1	1.5	2.4	3.9
300	6.978	147.7	4.1	6.4	10.4	300	7.347	129.1	2.1	3.6	5.7
400	7.185	194.1	5.3	8.8	14.1	400	7.412	170.5	2.8	4.8	7.6
500	7.291	242.8	6.7	11.2	17.9	500	7.443	213.7	3.5	6.1	9.6
600	7.352	292.4	8.0	13.7	21.7	600	7.460	257.3	4.2	7.4	11.6
700	7.390	341.9	9.4	16.2	25.5	700	7.471	300.7	4.9	8.6	13.6
800	7.415	390.8	10.7	18.6	29.3	800	7.478	343.1	5.6	9.9	15.5
900	7.433	438.8	12.0	20.9	33.0	900	7.482	384.9	6.3	11.1	17.4
1000	7.445	485.9	13.3	23.2	36.6	1000	7.486	425.4	7.0	12.2	19.2
1100	7.455	531.7	14.6	25.5	40.0	1100	7.488	464.7	7.6	13.4	21.0
1200	7.462	576.1	15.8	27.6	43.4	1200	7.490	502.6	8.2	14.5	22.7
1300	7.467	619.1	17.0	29.7	46.7	1300	7.491	539.3	8.8	15.5	24.4
1400	7.472	660.8	18.1	31.7	49.9	1400	7.493	574.7	9.4	16.6	26.0
1500	7.475	701.3	19.2	33.7	53.0	1500	7.494	609.1	10.0	17.6	27.5
1600	7.478	740.6	20.3	35.6	55.9	1600	7.494	642.6	10.5	18.5	29.1
1700	7.481	778.8	21.4	37.5	58.8	1700	7.495	675.0	11.1	19.5	30.5
1800	7.483	816.0	22.4	39.3	61.7	1800	7.496	706.7	11.6	20.4	32.0
1900	7.485	852.3	23.4	41.0	64.4	1900	7.496	737.5	12.1	21.3	33.4
2000	7.486	887.8	24.4	42.8	67.1	2000	7.496	767.7	12.6	22.1	34.7
2100	7.487	922.5	25.3	44.4	69.8	2100	7.497	797.1	13.1	23.0	36.1
2200	7.489	956.4	26.3	46.1	72.3	2200	7.497	826.0	13.5	23.8	37.4
2300	7.490	989.7	27.2	47.7	74.9	2300	7.497	854.2	14.0	24.6	38.6
2400	7.490	1022.3	28.1	49.3	77.3	2400	7.497	881.8	14.5	25.4	39.9
2500	7.491	1054.2	28.9	50.8	79.8	2500	7.498	908.9	14.9	26.2	41.1
2600	7.492	1085.6	29.8	52.4	82.1	2600	7.498	935.5	15.3	27.0	42.3
2700	7.492	1116.4	30.6	53.8	84.5	2700	7.498	961.6	15.8	27.7	43.5
2800	7.493	1146.6	31.5	55.3	86.8	2800	7.498	987.3	16.2	28.5	44.7
2900	7.493	1176.3	32.3	56.7	89.0	2900	7.498	1012.7	16.6	29.2	45.8
3000	7.494	1205.5	33.1	58.2	91.2	3000	7.498	1037.5	17.0	29.9	47.0
3100	7.494	1234.6	33.9	59.6	93.5	3100	7.498	1062.0	17.4	30.6	48.1
3200	7.495	1263.0	34.7	60.9	95.6	3200	7.499	1086.0	17.8	31.3	49.1
3300	7.495	1291.0	35.4	62.3	97.7	3300	7.499	1109.6	18.2	32.0	50.2
3400	7.495	1318.5	36.2	63.6	99.8	3400	7.499	1132.9	18.6	32.7	51.3
3500	7.495	1345.6	36.9	64.9	101.9	3500	7.499	1156.0	19.0	33.4	52.3
3600	7.496	1372.3	37.7	66.2	103.9	3600	7.499	1178.7	19.3	34.0	53.3
3700	7.496	1398.8	38.4	67.5	105.9	3700	7.499	1201.2	19.7	34.7	54.4
3800	7.496	1424.8	39.1	68.8	107.9	3800	7.499	1223.4	20.1	35.3	55.4
3900	7.496	1450.6	39.8	70.0	109.8	3900	7.499	1245.4	20.4	35.9	56.4
4000	7.497	1476.2	40.5	71.3	111.8	4000	7.499	1267.1	20.8	36.6	57.3
4100	7.497	1501.4	41.2	72.5	113.7	4100	7.499	1288.7	21.1	37.2	58.3
4200	7.497	1526.4	41.9	73.7	115.6	4200	7.499	1310.0	21.5	37.8	59.3
4300	7.497	1551.2	42.6	74.9	117.5	4300	7.499	1331.1	21.8	38.4	60.2
4400	7.497	1575.8	43.2	76.1	119.3	4400	7.499	1352.1	22.2	39.0	61.2
4500	7.497	1600.1	43.9	77.3	121.2	4500	7.499	1372.8	22.5	39.6	62.1
4600	7.497	1624.2	44.6	78.4	123.0	4600	7.499	1393.4	22.9	40.2	63.1
4700	7.497	1648.1	45.2	79.6	124.8	4700	7.499	1413.8	23.2	40.8	64.0
4800	7.498	1671.8	45.9	80.7	126.6	4800	7.499	1434.0	23.5	41.4	64.9
4900	7.498	1695.3	46.5	81.9	128.4	4900	7.499	1454.0	23.8	42.0	65.8
5000	7.498	1718.6	47.2	83.0	130.2	5000	7.499	1473.8	24.2	42.5	66.7

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

I						ICl					
M = 126.91, σ = 4.320, ϵ/k = 210.7						M = 162.37, σ = 4.688, ϵ/k = 437.3					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	69.7	4.1	0.0	4.1	100	3.630	50.6	2.3	0.9	3.2
200	2.500	139.8	8.2	0.0	8.2	200	4.064	93.1	4.3	2.4	6.6
300	2.500	207.9	12.2	0.0	12.2	300	4.279	139.0	6.4	4.0	10.4
400	2.500	269.6	15.8	0.0	15.8	400	4.379	186.4	8.6	5.7	14.2
500	2.500	325.0	19.1	0.0	19.1	500	4.433	232.8	10.7	7.3	18.0
600	2.500	375.7	22.1	0.0	22.1	600	4.467	277.8	12.7	8.8	21.6
700	2.500	422.7	24.8	0.0	24.8	700	4.490	320.6	14.7	10.3	25.0
800	2.500	466.6	27.4	0.0	27.4	800	4.507	361.2	16.6	11.7	28.3
900	2.500	508.1	29.8	0.0	29.8	900	4.520	399.7	18.3	13.0	31.4
1000	2.501	547.3	32.1	0.0	32.2	1000	4.531	436.3	20.0	14.3	34.3
1100	2.502	584.7	34.3	0.0	34.4	1100	4.541	471.4	21.6	15.5	37.2
1200	2.505	620.7	36.4	0.1	36.5	1200	4.550	505.1	23.2	16.7	39.9
1300	2.508	655.5	38.5	0.1	38.6	1300	4.558	537.5	24.7	17.9	42.5
1400	2.512	689.3	40.5	0.2	40.7	1400	4.566	568.8	26.1	19.0	45.1
1500	2.518	722.1	42.4	0.3	42.7	1500	4.573	599.1	27.5	20.1	47.6
1600	2.525	754.0	44.3	0.4	44.7	1600	4.580	628.4	28.8	21.1	50.0
1700	2.533	785.0	46.1	0.5	46.6	1700	4.587	656.9	30.1	22.1	52.3
1800	2.542	815.2	47.9	0.7	48.6	1800	4.593	684.7	31.4	23.2	54.6
1900	2.552	844.7	49.6	0.9	50.5	1900	4.600	711.7	32.7	24.1	56.8
2000	2.563	873.4	51.3	1.1	52.4	2000	4.606	738.0	33.9	25.1	59.0
2100	2.574	901.5	52.9	1.4	54.3	2100	4.612	763.6	35.0	26.1	61.1
2200	2.585	929.0	54.6	1.6	56.2	2200	4.618	788.7	36.2	27.0	63.2
2300	2.596	956.0	56.1	1.9	58.0	2300	4.624	813.3	37.3	27.9	65.2
2400	2.608	982.5	57.7	2.2	59.9	2400	4.631	837.4	38.4	28.8	67.3
2500	2.619	1008.5	59.2	2.5	61.7	2500	4.636	861.2	39.5	29.7	69.2
2600	2.630	1034.2	60.7	2.8	63.5	2600	4.642	884.5	40.6	30.6	71.2
2700	2.640	1059.5	62.2	3.1	65.3	2700	4.648	907.5	41.7	31.5	73.2
2800	2.650	1084.6	63.7	3.4	67.1	2800	4.654	930.2	42.7	32.4	75.1
2900	2.660	1109.4	65.1	3.7	68.8	2900	4.660	952.6	43.7	33.2	77.0
3000	2.669	1134.1	66.6	4.0	70.6	3000	4.666	974.6	44.7	34.1	78.8
3100	2.677	1158.7	68.0	4.2	72.3	3100	4.672	996.3	45.7	35.0	80.7
3200	2.685	1183.2	69.5	4.5	74.0	3200	4.677	1017.8	46.7	35.8	82.5
3300	2.693	1207.7	70.9	4.8	75.7	3300	4.683	1038.9	47.7	36.6	84.3
3400	2.699	1232.0	72.3	5.1	77.4	3400	4.689	1059.8	48.6	37.5	86.1
3500	2.705	1255.6	73.7	5.3	79.1	3500	4.695	1080.4	49.6	38.3	87.9
3600	2.711	1279.0	75.1	5.6	80.7	3600	4.700	1100.8	50.5	39.1	89.7
3700	2.716	1302.1	76.5	5.8	82.3	3700	4.706	1120.9	51.4	39.9	91.4
3800	2.720	1325.0	77.8	6.0	83.8	3800	4.712	1140.7	52.4	40.8	93.1
3900	2.724	1347.6	79.1	6.2	85.4	3900	4.718	1160.3	53.3	41.6	94.8
4000	2.728	1370.1	80.5	6.4	86.9	4000	4.723	1179.7	54.1	42.4	96.5
4100	2.731	1392.3	81.8	6.6	88.4	4100	4.729	1198.9	55.0	43.2	98.2
4200	2.733	1414.3	83.0	6.8	89.9	4200	4.735	1217.8	55.9	44.0	99.9
4300	2.735	1436.1	84.3	7.0	91.3	4300	4.740	1236.6	56.8	44.8	101.5
4400	2.737	1457.8	85.6	7.1	92.7	4400	4.746	1255.1	57.6	45.5	103.1
4500	2.738	1479.2	86.9	7.3	94.2	4500	4.752	1273.5	58.4	46.3	104.8
4600	2.740	1500.5	88.1	7.4	95.5	4600	4.757	1291.7	59.3	47.1	106.4
4700	2.740	1521.6	89.3	7.6	96.9	4700	4.763	1309.7	60.1	47.9	108.0
4800	2.741	1542.5	90.6	7.7	98.3	4800	4.769	1327.5	60.9	48.7	109.6
4900	2.741	1563.3	91.8	7.8	99.6	4900	4.774	1345.2	61.7	49.4	111.2
5000	2.741	1583.9	93.0	7.9	100.9	5000	4.780	1362.8	62.5	50.2	112.7

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TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

I_2						Kr					
$M = 253.82$, $\sigma = 5.160$, $\epsilon/k = 474.2$						$M = 83.80$, $\sigma = 3.655$, $\epsilon/k = 178.9$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.986	50.9	1.5	0.8	2.3	100	2.500	85.5	7.6	0.0	7.6
200	4.337	92.7	2.7	1.8	4.5	200	2.500	172.1	15.3	0.0	15.3
300	4.437	137.6	4.0	2.8	6.8	300	2.500	252.8	22.5	0.0	22.5
400	4.479	184.5	5.4	3.8	9.2	400	2.500	323.8	28.8	0.0	28.8
500	4.503	230.9	6.8	4.8	11.6	500	2.500	387.3	34.4	0.0	34.4
600	4.519	276.2	8.1	5.8	13.9	600	2.500	445.3	39.6	0.0	39.6
700	4.531	319.8	9.4	6.7	16.1	700	2.500	498.9	44.4	0.0	44.4
800	4.542	361.3	10.6	7.6	18.2	800	2.500	549.1	48.8	0.0	48.8
900	4.551	400.8	11.8	8.5	20.3	900	2.500	596.2	53.0	0.0	53.0
1000	4.560	438.4	12.9	9.3	22.2	1000	2.500	641.0	57.0	0.0	57.0
1100	4.568	474.4	13.9	10.1	24.1	1100	2.500	684.1	60.8	0.0	60.8
1200	4.575	509.1	14.9	10.9	25.9	1200	2.500	725.6	64.5	0.0	64.5
1300	4.583	542.4	15.9	11.7	27.6	1300	2.500	765.8	68.1	0.0	68.1
1400	4.590	574.6	16.9	12.4	29.3	1400	2.500	804.6	71.6	0.0	71.6
1500	4.598	605.7	17.8	13.1	30.9	1500	2.500	842.3	74.9	0.0	74.9
1600	4.605	636.0	18.7	13.8	32.5	1600	2.500	878.8	78.1	0.0	78.1
1700	4.612	665.3	19.5	14.5	34.1	1700	2.500	914.3	81.3	0.0	81.3
1800	4.619	693.8	20.4	15.2	35.6	1800	2.500	948.8	84.4	0.0	84.4
1900	4.626	721.6	21.2	15.9	37.0	1900	2.500	982.5	87.4	0.0	87.4
2000	4.633	748.8	22.0	16.5	38.5	2000	2.500	1015.4	90.3	0.0	90.3
2100	4.640	775.2	22.8	17.1	39.9	2100	2.500	1047.7	93.2	0.0	93.2
2200	4.647	801.1	23.5	17.8	41.3	2200	2.500	1079.4	96.0	0.0	96.0
2300	4.654	826.3	24.3	18.4	42.7	2300	2.500	1110.6	98.8	0.0	98.8
2400	4.661	851.1	25.0	19.0	44.0	2400	2.500	1141.4	101.5	0.0	101.5
2500	4.667	875.4	25.7	19.6	45.3	2500	2.500	1172.0	104.2	0.0	104.2
2600	4.674	899.3	26.4	20.2	46.6	2600	2.500	1202.3	106.9	0.0	106.9
2700	4.681	922.9	27.1	20.8	47.9	2700	2.500	1232.5	109.6	0.0	109.6
2800	4.688	946.1	27.8	21.4	49.2	2800	2.500	1262.7	112.3	0.0	112.3
2900	4.695	969.0	28.4	22.0	50.4	2900	2.500	1292.5	114.9	0.0	114.9
3000	4.702	991.6	29.1	22.6	51.7	3000	2.500	1321.6	117.5	0.0	117.5
3100	4.708	1013.8	29.8	23.1	52.9	3100	2.500	1350.2	120.1	0.0	120.1
3200	4.715	1035.8	30.4	23.7	54.1	3200	2.500	1378.5	122.6	0.0	122.6
3300	4.722	1057.5	31.0	24.3	55.3	3300	2.500	1406.5	125.1	0.0	125.1
3400	4.729	1078.9	31.7	24.9	56.5	3400	2.500	1434.1	127.5	0.0	127.5
3500	4.735	1100.1	32.3	25.4	57.7	3500	2.500	1461.5	130.0	0.0	130.0
3600	4.742	1121.0	32.9	26.0	58.9	3600	2.500	1488.5	132.4	0.0	132.4
3700	4.749	1141.6	33.5	26.5	60.1	3700	2.500	1515.3	134.8	0.0	134.8
3800	4.756	1162.1	34.1	27.1	61.2	3800	2.500	1541.8	137.1	0.0	137.1
3900	4.763	1182.2	34.7	27.6	62.4	3900	2.500	1568.0	139.4	0.0	139.4
4000	4.769	1202.2	35.3	28.2	63.5	4000	2.500	1594.0	141.8	0.0	141.8
4100	4.776	1221.9	35.9	28.7	64.6	4100	2.500	1619.8	144.0	0.0	144.0
4200	4.783	1241.4	36.4	29.3	65.7	4200	2.500	1645.3	146.3	0.0	146.3
4300	4.790	1260.6	37.0	29.8	66.8	4300	2.500	1670.6	148.6	0.0	148.6
4400	4.796	1279.7	37.6	30.4	67.9	4400	2.500	1695.6	150.8	0.0	150.8
4500	4.803	1298.6	38.1	30.9	69.0	4500	2.500	1720.5	153.0	0.0	153.0
4600	4.810	1317.3	38.7	31.4	70.1	4600	2.500	1745.2	155.2	0.0	155.2
4700	4.817	1335.8	39.2	32.0	71.2	4700	2.500	1769.6	157.4	0.0	157.4
4800	4.823	1354.1	39.8	32.5	72.3	4800	2.500	1793.9	159.5	0.0	159.5
4900	4.830	1372.3	40.3	33.0	73.3	4900	2.500	1818.0	161.7	0.0	161.7
5000	4.837	1390.3	40.8	33.6	74.4	5000	2.500	1841.9	163.8	0.0	163.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Li						LiBr					
$M = 6.940$, $\sigma = 2.850$, $\epsilon/k = 1899$						$M = 86.86$, $\sigma = 3.748$, $\epsilon/k = 1815$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	----	----	---	----	100	3.519	-----	---	---	----
200	2.500	----	----	---	----	200	3.795	-----	---	---	----
300	2.500	----	----	---	----	300	4.069	-----	---	---	----
400	2.500	55.1	59.2	0.0	59.2	400	4.234	114.4	9.8	6.0	15.8
500	2.500	66.4	71.4	0.0	71.4	500	4.331	138.1	11.8	7.6	19.5
600	2.500	77.7	83.4	0.0	83.4	600	4.393	161.6	13.9	9.2	23.1
700	2.500	89.0	95.6	0.0	95.6	700	4.434	185.3	15.9	10.8	26.7
800	2.500	100.5	107.9	0.0	107.9	800	4.465	209.6	18.0	12.4	30.4
900	2.500	112.2	120.5	0.0	120.5	900	4.488	234.5	20.1	14.1	34.2
1000	2.500	124.3	133.5	0.0	133.5	1000	4.506	259.9	22.3	15.8	38.1
1100	2.500	136.6	146.7	0.0	146.7	1100	4.522	285.9	24.5	17.5	42.0
1200	2.500	149.1	160.1	0.0	160.1	1200	4.535	312.2	26.8	19.2	46.0
1300	2.500	161.7	173.7	0.0	173.7	1300	4.547	338.7	29.1	20.9	50.0
1400	2.500	174.4	187.3	0.0	187.3	1400	4.558	365.3	31.3	22.7	54.0
1500	2.500	187.1	200.9	0.0	201.0	1500	4.567	391.9	33.6	24.5	58.1
1600	2.501	199.8	214.6	0.1	214.7	1600	4.577	418.5	35.9	26.2	62.1
1700	2.502	212.5	228.2	0.1	228.4	1700	4.585	445.0	38.2	28.0	66.2
1800	2.503	225.2	241.8	0.2	242.1	1800	4.593	471.5	40.4	29.8	70.3
1900	2.505	237.9	255.4	0.4	255.8	1900	4.601	497.4	42.7	31.6	74.2
2000	2.508	250.2	268.7	0.7	269.4	2000	4.609	523.3	44.9	33.3	78.2
2100	2.511	262.6	282.0	1.1	283.1	2100	4.616	549.1	47.1	35.1	82.2
2200	2.517	274.9	295.2	1.7	296.9	2200	4.624	574.6	49.3	36.9	86.2
2300	2.523	287.1	308.3	2.5	310.8	2300	4.631	600.0	51.5	38.6	90.1
2400	2.532	299.2	321.3	3.6	324.9	2400	4.638	625.1	53.6	40.4	94.0
2500	2.542	311.3	334.2	4.9	339.1	2500	4.645	649.9	55.8	42.1	97.9
2600	2.554	323.1	347.0	6.5	353.5	2600	4.652	674.4	57.9	43.8	101.7
2700	2.567	334.9	359.6	8.5	368.1	2700	4.658	698.6	59.9	45.5	105.5
2800	2.583	346.5	372.0	10.9	383.0	2800	4.665	722.5	62.0	47.2	109.2
2900	2.601	357.9	384.4	13.7	398.1	2900	4.672	746.1	64.0	48.9	113.0
3000	2.621	369.3	396.5	16.9	413.4	3000	4.678	769.4	66.0	50.6	116.6
3100	2.643	380.4	408.5	20.6	429.1	3100	4.685	792.4	68.0	52.3	120.3
3200	2.667	391.5	420.4	24.7	445.1	3200	4.691	815.1	69.9	53.9	123.9
3300	2.693	402.4	432.1	29.3	461.4	3300	4.698	837.4	71.8	55.6	127.4
3400	2.721	413.1	443.6	34.5	478.1	3400	4.704	859.5	73.7	57.2	131.0
3500	2.750	423.8	455.0	40.1	495.1	3500	4.711	881.4	75.6	58.8	134.5
3600	2.782	434.3	466.3	46.3	512.6	3600	4.717	902.9	77.5	60.5	137.9
3700	2.815	444.6	477.5	52.9	530.4	3700	4.724	924.2	79.3	62.1	141.4
3800	2.850	454.9	488.5	60.2	548.6	3800	4.730	945.3	81.1	63.7	144.8
3900	2.887	465.1	499.4	68.0	567.3	3900	4.736	966.1	82.9	65.2	148.1
4000	2.925	475.1	510.1	76.3	586.5	4000	4.743	986.7	84.7	66.8	151.5
4100	2.965	485.0	520.8	85.3	606.1	4100	4.749	1007.0	86.4	68.4	154.8
4200	3.007	494.8	531.3	94.9	626.2	4200	4.755	1027.1	88.1	70.0	158.1
4300	3.051	504.5	541.8	105.1	646.9	4300	4.762	1047.1	89.8	71.5	161.4
4400	3.087	514.1	552.1	114.2	666.2	4400	4.768	1066.8	91.5	73.1	164.6
4500	3.131	523.7	562.3	125.0	687.3	4500	4.774	1086.3	93.2	74.6	167.8
4600	3.178	533.1	572.4	136.6	709.0	4600	4.781	1105.6	94.9	76.1	171.0
4700	3.226	542.4	582.4	148.9	731.3	4700	4.787	1124.7	96.5	77.7	174.2
4800	3.276	551.7	592.4	161.8	754.1	4800	4.793	1143.7	98.1	79.2	177.3
4900	3.327	560.8	602.2	175.3	777.5	4900	4.799	1162.4	99.7	80.7	180.5
5000	3.380	569.9	611.9	189.6	801.5	5000	4.806	1181.0	101.3	82.2	183.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

LiCl						LiF					
$M = 42.40$, $\sigma = 3.708$, $\epsilon/k = 1919$						$M = 25.94$, $\sigma = 3.278$, $\epsilon/k = 2305$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.511	----	----	---	----	100	3.502	----	----	----	----
200	3.729	----	----	---	----	200	3.572	----	----	----	----
300	4.002	----	----	---	----	300	3.770	----	----	----	----
400	4.182	80.2	14.1	8.3	22.5	400	3.968	----	----	----	----
500	4.294	96.7	17.0	10.7	27.7	500	4.118	90.9	26.1	14.9	41.0
600	4.365	113.0	19.9	13.0	32.9	600	4.226	106.0	30.4	18.5	48.9
700	4.415	129.4	22.7	15.3	38.1	700	4.303	120.9	34.7	22.0	56.8
800	4.450	146.1	25.7	17.6	43.3	800	4.360	135.8	39.0	25.6	64.6
900	4.478	163.1	28.7	20.0	48.6	900	4.404	150.9	43.4	29.1	72.4
1000	4.500	180.6	31.7	22.3	54.1	1000	4.439	166.3	47.8	32.6	80.4
1100	4.518	198.5	34.9	24.8	59.7	1100	4.467	181.9	52.3	36.2	88.5
1200	4.533	216.6	38.1	27.2	65.3	1200	4.490	197.9	56.9	39.8	96.7
1300	4.547	234.9	41.3	29.7	71.0	1300	4.510	214.2	61.5	43.5	105.1
1400	4.559	253.3	44.5	32.3	76.8	1400	4.528	230.7	66.3	47.3	113.6
1500	4.570	271.8	47.8	34.8	82.6	1500	4.543	247.3	71.1	51.1	122.2
1600	4.581	290.2	51.0	37.4	88.4	1600	4.557	264.1	75.9	54.9	130.8
1700	4.591	308.7	54.3	39.9	94.2	1700	4.570	280.9	80.7	58.8	139.5
1800	4.600	327.1	57.5	42.5	100.0	1800	4.582	297.8	85.6	62.7	148.3
1900	4.609	345.5	60.7	45.1	105.8	1900	4.594	314.7	90.4	66.6	157.0
2000	4.617	363.5	63.9	47.6	111.5	2000	4.604	331.5	95.2	70.5	165.8
2100	4.626	381.5	67.0	50.2	117.2	2100	4.614	348.4	100.1	74.5	174.6
2200	4.634	399.4	70.2	52.7	122.9	2200	4.624	365.2	104.9	78.4	183.3
2300	4.642	417.2	73.3	55.3	128.6	2300	4.633	381.9	109.7	82.4	192.1
2400	4.650	434.8	76.4	57.8	134.3	2400	4.642	398.4	114.4	86.3	200.7
2500	4.657	452.3	79.5	60.4	139.9	2500	4.651	414.8	119.2	90.2	209.4
2600	4.665	469.6	82.5	62.9	145.4	2600	4.660	431.1	123.9	94.2	218.0
2700	4.672	486.7	85.5	65.4	151.0	2700	4.668	447.4	128.5	98.1	226.7
2800	4.680	503.6	88.5	67.9	156.4	2800	4.677	463.6	133.2	102.1	235.2
2900	4.687	520.3	91.5	70.4	161.9	2900	4.685	479.7	137.8	106.0	243.8
3000	4.695	536.8	94.4	72.9	167.2	3000	4.693	495.7	142.4	109.9	252.3
3100	4.702	553.1	97.2	75.3	172.6	3100	4.701	511.5	146.9	113.8	260.8
3200	4.709	569.2	100.0	77.8	177.8	3200	4.709	527.2	151.5	117.7	269.2
3300	4.716	585.1	102.8	80.2	183.1	3300	4.716	542.7	155.9	121.6	277.5
3400	4.723	600.8	105.6	82.6	188.2	3400	4.724	558.1	160.3	125.5	285.8
3500	4.730	616.4	108.3	85.0	193.4	3500	4.732	573.3	164.7	129.4	294.1
3600	4.737	631.7	111.0	87.4	198.5	3600	4.739	588.3	169.0	133.2	302.3
3700	4.744	646.8	113.7	89.8	203.5	3700	4.747	603.2	173.3	137.1	310.4
3800	4.751	661.8	116.3	92.2	208.5	3800	4.754	618.0	177.5	140.9	318.4
3900	4.758	676.6	118.9	94.5	213.5	3900	4.762	632.6	181.7	144.7	326.4
4000	4.765	691.2	121.5	96.9	218.4	4000	4.769	647.0	185.9	148.5	334.4
4100	4.772	705.7	124.0	99.2	223.3	4100	4.777	661.3	190.0	152.3	342.3
4200	4.779	720.0	126.6	101.5	228.1	4200	4.784	675.5	194.1	156.0	350.1
4300	4.786	734.2	129.0	103.9	232.9	4300	4.791	689.5	198.1	159.8	357.9
4400	4.793	748.2	131.5	106.2	237.7	4400	4.799	703.4	202.1	163.5	365.6
4500	4.800	762.1	134.0	108.5	242.4	4500	4.806	717.1	206.0	167.2	373.2
4600	4.807	775.9	136.4	110.7	247.1	4600	4.813	730.8	209.9	170.9	380.9
4700	4.814	789.5	138.8	113.0	251.8	4700	4.820	744.2	213.8	174.6	388.4
4800	4.821	803.0	141.1	115.3	256.4	4800	4.828	757.6	217.7	178.3	396.0
4900	4.828	816.4	143.5	117.6	261.0	4900	4.835	770.8	221.5	182.0	403.5
5000	4.834	829.6	145.8	119.8	265.6	5000	4.842	784.0	225.2	185.7	410.9

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

LiI						LiO					
M = 133.85, σ = 4.180, ϵ/k = 1726						M = 22.94, σ = 3.334, ϵ/k = 450					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.570	-----	---	---	----	100	3.500	37.2	12.1	4.3	16.4
200	3.961	-----	---	---	----	200	3.530	68.3	22.2	8.0	30.2
300	4.211	-----	---	---	----	300	3.667	101.8	33.1	13.6	46.7
400	4.338	116.1	6.5	4.2	10.6	400	3.842	136.5	44.3	20.9	65.3
500	4.409	140.3	7.8	5.2	13.1	500	3.992	170.6	55.4	29.1	84.5
600	4.453	164.4	9.2	6.3	15.4	600	4.105	203.8	66.2	37.4	103.6
700	4.484	188.8	10.5	7.3	17.9	700	4.188	235.4	76.5	45.4	121.9
800	4.507	213.9	11.9	8.4	20.3	800	4.249	265.5	86.3	53.1	139.4
900	4.525	239.6	13.3	9.5	22.9	900	4.295	294.1	95.5	60.4	155.9
1000	4.540	266.0	14.8	10.6	25.4	1000	4.330	321.3	104.4	67.2	171.6
1100	4.553	292.7	16.3	11.8	28.1	1100	4.357	347.3	112.8	73.7	186.6
1200	4.565	319.8	17.8	12.9	30.7	1200	4.378	372.3	120.9	79.9	200.9
1300	4.576	347.0	19.3	14.1	33.4	1300	4.395	396.3	128.8	85.9	214.6
1400	4.586	374.2	20.8	15.3	36.1	1400	4.408	419.6	136.3	91.6	227.9
1500	4.596	401.4	22.3	16.5	38.8	1500	4.420	442.1	143.6	97.0	240.6
1600	4.605	428.6	23.9	17.7	41.5	1600	4.429	463.9	150.7	102.3	253.0
1700	4.614	455.7	25.4	18.9	44.3	1700	4.437	485.0	157.6	107.4	265.0
1800	4.623	482.3	26.9	20.1	46.9	1800	4.443	505.5	164.2	112.3	276.6
1900	4.632	508.8	28.3	21.3	49.6	1900	4.449	525.7	170.8	117.2	287.9
2000	4.640	535.2	29.8	22.4	52.2	2000	4.454	545.2	177.1	121.8	298.9
2100	4.648	561.3	31.3	23.6	54.9	2100	4.458	564.3	183.3	126.3	309.6
2200	4.656	587.3	32.7	24.8	57.5	2200	4.462	582.9	189.4	130.7	320.1
2300	4.664	612.9	34.1	26.0	60.1	2300	4.465	601.1	195.3	135.1	330.3
2400	4.672	638.2	35.5	27.2	62.7	2400	4.468	619.0	201.1	139.3	340.4
2500	4.680	663.2	36.9	28.3	65.3	2500	4.470	636.6	206.8	143.4	350.2
2600	4.688	687.9	38.3	29.5	67.8	2600	4.472	653.9	212.4	147.5	359.9
2700	4.696	712.3	39.7	30.7	70.3	2700	4.474	671.0	218.0	151.5	369.5
2800	4.704	736.3	41.0	31.8	72.8	2800	4.476	687.8	223.4	155.4	378.8
2900	4.711	759.9	42.3	32.9	75.2	2900	4.478	704.3	228.8	159.3	388.1
3000	4.719	783.3	43.6	34.1	77.7	3000	4.479	720.7	234.1	163.1	397.2
3100	4.727	806.3	44.9	35.2	80.1	3100	4.480	736.8	239.4	166.9	406.2
3200	4.734	829.1	46.2	36.3	82.5	3200	4.482	752.7	244.5	170.6	415.1
3300	4.742	851.5	47.4	37.4	84.8	3300	4.483	768.4	249.6	174.2	423.8
3400	4.750	873.6	48.6	38.5	87.2	3400	4.484	783.9	254.6	177.8	432.5
3500	4.757	895.5	49.9	39.6	89.5	3500	4.485	799.2	259.6	181.4	441.0
3600	4.765	917.1	51.1	40.7	91.8	3600	4.485	814.3	264.5	184.9	449.4
3700	4.772	938.4	52.2	41.8	94.0	3700	4.486	829.2	269.4	188.3	457.7
3800	4.780	959.5	53.4	42.9	96.3	3800	4.487	843.9	274.2	191.7	465.9
3900	4.788	980.3	54.6	43.9	98.5	3900	4.488	858.5	278.9	195.1	474.0
4000	4.795	1000.9	55.7	45.0	100.7	4000	4.488	872.9	283.6	198.4	482.0
4100	4.803	1021.3	56.9	46.1	102.9	4100	4.489	887.1	288.2	201.7	489.9
4200	4.810	1041.4	58.0	47.1	105.1	4200	4.489	901.2	292.7	205.0	497.7
4300	4.818	1061.3	59.1	48.2	107.3	4300	4.490	915.1	297.3	208.2	505.5
4400	4.825	1081.1	60.2	49.3	109.5	4400	4.490	928.8	301.7	211.4	513.1
4500	4.833	1100.6	61.3	50.3	111.6	4500	4.491	942.5	306.2	214.5	520.7
4600	4.840	1119.9	62.4	51.4	113.7	4600	4.491	956.0	310.6	217.7	528.2
4700	4.848	1139.0	63.4	52.4	115.8	4700	4.491	969.3	314.9	220.7	535.6
4800	4.855	1158.0	64.5	53.5	117.9	4800	4.492	982.6	319.2	223.8	543.0
4900	4.863	1176.8	65.5	54.5	120.0	4900	4.492	995.7	323.5	226.8	550.3
5000	4.870	1195.4	66.6	55.5	122.1	5000	4.492	1008.7	327.7	229.8	557.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Li_2						Li_2O					
$M = 13.88$, $\sigma = 3.200$, $\epsilon/k = 1899$						$M = 29.88$, $\sigma = 3.561$, $\epsilon/k = 1827$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.678	----	----	----	----	100	4.008	----	----	----	----
200	4.134	----	----	----	----	200	4.270	----	----	----	----
300	4.342	----	----	----	----	300	4.812	----	----	----	----
400	4.442	61.8	33.2	22.7	55.9	400	5.338	74.2	18.5	18.5	37.0
500	4.501	74.5	40.0	28.2	68.2	500	5.743	89.5	22.3	25.5	47.8
600	4.542	87.2	46.8	33.6	80.4	600	6.035	104.8	26.1	32.5	58.6
700	4.573	99.8	53.6	39.1	92.7	700	6.244	120.1	30.0	39.5	69.4
800	4.600	112.7	60.5	44.7	105.2	800	6.396	135.8	33.9	46.4	80.3
900	4.623	125.9	67.6	50.5	118.1	900	6.508	151.9	37.9	53.4	91.3
1000	4.644	139.5	74.9	56.5	131.4	1000	6.592	168.4	42.0	60.5	102.5
1100	4.665	153.3	82.3	62.7	145.0	1100	6.657	185.1	46.2	67.6	113.7
1200	4.684	167.3	89.8	69.0	158.9	1200	6.708	202.2	50.4	74.7	125.1
1300	4.703	181.4	97.4	75.5	172.9	1300	6.749	219.3	54.7	81.8	136.5
1400	4.721	195.7	105.1	82.1	187.2	1400	6.782	236.5	59.0	88.9	147.9
1500	4.739	209.9	112.7	88.8	201.5	1500	6.809	253.8	63.3	96.0	159.3
1600	4.757	224.2	120.4	95.6	216.0	1600	6.831	271.0	67.6	103.0	170.6
1700	4.774	238.4	128.0	102.5	230.5	1700	6.850	288.2	71.9	110.0	181.9
1800	4.792	252.6	135.6	109.4	245.1	1800	6.865	305.3	76.1	117.0	193.1
1900	4.809	266.8	143.3	116.4	259.7	1900	6.879	322.2	80.3	123.8	204.2
2000	4.826	280.7	150.7	123.4	274.1	2000	6.890	338.9	84.5	130.6	215.2
2100	4.843	294.6	158.1	130.4	288.6	2100	6.900	355.6	88.7	137.4	226.1
2200	4.860	308.4	165.6	137.5	303.1	2200	6.909	372.2	92.8	144.1	236.9
2300	4.877	322.1	172.9	144.7	317.6	2300	6.917	388.6	96.9	150.7	247.6
2400	4.894	335.7	180.2	151.9	332.1	2400	6.923	404.9	101.0	157.2	258.2
2500	4.911	349.2	187.5	159.1	346.6	2500	6.929	421.0	105.0	163.7	268.7
2600	4.928	362.5	194.6	166.3	360.9	2600	6.934	436.9	109.0	170.1	279.1
2700	4.945	375.7	201.7	173.5	375.2	2700	6.939	452.6	112.9	176.4	289.3
2800	4.961	388.7	208.7	180.8	389.5	2800	6.943	468.2	116.8	182.6	299.4
2900	4.978	401.5	215.6	188.0	403.6	2900	6.947	483.5	120.6	188.8	309.3
3000	4.995	414.2	222.4	195.3	417.7	3000	6.951	498.6	124.3	194.8	319.2
3100	5.012	426.8	229.1	202.6	431.7	3100	6.954	513.5	128.1	200.8	328.8
3200	5.028	439.1	235.8	209.8	445.6	3200	6.956	528.2	131.7	206.7	338.4
3300	5.045	451.4	242.3	217.1	459.4	3300	6.959	542.8	135.4	212.5	347.8
3400	5.062	463.4	248.8	224.4	473.2	3400	6.961	557.1	138.9	218.2	357.2
3500	5.078	475.4	255.2	231.6	486.9	3500	6.964	571.3	142.5	223.9	366.3
3600	5.095	487.1	261.6	238.9	500.5	3600	6.966	585.3	146.0	229.5	375.4
3700	5.112	498.8	267.8	246.2	514.0	3700	6.967	599.1	149.4	235.0	384.4
3800	5.128	510.3	274.0	253.5	527.5	3800	6.969	612.8	152.8	240.4	393.3
3900	5.145	521.7	280.1	260.8	540.9	3900	6.971	626.3	156.2	245.8	402.0
4000	5.162	532.9	286.1	268.1	554.2	4000	6.972	639.7	159.5	251.1	410.7
4100	5.178	544.1	292.1	275.4	567.5	4100	6.973	652.9	162.8	256.4	419.2
4200	5.195	555.1	298.0	282.7	580.7	4200	6.975	666.0	166.1	261.6	427.7
4300	5.211	566.0	303.9	290.0	593.9	4300	6.976	678.9	169.3	266.8	436.1
4400	5.228	576.8	309.7	297.4	607.0	4400	6.977	691.7	172.5	271.9	444.4
4500	5.245	587.4	315.4	304.7	620.1	4500	6.978	704.4	175.7	276.9	452.6
4600	5.261	598.0	321.1	312.1	633.1	4600	6.979	716.9	178.8	281.9	460.7
4700	5.278	608.5	326.7	319.4	646.1	4700	6.980	729.3	181.9	286.8	468.7
4800	5.295	618.8	332.3	326.8	659.1	4800	6.981	741.7	185.0	291.7	476.7
4900	5.311	629.1	337.8	334.2	672.0	4900	6.981	753.8	188.0	296.6	484.6
5000	5.328	639.3	343.2	341.6	684.9	5000	6.982	765.9	191.0	301.4	492.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Mg						MgCl					
$M = 24.32$, $\sigma = 2.926$, $\epsilon/k = 1614$						$M = 59.78$, $\sigma = 3.759$, $\epsilon/k = 714$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	-----	----	---	----	100	3.561	----	---	---	----
200	2.500	-----	----	---	----	200	3.940	72.5	9.0	4.6	13.6
300	2.500	-----	----	---	----	300	4.192	103.7	12.9	7.7	20.6
400	2.500	103.3	31.7	0.0	31.7	400	4.322	136.7	17.0	10.9	28.0
500	2.500	125.1	38.3	0.0	38.3	500	4.393	171.2	21.3	14.2	35.6
600	2.500	146.8	45.0	0.0	45.0	600	4.438	206.2	25.7	17.5	43.2
700	2.500	169.0	51.8	0.0	51.8	700	4.468	241.1	30.1	20.8	50.9
800	2.500	191.9	58.8	0.0	58.8	800	4.490	275.2	34.3	24.0	58.3
900	2.500	215.4	66.0	0.0	66.0	900	4.507	308.8	38.5	27.2	65.7
1000	2.500	239.3	73.3	0.0	73.3	1000	4.521	341.5	42.6	30.3	72.9
1100	2.500	263.6	80.8	0.0	80.8	1100	4.533	373.3	46.5	33.3	79.8
1200	2.500	288.1	88.3	0.0	88.3	1200	4.543	404.0	50.4	36.2	86.6
1300	2.500	312.6	95.8	0.0	95.8	1300	4.553	433.7	54.1	39.1	93.1
1400	2.500	337.0	103.3	0.0	103.3	1400	4.561	462.5	57.7	41.8	99.5
1500	2.500	361.5	110.8	0.0	110.8	1500	4.569	490.4	61.1	44.5	105.7
1600	2.500	385.8	118.2	0.0	118.2	1600	4.577	517.5	64.5	47.2	111.7
1700	2.500	409.7	125.6	0.0	125.6	1700	4.584	543.8	67.8	49.7	117.5
1800	2.500	433.5	132.8	0.0	132.8	1800	4.591	569.5	71.0	52.3	123.3
1900	2.500	457.2	140.1	0.0	140.1	1900	4.598	594.5	74.1	54.7	128.9
2000	2.500	480.7	147.3	0.0	147.3	2000	4.605	619.0	77.2	57.2	134.3
2100	2.501	503.9	154.4	0.0	154.4	2100	4.612	642.9	80.1	59.6	139.7
2200	2.501	526.8	161.4	0.1	161.5	2200	4.618	666.2	83.1	61.9	145.0
2300	2.502	549.5	168.4	0.1	168.5	2300	4.624	689.1	85.9	64.2	150.1
2400	2.503	571.8	175.2	0.2	175.4	2400	4.631	711.6	88.7	66.5	155.2
2500	2.505	593.8	181.9	0.3	182.3	2500	4.637	733.6	91.5	68.8	160.2
2600	2.507	615.4	188.6	0.5	189.1	2600	4.643	755.2	94.1	71.0	165.2
2700	2.511	636.8	195.1	0.7	195.8	2700	4.649	776.4	96.8	73.2	170.0
2800	2.515	657.8	201.6	1.1	202.6	2800	4.656	797.1	99.4	75.4	174.8
2900	2.520	678.5	207.9	1.5	209.4	2900	4.662	817.7	101.9	77.6	179.5
3000	2.527	699.0	214.2	2.1	216.2	3000	4.668	837.9	104.5	79.7	184.2
3100	2.536	719.1	220.4	2.8	223.1	3100	4.674	857.8	106.9	81.8	188.8
3200	2.546	739.0	226.4	3.7	230.1	3200	4.681	877.3	109.4	84.0	193.3
3300	2.559	758.6	232.4	4.8	237.3	3300	4.687	896.5	111.8	86.0	197.8
3400	2.573	777.9	238.4	6.2	244.5	3400	4.694	915.4	114.1	88.1	202.2
3500	2.590	797.0	244.2	7.8	252.0	3500	4.701	934.1	116.4	90.2	206.6
3600	2.610	815.9	250.0	9.6	259.6	3600	4.708	952.5	118.7	92.3	211.0
3700	2.631	834.5	255.7	11.8	267.5	3700	4.715	970.7	121.0	94.3	215.4
3800	2.656	852.9	261.3	14.4	275.7	3800	4.722	988.7	123.3	96.4	219.7
3900	2.683	871.1	266.9	17.2	284.1	3900	4.730	1006.6	125.5	98.5	224.0
4000	2.713	889.1	272.4	20.4	292.9	4000	4.738	1024.2	127.7	100.6	228.2
4100	2.746	906.8	277.9	24.1	301.9	4100	4.746	1041.6	129.9	102.7	232.5
4200	2.782	924.4	283.3	28.1	311.3	4200	4.755	1058.9	132.0	104.8	236.8
4300	2.820	941.8	288.6	32.5	321.1	4300	4.763	1076.0	134.1	106.9	241.0
4400	2.861	959.0	293.9	37.4	331.2	4400	4.773	1093.0	136.3	109.0	245.3
4500	2.905	976.1	299.1	42.6	341.7	4500	4.782	1109.8	138.3	111.1	249.5
4600	2.951	993.0	304.3	48.3	352.6	4600	4.792	1126.5	140.4	113.3	253.7
4700	3.000	1009.7	309.4	54.5	363.8	4700	4.802	1143.0	142.5	115.5	258.0
4800	3.052	1026.2	314.5	61.1	375.5	4800	4.813	1159.3	144.5	117.7	262.2
4900	3.105	1042.6	319.5	68.1	387.6	4900	4.824	1175.6	146.5	119.9	266.4
5000	3.162	1058.8	324.4	75.6	400.0	5000	4.835	1191.7	148.6	122.1	270.7

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$MgCl_2$						MgF					
$M = 95.32$, $\sigma = 4.340$, $\epsilon/k = 1988$						$M = 43.32$, $\sigma = 3.329$, $\epsilon/k = 426$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.301	----	----	----	----	100	3.505	52.3	9.0	3.2	12.2
200	5.839	----	----	----	----	200	3.665	96.5	16.6	6.8	23.4
300	6.568	----	----	----	----	300	3.922	144.4	24.8	12.4	37.3
400	6.921	86.9	6.8	10.6	17.4	400	4.112	193.5	33.3	18.9	52.2
500	7.111	104.5	8.2	13.3	21.4	500	4.235	241.5	41.5	25.4	66.9
600	7.222	122.1	9.5	15.9	25.4	600	4.316	287.9	49.5	31.7	81.2
700	7.292	139.7	10.9	18.4	29.3	700	4.372	331.9	57.1	37.6	94.7
800	7.339	157.5	12.3	21.0	33.3	800	4.411	373.6	64.3	43.2	107.5
900	7.372	175.7	13.7	23.6	37.3	900	4.441	413.1	71.1	48.6	119.6
1000	7.396	194.4	15.2	26.2	41.4	1000	4.464	450.7	77.5	53.6	131.1
1100	7.413	213.4	16.7	28.9	45.5	1100	4.483	486.7	83.7	58.4	142.2
1200	7.427	232.8	18.2	31.6	49.8	1200	4.498	521.2	89.7	63.1	152.7
1300	7.438	252.4	19.7	34.3	54.0	1300	4.512	554.5	95.4	67.5	162.9
1400	7.446	272.2	21.3	37.1	58.3	1400	4.523	586.6	100.9	71.9	172.8
1500	7.453	292.0	22.8	39.8	62.6	1500	4.534	617.6	106.2	76.0	182.3
1600	7.459	311.9	24.4	42.6	66.9	1600	4.543	647.7	111.4	80.1	191.5
1700	7.463	331.8	25.9	45.3	71.3	1700	4.551	676.8	116.4	84.1	200.5
1800	7.467	351.6	27.5	48.1	75.5	1800	4.559	705.3	121.3	88.0	209.3
1900	7.471	371.4	29.0	50.8	79.8	1900	4.567	733.0	126.1	91.7	217.8
2000	7.473	391.1	30.6	53.5	84.1	2000	4.574	759.9	130.7	95.4	226.2
2100	7.476	410.4	32.1	56.2	88.3	2100	4.581	786.2	135.2	99.1	234.3
2200	7.478	429.7	33.6	58.9	92.5	2200	4.587	811.9	139.7	102.6	242.3
2300	7.480	448.9	35.1	61.5	96.6	2300	4.594	837.2	144.0	106.1	250.1
2400	7.481	468.0	36.6	64.2	100.8	2400	4.600	862.0	148.3	109.6	257.9
2500	7.483	487.0	38.1	66.8	104.9	2500	4.606	886.3	152.5	113.0	265.5
2600	7.484	505.8	39.5	69.4	108.9	2600	4.612	910.3	156.6	116.4	273.0
2700	7.485	524.3	41.0	71.9	112.9	2700	4.617	934.0	160.7	119.8	280.4
2800	7.486	542.7	42.4	74.5	116.9	2800	4.623	957.3	164.7	123.1	287.7
2900	7.487	560.9	43.9	77.0	120.8	2900	4.629	980.2	168.6	126.4	295.0
3000	7.488	578.9	45.3	79.5	124.7	3000	4.634	1002.8	172.5	129.6	302.1
3100	7.489	596.7	46.6	81.9	128.6	3100	4.640	1025.1	176.4	132.8	309.2
3200	7.490	614.2	48.0	84.3	132.4	3200	4.646	1047.2	180.1	136.1	316.2
3300	7.490	631.5	49.4	86.7	136.1	3300	4.651	1068.9	183.9	139.3	323.1
3400	7.491	648.7	50.7	89.1	139.8	3400	4.657	1090.3	187.6	142.4	330.0
3500	7.491	665.6	52.0	91.4	143.5	3500	4.663	1111.4	191.2	145.6	336.8
3600	7.492	682.3	53.3	93.7	147.1	3600	4.669	1132.3	194.8	148.7	343.5
3700	7.492	698.9	54.6	96.0	150.6	3700	4.675	1152.9	198.3	151.9	350.2
3800	7.493	715.2	55.9	98.3	154.2	3800	4.682	1173.3	201.8	155.0	356.8
3900	7.493	731.4	57.2	100.5	157.7	3900	4.688	1193.4	205.3	158.1	363.4
4000	7.493	747.3	58.4	102.7	161.1	4000	4.695	1213.3	208.7	161.2	370.0
4100	7.494	763.2	59.7	104.9	164.5	4100	4.702	1232.9	212.1	164.4	376.5
4200	7.494	778.8	60.9	107.0	167.9	4200	4.709	1252.4	215.4	167.5	383.0
4300	7.494	794.3	62.1	109.2	171.3	4300	4.716	1271.6	218.7	170.7	389.4
4400	7.494	809.6	63.3	111.3	174.6	4400	4.724	1290.6	222.0	173.8	395.9
4500	7.495	824.8	64.5	113.4	177.9	4500	4.732	1309.4	225.3	177.0	402.3
4600	7.495	839.8	65.7	115.4	181.1	4600	4.741	1328.1	228.5	180.2	408.7
4700	7.495	854.7	66.8	117.5	184.3	4700	4.750	1346.6	231.6	183.5	415.1
4800	7.495	869.4	68.0	119.5	187.5	4800	4.759	1364.9	234.8	186.7	421.5
4900	7.496	884.0	69.1	121.5	190.6	4900	4.769	1383.1	237.9	190.0	427.9
5000	7.496	898.5	70.2	123.5	193.8	5000	4.779	1401.1	241.0	193.3	434.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

MgF_2						N					
M = 62.32, σ = 3.623, ϵ/k = 2964						M = 14.008, σ = 3.298, ϵ/k = 71.4					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.685	-----	----	----	----	100	2.500	67.9	36.1	0.0	36.1
200	4.878	-----	----	----	----	200	2.500	123.1	65.5	0.0	65.5
300	5.839	-----	----	----	----	300	2.500	166.6	88.6	0.0	88.6
400	6.405	-----	----	----	----	400	2.500	203.7	108.4	0.0	108.4
500	6.739	-----	----	----	----	500	2.500	237.0	126.1	0.0	126.1
600	6.946	123.7	14.8	23.1	37.9	600	2.500	267.6	142.4	0.0	142.4
700	7.081	140.4	16.8	27.1	43.9	700	2.500	296.0	157.5	0.0	157.5
800	7.172	157.2	18.8	30.9	49.7	800	2.500	322.6	171.6	0.0	171.6
900	7.238	173.9	20.8	34.7	55.5	900	2.500	347.9	185.1	0.0	185.1
1000	7.285	190.6	22.8	38.4	61.2	1000	2.500	372.3	198.1	0.0	198.1
1100	7.321	207.4	24.8	42.1	66.9	1100	2.500	396.4	210.9	0.0	210.9
1200	7.349	224.4	26.8	45.8	72.6	1200	2.500	419.9	223.4	0.0	223.4
1300	7.371	241.7	28.9	49.5	78.4	1300	2.500	442.4	235.4	0.0	235.4
1400	7.388	259.2	31.0	53.3	84.3	1400	2.500	464.3	247.0	0.0	247.0
1500	7.402	277.0	33.1	57.2	90.3	1500	2.500	485.6	258.4	0.0	258.4
1600	7.414	295.1	35.3	61.0	96.3	1600	2.500	506.4	269.4	0.0	269.4
1700	7.424	313.4	37.5	64.9	102.4	1700	2.500	526.7	280.2	0.0	280.2
1800	7.432	331.9	39.7	68.9	108.6	1800	2.500	546.6	290.8	0.0	290.8
1900	7.439	350.5	41.9	72.9	114.8	1900	2.500	566.1	301.1	0.0	301.2
2000	7.445	369.2	44.2	76.8	121.0	2000	2.500	585.2	311.3	0.1	311.4
2100	7.450	388.0	46.4	80.8	127.2	2100	2.501	603.9	321.3	0.1	321.4
2200	7.454	406.9	48.7	84.8	133.5	2200	2.501	622.4	331.1	0.2	331.3
2300	7.458	425.7	50.9	88.8	139.8	2300	2.502	640.5	340.7	0.3	341.0
2400	7.461	444.6	53.2	92.9	146.0	2400	2.503	658.3	350.2	0.4	350.6
2500	7.464	463.5	55.4	96.9	152.3	2500	2.505	675.9	359.6	0.6	360.2
2600	7.467	482.3	57.7	100.8	158.5	2600	2.507	693.2	368.8	0.9	369.7
2700	7.469	501.2	59.9	104.8	164.8	2700	2.509	710.3	377.9	1.2	379.1
2800	7.472	520.0	62.2	108.8	171.0	2800	2.513	727.2	386.9	1.7	388.6
2900	7.473	538.7	64.4	112.8	177.2	2900	2.517	743.8	395.7	2.3	398.0
3000	7.475	557.3	66.6	116.7	183.4	3000	2.521	760.3	404.5	3.0	407.5
3100	7.477	575.7	68.8	120.6	189.4	3100	2.527	776.5	413.1	3.9	417.0
3200	7.478	594.1	71.0	124.5	195.5	3200	2.533	792.6	421.7	5.0	426.6
3300	7.479	612.4	73.2	128.4	201.6	3300	2.541	808.5	430.1	6.2	436.3
3400	7.481	630.7	75.4	132.2	207.6	3400	2.549	824.2	438.5	7.6	446.1
3500	7.482	648.9	77.6	136.1	213.7	3500	2.559	839.7	446.7	9.3	456.0
3600	7.483	667.0	79.8	139.9	219.7	3600	2.570	855.1	454.9	11.2	466.1
3700	7.484	685.0	81.9	143.7	225.6	3700	2.581	870.4	463.0	13.3	476.3
3800	7.485	702.9	84.1	147.5	231.5	3800	2.594	885.5	471.1	15.6	486.7
3900	7.485	720.7	86.2	151.2	237.4	3900	2.608	900.4	479.0	18.2	497.3
4000	7.486	738.4	88.3	155.0	243.3	4000	2.623	915.3	486.9	21.1	508.0
4100	7.487	755.9	90.4	158.7	249.1	4100	2.639	929.9	494.7	24.2	518.9
4200	7.487	773.3	92.5	162.3	254.8	4200	2.656	944.5	502.5	27.6	530.1
4300	7.488	790.6	94.5	166.0	260.5	4300	2.674	958.9	510.2	31.2	541.4
4400	7.488	807.7	96.6	169.6	266.2	4400	2.693	973.3	517.8	35.1	552.9
4500	7.489	824.8	98.6	173.2	271.8	4500	2.712	987.5	525.3	39.3	564.6
4600	7.489	841.6	100.6	176.8	277.4	4600	2.733	1001.6	532.8	43.7	576.5
4700	7.490	858.4	102.6	180.3	282.9	4700	2.754	1015.6	540.3	48.3	588.6
4800	7.490	875.0	104.6	183.8	288.4	4800	2.776	1029.4	547.7	53.2	600.9
4900	7.491	891.4	106.6	187.3	293.9	4900	2.799	1043.2	555.0	58.3	613.3
5000	7.491	907.8	108.6	190.7	299.3	5000	2.822	1056.9	562.3	63.7	625.9

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

NF_3						NH					
$M = 71.01$, $\sigma = 4.154$, $\epsilon/k = 175$						$M = 15.02$, $\sigma = 3.312$, $\epsilon/k = 65.3$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.074	61.6	6.5	3.6	10.0	100	3.503	72.5	36.0	12.7	48.7
200	5.059	124.0	13.0	11.7	24.7	200	3.504	129.5	64.3	22.7	87.0
300	6.357	181.7	19.1	25.9	45.0	300	3.505	174.3	86.5	30.6	117.1
400	7.373	232.4	24.4	41.8	66.2	400	3.509	212.6	105.5	37.4	142.9
500	8.075	277.7	29.1	57.2	86.3	500	3.519	247.0	122.6	44.0	166.5
600	8.551	319.1	33.5	71.3	104.8	600	3.543	278.6	138.2	50.8	189.0
700	8.879	357.3	37.5	84.2	121.7	700	3.582	307.9	152.8	58.2	211.0
800	9.112	393.1	41.3	96.0	137.3	800	3.634	335.4	166.4	66.5	232.9
900	9.281	426.7	44.8	106.9	151.7	900	3.695	361.8	179.5	75.5	255.0
1000	9.407	458.7	48.1	117.0	165.2	1000	3.760	387.7	192.3	85.3	277.6
1100	9.504	489.5	51.4	126.6	178.0	1100	3.825	412.9	204.9	95.5	300.4
1200	9.579	519.1	54.5	135.7	190.2	1200	3.889	437.0	216.8	106.0	322.8
1300	9.638	547.8	57.5	144.4	201.9	1300	3.949	460.4	228.5	116.5	345.0
1400	9.686	575.5	60.4	152.8	213.2	1400	4.006	483.2	239.7	127.1	366.8
1500	9.725	602.3	63.2	160.8	224.0	1500	4.059	505.3	250.7	137.5	388.3
1600	9.757	628.4	65.9	168.5	234.4	1600	4.107	526.9	261.4	147.9	409.3
1700	9.784	653.7	68.6	175.9	244.5	1700	4.152	548.0	271.9	158.1	430.0
1800	9.807	678.3	71.2	183.1	254.3	1800	4.193	568.7	282.1	168.2	450.3
1900	9.826	702.4	73.7	190.1	263.8	1900	4.231	588.9	292.2	178.0	470.2
2000	9.843	725.9	76.2	196.9	273.1	2000	4.266	608.7	302.0	187.8	489.8
2100	9.857	749.0	78.6	203.6	282.2	2100	4.299	628.2	311.7	197.4	509.1
2200	9.870	771.6	81.0	210.1	291.0	2200	4.330	647.4	321.2	206.9	528.1
2300	9.881	794.0	83.3	216.5	299.8	2300	4.358	666.2	330.6	216.2	546.8
2400	9.890	816.1	85.6	222.8	308.4	2400	4.385	684.8	339.8	225.5	565.2
2500	9.899	838.0	87.9	229.0	317.0	2500	4.411	703.1	348.8	234.7	583.5
2600	9.906	859.8	90.2	235.2	325.5	2600	4.436	721.1	357.8	243.8	601.5
2700	9.913	881.5	92.5	241.4	333.9	2700	4.459	738.8	366.6	252.8	619.4
2800	9.919	903.3	94.8	247.6	342.4	2800	4.482	756.4	375.3	261.8	637.1
2900	9.925	924.3	97.0	253.5	350.5	2900	4.504	773.7	383.9	270.8	654.7
3000	9.929	945.0	99.2	259.4	358.5	3000	4.526	790.8	392.4	279.8	672.2
3100	9.934	965.5	101.3	265.1	366.5	3100	4.547	807.7	400.7	288.8	689.5
3200	9.938	985.7	103.4	270.8	374.3	3200	4.568	824.4	409.0	297.7	706.8
3300	9.942	1005.7	105.5	276.5	382.0	3300	4.589	840.9	417.2	306.7	724.0
3400	9.945	1025.5	107.6	282.0	389.6	3400	4.609	857.3	425.3	315.7	741.1
3500	9.948	1045.0	109.7	287.5	397.2	3500	4.629	873.4	433.4	324.8	758.1
3600	9.951	1064.3	111.7	292.9	404.6	3600	4.649	889.5	441.3	333.8	775.1
3700	9.953	1083.5	113.7	298.3	412.0	3700	4.669	905.3	449.2	342.9	792.1
3800	9.956	1102.4	115.7	303.6	419.3	3800	4.689	921.0	457.0	352.1	809.0
3900	9.958	1121.1	117.7	308.9	426.5	3900	4.709	936.6	464.7	361.3	825.9
4000	9.960	1139.7	119.6	314.1	433.7	4000	4.728	952.0	472.3	370.5	842.8
4100	9.962	1158.1	121.5	319.2	440.8	4100	4.748	967.3	479.9	379.8	859.7
4200	9.964	1176.4	123.5	324.3	447.8	4200	4.768	982.4	487.4	389.1	876.5
4300	9.965	1194.4	125.4	329.4	454.8	4300	4.788	997.4	494.9	398.5	893.4
4400	9.967	1212.3	127.2	334.4	461.6	4400	4.808	1012.3	502.3	408.0	910.2
4500	9.968	1230.1	129.1	339.4	468.5	4500	4.827	1027.1	509.6	417.5	927.1
4600	9.970	1247.7	130.9	344.3	475.3	4600	4.847	1041.8	516.9	427.1	944.0
4700	9.971	1265.2	132.8	349.2	482.0	4700	4.867	1056.3	524.1	436.7	960.8
4800	9.972	1282.6	134.6	354.0	488.6	4800	4.887	1070.8	531.3	446.5	977.7
4900	9.973	1299.8	136.4	358.8	495.3	4900	4.908	1085.1	538.4	456.2	994.6
5000	9.974	1316.9	138.2	363.6	501.8	5000	4.928	1099.3	545.4	466.1	1011.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

NH_3						NO					
$M = 17.03$, $\sigma = 2.900$, $\epsilon/k = 558.3$						$M = 30.01$, $\sigma = 3.492$, $\epsilon/k = 116.7$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.003	----	----	----	----	100	3.886	69.8	17.3	8.5	25.8
200	4.058	71.2	31.1	17.1	48.2	200	3.659	136.5	33.9	13.8	47.7
300	4.281	104.0	45.5	28.5	74.1	300	3.590	192.0	47.7	18.3	66.0
400	4.622	139.0	60.8	45.4	106.2	400	3.602	239.7	59.5	23.1	82.6
500	5.000	174.4	76.3	67.2	143.5	500	3.667	282.0	70.0	28.8	98.8
600	5.376	209.4	91.6	92.8	184.4	600	3.758	320.5	79.6	35.2	114.8
700	5.738	243.6	106.6	121.5	228.1	700	3.853	356.2	88.4	42.1	130.6
800	6.084	276.7	121.1	152.8	273.9	800	3.942	389.9	96.8	49.2	146.0
900	6.413	308.5	135.0	186.0	321.0	900	4.021	421.9	104.8	56.1	160.9
1000	6.722	339.0	148.4	220.5	368.9	1000	4.089	452.4	112.3	62.8	175.2
1100	7.010	368.3	161.2	255.8	417.0	1100	4.147	481.6	119.6	69.3	188.9
1200	7.275	396.4	173.5	291.6	465.0	1200	4.197	509.5	126.5	75.6	202.1
1300	7.517	423.5	185.3	327.3	512.6	1300	4.239	536.4	133.2	81.5	214.7
1400	7.737	449.7	196.8	362.7	559.5	1400	4.275	562.5	139.7	87.3	227.0
1500	7.935	475.0	207.9	397.7	605.5	1500	4.306	588.0	146.0	92.8	238.8
1600	8.113	499.6	218.6	432.0	650.7	1600	4.333	612.9	152.2	98.2	250.4
1700	8.274	523.6	229.1	465.7	694.8	1700	4.356	637.6	158.3	103.4	261.8
1800	8.419	546.8	239.3	498.6	737.9	1800	4.377	662.1	164.4	108.6	273.0
1900	8.549	569.5	249.2	530.7	779.9	1900	4.395	686.4	170.4	113.7	284.1
2000	8.667	591.7	258.9	562.0	820.9	2000	4.411	709.8	176.3	118.6	294.8
2100	8.773	613.2	268.4	592.5	860.9	2100	4.425	732.8	182.0	123.3	305.3
2200	8.869	634.3	277.6	622.3	899.9	2200	4.438	755.4	187.6	128.0	315.6
2300	8.956	655.1	286.7	651.4	938.1	2300	4.450	777.6	193.1	132.6	325.7
2400	9.035	675.4	295.6	679.8	975.4	2400	4.461	799.4	198.5	137.0	335.6
2500	9.107	695.3	304.2	707.5	1011.7	2500	4.471	820.9	203.9	141.4	345.3
2600	9.172	714.7	312.7	734.5	1047.3	2600	4.480	842.1	209.1	145.8	354.9
2700	9.232	733.8	321.1	760.9	1082.0	2700	4.489	863.0	214.3	150.0	364.3
2800	9.287	752.5	329.3	786.7	1116.1	2800	4.497	883.5	219.4	154.2	373.6
2900	9.338	771.0	337.4	812.1	1149.5	2900	4.504	903.9	224.5	158.3	382.8
3000	9.384	789.2	345.4	836.9	1182.3	3000	4.511	923.9	229.4	162.4	391.9
3100	9.427	807.2	353.2	861.3	1214.5	3100	4.518	943.8	234.4	166.4	400.8
3200	9.467	824.9	361.0	885.3	1246.3	3200	4.524	963.3	239.2	170.4	409.6
3300	9.504	842.5	368.7	908.9	1277.5	3300	4.530	982.7	244.0	174.3	418.4
3400	9.538	859.8	376.2	932.1	1308.3	3400	4.535	1001.9	248.8	178.2	427.0
3500	9.570	876.9	383.7	954.9	1338.6	3500	4.541	1020.8	253.5	182.1	435.6
3600	9.600	893.8	391.1	977.4	1368.5	3600	4.546	1039.6	258.1	185.9	444.0
3700	9.628	910.5	398.4	999.6	1398.0	3700	4.551	1058.1	262.8	189.7	452.4
3800	9.654	927.0	405.7	1021.5	1427.2	3800	4.556	1076.5	267.3	193.4	460.7
3900	9.678	943.4	412.8	1043.1	1455.9	3900	4.560	1094.7	271.8	197.1	469.0
4000	9.701	959.6	419.9	1064.4	1484.3	4000	4.565	1112.8	276.3	200.8	477.1
4100	9.723	975.6	426.9	1085.4	1512.3	4100	4.569	1130.6	280.8	204.5	485.2
4200	9.743	991.4	433.8	1106.1	1540.0	4200	4.573	1148.4	285.2	208.1	493.3
4300	9.763	1007.1	440.7	1126.6	1567.4	4300	4.577	1165.9	289.5	211.7	501.2
4400	9.781	1022.6	447.5	1146.9	1594.4	4400	4.581	1183.3	293.9	215.3	509.1
4500	9.798	1038.0	454.2	1166.9	1621.1	4500	4.585	1200.6	298.1	218.8	517.0
4600	9.815	1053.2	460.9	1186.7	1647.6	4600	4.589	1217.8	302.4	222.4	524.8
4700	9.831	1068.3	467.5	1206.3	1673.7	4700	4.593	1234.8	306.6	225.9	532.5
4800	9.845	1083.2	474.0	1225.6	1699.6	4800	4.596	1251.7	310.8	229.4	540.2
4900	9.860	1098.0	480.5	1244.7	1725.2	4900	4.600	1268.4	315.0	232.8	547.8
5000	9.873	1112.6	486.9	1263.7	1750.6	5000	4.604	1285.1	319.1	236.3	555.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

NOCl						N_2					
$M = 65.47$, $\sigma = 4.112$, $\epsilon/k = 395.3$						$M = 28.02$, $\sigma = 3.798$, $\epsilon/k = 71.4$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.286	43.2	4.9	3.1	8.0	100	3.500	72.4	19.3	6.8	26.0
200	4.928	80.5	9.2	7.8	17.0	200	3.501	131.3	34.9	12.3	47.2
300	5.354	120.9	13.8	13.8	27.6	300	3.503	177.7	47.3	16.7	63.9
400	5.634	161.9	18.4	20.3	38.8	400	3.518	217.2	57.8	20.7	78.5
500	5.852	201.6	22.9	27.1	50.0	500	3.558	252.7	67.2	25.0	92.2
600	6.033	239.6	27.3	33.9	61.2	600	3.621	285.4	75.9	30.0	105.9
700	6.185	275.4	31.3	40.7	72.0	700	3.699	315.6	83.9	35.4	119.4
800	6.310	309.2	35.2	47.2	82.4	800	3.781	344.0	91.5	41.2	132.7
900	6.413	341.2	38.8	53.5	92.3	900	3.860	371.0	98.7	47.2	145.9
1000	6.497	371.6	42.3	59.5	101.8	1000	3.932	397.1	105.6	53.2	158.9
1100	6.566	400.7	45.6	65.3	110.9	1100	3.998	422.7	112.4	59.3	171.7
1200	6.622	428.6	48.8	70.8	119.6	1200	4.056	447.8	119.1	65.2	184.3
1300	6.669	455.5	51.8	76.1	127.9	1300	4.107	471.8	125.5	71.0	196.4
1400	6.709	481.4	54.8	81.2	136.0	1400	4.151	495.2	131.7	76.5	208.2
1500	6.741	506.5	57.6	86.1	143.7	1500	4.190	517.9	137.7	81.9	219.7
1600	6.769	530.8	60.4	90.8	151.2	1600	4.224	540.1	143.6	87.2	230.8
1700	6.793	554.4	63.1	95.4	158.5	1700	4.254	561.7	149.4	92.2	241.6
1800	6.813	577.3	65.7	99.8	165.5	1800	4.281	582.9	155.0	97.2	252.2
1900	6.831	599.6	68.2	104.0	172.3	1900	4.304	603.7	160.6	102.0	262.5
2000	6.846	621.3	70.7	108.2	178.9	2000	4.325	624.0	166.0	106.6	272.6
2100	6.860	642.6	73.1	112.2	185.4	2100	4.344	644.0	171.3	111.2	282.4
2200	6.871	663.4	75.5	116.2	191.7	2200	4.360	663.7	176.5	115.6	292.1
2300	6.882	683.9	77.8	120.1	197.9	2300	4.375	683.0	181.7	119.9	301.6
2400	6.891	704.1	80.1	123.9	204.0	2400	4.389	702.1	186.7	124.2	310.9
2500	6.899	723.9	82.4	127.6	210.0	2500	4.401	720.8	191.7	128.3	320.0
2600	6.906	743.3	84.6	131.2	215.8	2600	4.413	739.3	196.6	132.4	329.0
2700	6.913	762.5	86.8	134.8	221.6	2700	4.423	757.5	201.5	136.4	337.9
2800	6.919	781.4	88.9	138.3	227.3	2800	4.433	775.5	206.3	140.3	346.6
2900	6.924	800.0	91.1	141.8	232.9	2900	4.442	793.3	211.0	144.2	355.2
3000	6.929	818.4	93.2	145.2	238.4	3000	4.450	810.8	215.6	148.0	363.6
3100	6.933	836.4	95.2	148.6	243.8	3100	4.457	828.1	220.2	151.8	372.0
3200	6.937	854.2	97.2	151.9	249.1	3200	4.464	845.3	224.8	155.5	380.3
3300	6.941	871.8	99.2	155.1	254.4	3300	4.471	862.2	229.3	159.1	388.4
3400	6.944	889.1	101.2	158.3	259.5	3400	4.477	879.0	233.8	162.7	396.5
3500	6.947	906.2	103.2	161.5	264.6	3500	4.483	895.5	238.2	166.3	404.5
3600	6.950	923.1	105.1	164.6	269.7	3600	4.489	912.0	242.5	169.8	412.3
3700	6.953	939.8	107.0	167.7	274.6	3700	4.494	928.2	246.9	173.3	420.2
3800	6.955	956.2	108.8	170.7	279.5	3800	4.499	944.3	251.2	176.7	427.9
3900	6.957	972.5	110.7	173.7	284.4	3900	4.504	960.3	255.4	180.1	435.5
4000	6.959	988.5	112.5	176.6	289.1	4000	4.508	976.1	259.6	183.5	443.1
4100	6.961	1004.4	114.3	179.5	293.9	4100	4.513	991.7	263.8	186.9	450.6
4200	6.963	1020.2	116.1	182.4	298.5	4200	4.517	1007.3	267.9	190.2	458.1
4300	6.965	1035.7	117.9	185.3	303.2	4300	4.521	1022.7	272.0	193.5	465.5
4400	6.966	1051.1	119.6	188.1	307.7	4400	4.525	1037.9	276.1	196.7	472.8
4500	6.968	1066.4	121.4	190.9	312.3	4500	4.528	1053.1	280.1	200.0	480.1
4600	6.969	1081.5	123.1	193.7	316.8	4600	4.532	1068.1	284.1	203.2	487.3
4700	6.970	1096.5	124.8	196.4	321.2	4700	4.535	1083.0	288.0	206.4	494.4
4800	6.972	1111.4	126.5	199.1	325.6	4800	4.539	1097.8	292.0	209.5	501.5
4900	6.973	1126.2	128.2	201.8	330.0	4900	4.542	1112.5	295.9	212.7	508.6
5000	6.974	1140.9	129.9	204.5	334.4	5000	4.545	1127.1	299.8	215.8	515.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

N_2O						Na					
M = 44.02, σ = 3.828, ϵ/k = 232.4						M = 22.991, σ = 3.567, ϵ/k = 1375					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.530	50.0	8.5	3.1	11.5	100	2.500	----	----	---	----
200	4.043	99.7	16.9	9.2	26.1	200	2.500	----	----	---	----
300	4.655	149.2	25.3	19.2	44.4	300	2.500	56.1	18.2	0.0	18.2
400	5.134	194.8	33.0	30.6	63.6	400	2.500	71.5	23.2	0.0	23.2
500	5.515	236.2	40.0	42.4	82.4	500	2.500	86.9	28.2	0.0	28.2
600	5.828	274.0	46.4	54.3	100.7	600	2.500	102.6	33.3	0.0	33.3
700	6.088	309.1	52.3	66.1	118.4	700	2.500	118.9	38.5	0.0	38.5
800	6.305	342.0	57.9	77.5	135.4	800	2.500	135.7	44.0	0.0	44.0
900	6.486	372.9	63.1	88.6	151.7	900	2.500	152.8	49.5	0.0	49.5
1000	6.638	402.4	68.1	99.2	167.3	1000	2.500	170.1	55.1	0.0	55.1
1100	6.765	430.3	72.9	109.4	182.2	1100	2.500	187.4	60.8	0.0	60.8
1200	6.872	457.1	77.4	119.1	196.5	1200	2.500	204.8	66.4	0.0	66.4
1300	6.962	483.0	81.8	128.4	210.2	1300	2.500	222.1	72.0	0.0	72.0
1400	7.040	508.1	86.0	137.4	223.5	1400	2.500	239.3	77.6	0.0	77.6
1500	7.107	532.4	90.1	146.2	236.3	1500	2.500	256.2	83.0	0.0	83.0
1600	7.164	556.2	94.2	154.6	248.7	1600	2.500	273.0	88.5	0.0	88.5
1700	7.215	579.3	98.1	162.8	260.8	1700	2.500	289.6	93.9	0.0	93.9
1800	7.260	601.8	101.9	170.7	272.6	1800	2.501	306.1	99.2	0.0	99.2
1900	7.299	623.8	105.6	178.4	284.0	1900	2.501	322.3	104.5	0.0	104.5
2000	7.335	645.3	109.2	185.9	295.1	2000	2.502	338.2	109.6	0.1	109.7
2100	7.367	666.3	112.8	193.2	306.0	2100	2.504	353.9	114.7	0.1	114.9
2200	7.395	686.8	116.3	200.4	316.6	2200	2.506	369.3	119.7	0.2	120.0
2300	7.422	706.9	119.7	207.3	327.0	2300	2.508	384.5	124.6	0.4	125.0
2400	7.446	726.7	123.0	214.2	337.2	2400	2.512	399.4	129.5	0.5	130.0
2500	7.468	746.0	126.3	220.9	347.1	2500	2.517	414.0	134.2	0.8	135.0
2600	7.488	765.1	129.5	227.4	356.9	2600	2.522	428.4	138.9	1.1	140.0
2700	7.508	783.8	132.7	233.9	366.6	2700	2.530	442.6	143.5	1.5	145.0
2800	7.526	802.3	135.8	240.3	376.1	2800	2.538	456.5	148.0	2.0	150.0
2900	7.542	820.5	138.9	246.5	385.5	2900	2.548	470.2	152.4	2.6	155.0
3000	7.558	838.6	142.0	252.8	394.7	3000	2.560	483.7	156.8	3.3	160.1
3100	7.573	856.4	145.0	258.9	403.9	3100	2.574	497.1	161.1	4.2	165.3
3200	7.588	874.2	148.0	265.0	413.0	3200	2.590	510.2	165.4	5.2	170.6
3300	7.601	891.8	151.0	271.1	422.1	3300	2.607	523.1	169.6	6.4	176.0
3400	7.614	909.4	154.0	277.2	431.1	3400	2.627	535.9	173.7	7.8	181.5
3500	7.627	926.9	156.9	283.2	440.1	3500	2.650	548.5	177.8	9.4	187.2
3600	7.639	944.4	159.9	289.2	449.1	3600	2.674	560.9	181.8	11.1	193.0
3700	7.651	961.9	162.8	295.2	458.1	3700	2.701	573.2	185.8	13.2	199.0
3800	7.662	978.9	165.7	301.1	466.8	3800	2.731	585.4	189.7	15.4	205.2
3900	7.673	995.7	168.6	306.9	475.5	3900	2.764	597.4	193.6	18.0	211.6
4000	7.683	1012.4	171.4	312.7	484.1	4000	2.800	609.2	197.5	20.8	218.3
4100	7.694	1028.8	174.2	318.4	492.6	4100	2.839	620.9	201.3	24.0	225.3
4200	7.704	1045.2	176.9	324.1	501.0	4200	2.880	632.5	205.0	27.4	232.4
4300	7.714	1061.3	179.7	329.7	509.4	4300	2.925	644.0	208.7	31.3	240.0
4400	7.723	1077.4	182.4	335.3	517.7	4400	2.960	655.3	212.4	34.4	246.8
4500	7.733	1093.2	185.1	340.9	526.0	4500	3.006	666.6	216.1	38.5	254.5
4600	7.742	1109.0	187.7	346.4	534.2	4600	3.057	677.7	219.7	43.1	262.8
4700	7.751	1124.6	190.4	351.9	542.3	4700	3.112	688.7	223.2	48.1	271.3
4800	7.760	1140.1	193.0	357.4	550.4	4800	3.170	699.6	226.8	53.5	280.2
4900	7.769	1155.5	195.6	362.8	558.4	4900	3.231	710.3	230.2	59.3	289.5
5000	7.778	1170.8	198.2	368.2	566.4	5000	3.294	721.0	233.7	65.3	299.0

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

NaBr						NaCl					
M = 102.91, σ = 4.226, ϵ/k = 1963						M = 58.45, σ = 4.186, ϵ/k = 1989					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	3.734	----	---	---	----	100	3.654	----	---	---	----
200	4.180	----	---	---	----	200	4.099	----	---	---	----
300	4.355	----	---	---	----	300	4.307	----	---	---	----
400	4.433	95.6	6.9	4.7	11.6	400	4.404	73.1	9.3	6.2	15.6
500	4.476	115.0	8.3	5.8	14.1	500	4.458	88.0	11.2	7.7	18.9
600	4.504	134.5	9.7	6.9	16.6	600	4.493	102.8	13.1	9.2	22.3
700	4.524	153.8	11.1	7.9	19.1	700	4.518	117.6	15.0	10.6	25.6
800	4.541	173.5	12.6	9.0	21.6	800	4.537	132.6	16.9	12.1	29.0
900	4.554	193.7	14.0	10.1	24.2	900	4.553	147.9	18.9	13.6	32.5
1000	4.567	214.3	15.5	11.3	26.8	1000	4.568	163.6	20.9	15.2	36.0
1100	4.578	235.4	17.0	12.5	29.5	1100	4.580	179.6	22.9	16.8	39.7
1200	4.589	256.8	18.6	13.7	32.3	1200	4.592	195.9	25.0	18.4	43.4
1300	4.599	278.4	20.2	14.9	35.1	1300	4.604	212.4	27.1	20.1	47.1
1400	4.608	300.3	21.7	16.1	37.9	1400	4.615	229.1	29.2	21.7	50.9
1500	4.618	322.1	23.3	17.4	40.7	1500	4.625	245.8	31.3	23.4	54.8
1600	4.627	344.1	24.9	18.7	43.6	1600	4.635	262.5	33.5	25.2	58.6
1700	4.636	365.9	26.5	19.9	46.4	1700	4.645	279.2	35.6	26.9	62.5
1800	4.645	387.8	28.1	21.2	49.3	1800	4.655	295.9	37.7	28.6	66.3
1900	4.654	409.6	29.7	22.5	52.2	1900	4.665	312.5	39.8	30.4	70.2
2000	4.663	431.2	31.2	23.8	55.0	2000	4.675	329.1	42.0	32.1	74.1
2100	4.672	452.5	32.8	25.1	57.8	2100	4.684	345.3	44.0	33.9	77.9
2200	4.681	473.8	34.3	26.3	60.6	2200	4.694	361.6	46.1	35.6	81.7
2300	4.689	495.0	35.8	27.6	63.5	2300	4.703	377.8	48.2	37.4	85.5
2400	4.698	516.0	37.4	28.9	66.3	2400	4.713	393.9	50.2	39.1	89.3
2500	4.706	536.8	38.9	30.2	69.1	2500	4.722	409.8	52.3	40.9	93.1
2600	4.715	557.5	40.4	31.5	71.8	2600	4.731	425.6	54.3	42.6	96.9
2700	4.724	577.9	41.8	32.8	74.6	2700	4.740	441.3	56.3	44.4	100.6
2800	4.732	598.1	43.3	34.0	77.3	2800	4.750	456.7	58.2	46.1	104.3
2900	4.741	618.1	44.8	35.3	80.1	2900	4.759	472.1	60.2	47.9	108.0
3000	4.749	637.8	46.2	36.6	82.8	3000	4.768	487.2	62.1	49.6	111.7
3100	4.758	657.3	47.6	37.8	85.4	3100	4.777	502.1	64.0	51.3	115.3
3200	4.766	676.6	49.0	39.1	88.1	3200	4.786	516.9	65.9	53.0	118.9
3300	4.775	695.6	50.4	40.3	90.7	3300	4.796	531.5	67.8	54.8	122.5
3400	4.783	714.4	51.7	41.6	93.3	3400	4.805	545.9	69.6	56.5	126.1
3500	4.791	732.9	53.1	42.8	95.9	3500	4.814	560.1	71.4	58.2	129.6
3600	4.800	751.3	54.4	44.0	98.4	3600	4.823	574.2	73.2	59.9	133.1
3700	4.808	769.4	55.7	45.3	101.0	3700	4.832	588.1	75.0	61.6	136.5
3800	4.817	787.4	57.0	46.5	103.5	3800	4.841	601.9	76.7	63.2	140.0
3900	4.825	805.1	58.3	47.7	106.0	3900	4.850	615.5	78.5	64.9	143.4
4000	4.834	822.6	59.6	48.9	108.5	4000	4.859	629.0	80.2	66.6	146.8
4100	4.842	840.0	60.8	50.1	111.0	4100	4.869	642.3	81.9	68.3	150.2
4200	4.850	857.1	62.1	51.4	113.4	4200	4.878	655.4	83.6	69.9	153.5
4300	4.859	874.1	63.3	52.6	115.9	4300	4.887	668.5	85.2	71.6	156.8
4400	4.867	890.9	64.5	53.8	118.3	4400	4.896	681.4	86.9	73.3	160.1
4500	4.876	907.5	65.7	55.0	120.7	4500	4.905	694.1	88.5	74.9	163.4
4600	4.884	924.0	66.9	56.2	123.1	4600	4.914	706.8	90.1	76.6	166.7
4700	4.893	940.3	68.1	57.3	125.4	4700	4.923	719.3	91.7	78.2	169.9
4800	4.901	956.5	69.3	58.5	127.8	4800	4.932	731.7	93.3	79.9	173.2
4900	4.909	972.5	70.4	59.7	130.1	4900	4.941	744.0	94.9	81.5	176.4
5000	4.918	988.3	71.6	60.9	132.5	5000	4.950	756.2	96.4	83.1	179.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

NaF						NaI					
$M = 41.99$, $\sigma = 3.756$, $\epsilon/k = 2333$						$M = 149.90$, $\sigma = 4.658$, $\epsilon/k = 1856$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.530	----	----	----	----	100	3.793	----	---	---	---
200	3.842	----	----	----	----	200	4.225	----	---	---	---
300	4.105	----	----	----	----	300	4.378	----	---	---	---
400	4.249	----	----	----	----	400	4.444	96.6	4.8	3.3	8.1
500	4.330	87.8	15.6	10.0	25.6	500	4.480	116.5	5.8	4.0	9.8
600	4.378	102.2	18.1	12.0	30.1	600	4.503	136.3	6.8	4.8	11.6
700	4.408	116.7	20.7	13.9	34.6	700	4.520	156.2	7.8	5.5	13.3
800	4.429	131.0	23.3	15.8	39.0	800	4.533	176.5	8.8	6.3	15.1
900	4.443	145.5	25.8	17.7	43.5	900	4.545	197.4	9.8	7.1	16.9
1000	4.454	160.3	28.4	19.6	48.0	1000	4.555	218.7	10.9	7.9	18.7
1100	4.462	175.3	31.1	21.5	52.6	1100	4.564	240.4	12.0	8.7	20.6
1200	4.468	190.7	33.8	23.4	57.3	1200	4.573	262.5	13.1	9.5	22.6
1300	4.472	206.3	36.6	25.4	62.0	1300	4.581	284.8	14.2	10.4	24.5
1400	4.476	222.2	39.4	27.4	66.9	1400	4.589	307.1	15.3	11.2	26.5
1500	4.479	238.2	42.3	29.5	71.7	1500	4.597	329.5	16.4	12.1	28.5
1600	4.482	254.3	45.1	31.5	76.6	1600	4.604	351.8	17.5	13.0	30.4
1700	4.484	270.6	48.0	33.5	81.5	1700	4.612	374.2	18.6	13.8	32.4
1800	4.485	286.8	50.9	35.6	86.5	1800	4.619	396.4	19.7	14.7	34.4
1900	4.487	303.0	53.8	37.6	91.4	1900	4.627	418.5	20.8	15.6	36.4
2000	4.488	319.3	56.7	39.7	96.3	2000	4.634	440.3	21.9	16.4	38.3
2100	4.489	335.5	59.5	41.7	101.2	2100	4.641	462.0	23.0	17.3	40.3
2200	4.490	351.7	62.4	43.7	106.1	2200	4.648	483.6	24.0	18.2	42.2
2300	4.491	367.8	65.3	45.8	111.0	2300	4.655	505.0	25.1	19.0	44.2
2400	4.492	383.8	68.1	47.8	115.9	2400	4.662	526.2	26.2	19.9	46.1
2500	4.492	399.6	70.9	49.7	120.6	2500	4.670	547.2	27.2	20.8	48.0
2600	4.493	415.3	73.7	51.7	125.4	2600	4.677	568.0	28.2	21.6	49.9
2700	4.494	431.1	76.5	53.7	130.2	2700	4.684	588.5	29.3	22.5	51.7
2800	4.494	446.7	79.3	55.6	134.9	2800	4.691	608.8	30.3	23.3	53.6
2900	4.494	462.2	82.0	57.6	139.6	2900	4.698	628.8	31.3	24.2	55.4
3000	4.495	477.7	84.8	59.5	144.3	3000	4.705	648.5	32.2	25.0	57.3
3100	4.495	493.0	87.5	61.4	148.9	3100	4.712	668.0	33.2	25.9	59.1
3200	4.495	508.1	90.2	63.3	153.5	3200	4.718	687.3	34.2	26.7	60.8
3300	4.496	523.1	92.8	65.2	158.1	3300	4.725	706.3	35.1	27.5	62.6
3400	4.496	538.0	95.5	67.1	162.6	3400	4.732	725.0	36.0	28.3	64.4
3500	4.496	552.7	98.1	68.9	167.0	3500	4.739	743.6	37.0	29.1	66.1
3600	4.496	567.3	100.7	70.7	171.4	3600	4.746	761.9	37.9	29.9	67.8
3700	4.497	581.7	103.2	72.6	175.8	3700	4.753	780.0	38.8	30.8	69.5
3800	4.497	596.0	105.8	74.3	180.1	3800	4.760	797.8	39.7	31.6	71.2
3900	4.497	610.1	108.3	76.1	184.4	3900	4.767	815.5	40.5	32.4	72.9
4000	4.497	624.1	110.8	77.9	188.6	4000	4.774	833.0	41.4	33.1	74.6
4100	4.497	637.9	113.2	79.6	192.8	4100	4.781	850.3	42.3	33.9	76.2
4200	4.497	651.6	115.6	81.3	197.0	4200	4.788	867.4	43.1	34.7	77.8
4300	4.497	665.2	118.1	83.0	201.1	4300	4.795	884.3	44.0	35.5	79.5
4400	4.498	678.6	120.4	84.7	205.1	4400	4.802	901.0	44.8	36.3	81.1
4500	4.498	692.0	122.8	86.4	209.2	4500	4.808	917.6	45.6	37.1	82.7
4600	4.498	705.1	125.1	88.0	213.1	4600	4.815	934.0	46.4	37.8	84.3
4700	4.498	718.2	127.5	89.6	217.1	4700	4.822	950.3	47.2	38.6	85.9
4800	4.498	731.1	129.8	91.3	221.0	4800	4.829	966.4	48.0	39.4	87.4
4900	4.498	744.0	132.0	92.9	224.9	4900	4.836	982.3	48.8	40.2	89.0
5000	4.498	756.7	134.3	94.4	228.7	5000	4.843	998.1	49.6	40.9	90.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

NaO						NaOH					
$M = 38.99$, $\sigma = 3.812$, $\epsilon/k = 383$						$M = 40.00$, $\sigma = 3.804$, $\epsilon/k = 1962$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.508	39.3	7.5	2.7	10.2	100	4.074	----	----	----	----
200	3.708	73.4	14.0	6.0	20.0	200	4.473	----	----	----	----
300	3.977	110.4	21.1	11.0	32.1	300	4.779	----	----	----	----
400	4.162	147.7	28.2	16.5	44.7	400	5.025	73.5	13.7	12.2	25.9
500	4.277	183.7	35.1	22.0	57.1	500	5.230	88.5	16.5	15.8	32.3
600	4.352	218.0	41.7	27.2	68.8	600	5.396	103.5	19.3	19.7	38.9
700	4.404	250.3	47.8	32.1	79.9	700	5.536	118.4	22.1	23.6	45.6
800	4.441	280.7	53.6	36.7	90.3	800	5.657	133.5	24.9	27.7	52.5
900	4.470	309.5	59.1	41.0	100.2	900	5.767	149.1	27.8	31.9	59.7
1000	4.493	336.8	64.4	45.2	109.5	1000	5.867	164.9	30.7	36.4	67.1
1100	4.511	363.0	69.4	49.1	118.5	1100	5.959	181.2	33.7	41.1	74.8
1200	4.527	388.1	74.2	52.9	127.1	1200	6.044	197.6	36.8	45.9	82.8
1300	4.541	412.3	78.8	56.6	135.4	1300	6.122	214.3	39.9	50.9	90.8
1400	4.553	435.6	83.3	60.2	143.4	1400	6.194	231.1	43.1	56.0	99.0
1500	4.565	458.0	87.5	63.6	151.2	1500	6.258	247.9	46.2	61.1	107.3
1600	4.575	480.0	91.7	67.0	158.7	1600	6.317	264.8	49.3	66.3	115.6
1700	4.585	501.2	95.8	70.3	166.1	1700	6.371	281.6	52.5	71.5	124.0
1800	4.594	521.7	99.7	73.5	173.2	1800	6.419	298.5	55.6	76.7	132.3
1900	4.603	541.7	103.5	76.7	180.2	1900	6.463	315.2	58.7	81.9	140.7
2000	4.612	561.3	107.3	79.7	187.0	2000	6.502	331.9	61.8	87.1	148.9
2100	4.620	580.4	110.9	82.8	193.7	2100	6.538	348.3	64.9	92.2	157.1
2200	4.628	599.2	114.5	85.8	200.3	2200	6.570	364.6	67.9	97.3	165.3
2300	4.636	617.7	118.1	88.8	206.8	2300	6.599	380.9	71.0	102.4	173.4
2400	4.644	635.8	121.5	91.7	213.2	2400	6.626	397.1	74.0	107.5	181.4
2500	4.651	653.7	124.9	94.6	219.5	2500	6.650	413.2	77.0	112.5	189.4
2600	4.659	671.2	128.3	97.5	225.8	2600	6.673	429.0	79.9	117.4	197.3
2700	4.666	688.5	131.6	100.3	231.9	2700	6.693	444.8	82.9	122.3	205.2
2800	4.673	705.5	134.8	103.1	238.0	2800	6.711	460.3	85.8	127.1	212.9
2900	4.680	722.2	138.0	105.9	244.0	2900	6.728	475.7	88.6	131.9	220.5
3000	4.687	738.7	141.2	108.7	249.9	3000	6.744	490.9	91.5	136.6	228.1
3100	4.694	755.0	144.3	111.5	255.8	3100	6.758	505.9	94.2	141.3	235.5
3200	4.701	771.0	147.4	114.2	261.6	3200	6.772	520.7	97.0	145.9	242.9
3300	4.708	786.8	150.4	116.9	267.3	3300	6.784	535.3	99.7	150.4	250.1
3400	4.715	802.4	153.4	119.6	272.9	3400	6.795	549.8	102.4	154.9	257.3
3500	4.722	817.7	156.3	122.3	278.6	3500	6.806	564.1	105.1	159.3	264.4
3600	4.729	832.9	159.2	124.9	284.1	3600	6.815	578.2	107.7	163.6	271.3
3700	4.736	847.9	162.1	127.5	289.6	3700	6.824	592.1	110.3	167.9	278.2
3800	4.743	862.7	164.9	130.2	295.1	3800	6.833	605.9	112.9	172.2	285.1
3900	4.750	877.3	167.7	132.8	300.5	3900	6.841	619.6	115.4	176.4	291.8
4000	4.756	891.8	170.4	135.4	305.8	4000	6.848	633.1	117.9	180.5	298.5
4100	4.763	906.1	173.2	138.0	311.1	4100	6.855	646.4	120.4	184.6	305.0
4200	4.770	920.2	175.9	140.5	316.4	4200	6.861	659.6	122.9	188.7	311.5
4300	4.777	934.2	178.6	143.1	321.6	4300	6.867	672.7	125.3	192.7	318.0
4400	4.783	948.1	181.2	145.6	326.9	4400	6.873	685.6	127.7	196.6	324.3
4500	4.790	961.8	183.8	148.2	332.0	4500	6.878	698.4	130.1	200.5	330.6
4600	4.797	975.5	186.4	150.7	337.2	4600	6.883	711.1	132.5	204.4	336.9
4700	4.803	989.0	189.0	153.3	342.3	4700	6.888	723.6	134.8	208.2	343.0
4800	4.810	1002.5	191.6	155.8	347.4	4800	6.892	736.1	137.1	212.0	349.1
4900	4.817	1015.8	194.2	158.3	352.5	4900	6.896	748.4	139.4	215.8	355.2
5000	4.823	1029.1	196.7	160.9	357.5	5000	6.900	760.6	141.7	219.5	361.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

N_2						Ne					
$M = 45.98$, $\sigma = 4.156$, $\epsilon/k = 1375$						$M = 20.183$, $\sigma = 2.820$, $\epsilon/k = 32.8$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.178	----	---	---	----	100	2.500	146.2	54.0	0.0	54.0
200	4.438	----	---	---	----	200	2.500	240.1	88.7	0.0	88.7
300	4.513	58.4	9.5	6.7	16.2	300	2.500	314.8	116.2	0.0	116.2
400	4.553	74.5	12.1	8.7	20.8	400	2.500	379.0	139.9	0.0	139.9
500	4.583	90.6	14.7	10.8	25.4	500	2.500	438.0	161.7	0.0	161.7
600	4.608	106.9	17.3	12.9	30.2	600	2.500	493.8	182.3	0.0	182.3
700	4.631	123.9	20.1	15.1	35.1	700	2.500	545.9	201.6	0.0	201.6
800	4.653	141.3	22.9	17.4	40.3	800	2.500	595.3	219.8	0.0	219.8
900	4.674	159.2	25.8	19.7	45.5	900	2.500	642.5	237.2	0.0	237.2
1000	4.695	177.2	28.7	22.2	50.9	1000	2.500	687.8	254.0	0.0	254.0
1100	4.716	195.3	31.6	24.7	56.3	1100	2.500	731.5	270.1	0.0	270.1
1200	4.737	213.3	34.6	27.2	61.8	1200	2.500	773.7	285.7	0.0	285.7
1300	4.757	231.4	37.5	29.8	67.3	1300	2.500	814.7	300.8	0.0	300.8
1400	4.777	249.3	40.4	32.4	72.8	1400	2.500	854.6	315.6	0.0	315.6
1500	4.798	266.9	43.2	35.0	78.2	1500	2.500	893.5	329.9	0.0	329.9
1600	4.818	284.4	46.1	37.6	83.7	1600	2.500	931.5	343.9	0.0	343.9
1700	4.838	301.7	48.9	40.2	89.1	1700	2.500	968.6	357.6	0.0	357.6
1800	4.858	318.9	51.7	42.9	94.6	1800	2.500	1005.0	371.1	0.0	371.1
1900	4.878	335.7	54.4	45.6	100.0	1900	2.500	1040.6	384.2	0.0	384.2
2000	4.898	352.4	57.1	48.2	105.3	2000	2.500	1075.6	397.2	0.0	397.2
2100	4.918	368.7	59.8	50.9	110.6	2100	2.500	1110.0	409.9	0.0	409.9
2200	4.938	384.8	62.4	53.5	115.9	2200	2.500	1143.8	422.3	0.0	422.3
2300	4.959	400.5	64.9	56.2	121.1	2300	2.500	1177.1	434.6	0.0	434.6
2400	4.979	416.1	67.4	58.8	126.3	2400	2.500	1209.8	446.7	0.0	446.7
2500	4.999	431.3	69.9	61.5	131.4	2500	2.500	1242.1	458.6	0.0	458.6
2600	5.019	446.3	72.3	64.1	136.5	2600	2.500	1273.9	470.4	0.0	470.4
2700	5.039	461.1	74.7	66.8	141.5	2700	2.500	1305.3	482.0	0.0	482.0
2800	5.059	475.6	77.1	69.4	146.5	2800	2.500	1336.3	493.4	0.0	493.4
2900	5.079	489.9	79.4	72.1	151.5	2900	2.500	1366.9	504.7	0.0	504.7
3000	5.099	503.9	81.7	74.7	156.4	3000	2.500	1397.1	515.9	0.0	515.9
3100	5.119	517.8	83.9	77.4	161.3	3100	2.500	1427.0	526.9	0.0	526.9
3200	5.139	531.5	86.1	80.0	166.1	3200	2.500	1456.5	537.8	0.0	537.8
3300	5.159	545.0	88.3	82.7	171.0	3300	2.500	1485.7	548.6	0.0	548.6
3400	5.179	558.3	90.5	85.3	175.8	3400	2.500	1514.6	559.2	0.0	559.2
3500	5.199	571.4	92.6	88.0	180.6	3500	2.500	1543.2	569.8	0.0	569.8
3600	5.219	584.4	94.7	90.6	185.3	3600	2.500	1571.5	580.2	0.0	580.2
3700	5.239	597.2	96.8	93.3	190.1	3700	2.500	1599.5	590.6	0.0	590.6
3800	5.259	609.8	98.8	96.0	194.8	3800	2.500	1627.3	600.8	0.0	600.8
3900	5.279	622.3	100.9	98.6	199.5	3900	2.500	1654.8	611.0	0.0	611.0
4000	5.299	634.7	102.9	101.3	204.2	4000	2.500	1682.0	621.1	0.0	621.1
4100	5.319	646.9	104.8	104.0	208.9	4100	2.500	1709.0	631.0	0.0	631.0
4200	5.339	658.9	106.8	106.7	213.5	4200	2.500	1735.8	640.9	0.0	640.9
4300	5.359	670.9	108.7	109.4	218.1	4300	2.500	1762.3	650.7	0.0	650.7
4400	5.379	682.7	110.6	112.1	222.8	4400	2.500	1788.7	660.4	0.0	660.4
4500	5.399	694.4	112.5	114.8	227.4	4500	2.500	1814.8	670.1	0.0	670.1
4600	5.419	706.0	114.4	117.5	232.0	4600	2.500	1840.7	679.6	0.0	679.6
4700	5.439	717.4	116.3	120.3	236.5	4700	2.500	1866.4	689.1	0.0	689.1
4800	5.458	728.8	118.1	123.0	241.1	4800	2.500	1891.9	698.6	0.0	698.6
4900	5.478	740.0	119.9	125.7	245.7	4900	2.500	1917.3	707.9	0.0	707.9
5000	5.498	751.1	121.7	128.5	250.2	5000	2.500	1942.4	717.2	0.0	717.2

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TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

O						OF					
M = 16.000, σ = 3.050, ϵ/k = 106.7						M = 35.00, σ = 3.412, ϵ/k = 109.6					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.851	70.0	32.6	4.0	36.6	100	3.500	81.6	17.4	6.1	23.5
200	2.734	135.1	62.9	5.2	68.1	200	3.543	158.1	33.7	12.4	46.0
300	2.634	188.6	87.8	4.1	92.0	300	3.705	221.2	47.1	20.0	67.1
400	2.584	234.4	109.2	3.2	112.4	400	3.888	275.2	58.6	28.6	87.2
500	2.557	275.0	128.1	2.6	130.6	500	4.036	323.2	68.8	37.2	106.0
600	2.541	311.9	145.3	2.1	147.4	600	4.144	366.8	78.1	45.2	123.3
700	2.531	346.4	161.3	1.7	163.1	700	4.221	407.5	86.8	52.6	139.3
800	2.524	379.0	176.5	1.5	178.0	800	4.277	445.8	94.9	59.4	154.3
900	2.519	409.8	190.9	1.3	192.1	900	4.318	482.2	102.7	65.7	168.4
1000	2.516	439.1	204.5	1.1	205.6	1000	4.350	516.8	110.0	71.6	181.7
1100	2.513	467.1	217.5	1.0	218.5	1100	4.374	549.8	117.1	77.2	194.3
1200	2.511	494.0	230.1	0.9	231.0	1200	4.392	581.6	123.8	82.5	206.3
1300	2.509	520.0	242.2	0.8	243.0	1300	4.407	612.2	130.4	87.5	217.9
1400	2.508	545.3	254.0	0.7	254.7	1400	4.420	642.0	136.7	92.4	229.1
1500	2.507	570.2	265.6	0.7	266.2	1500	4.430	671.2	142.9	97.1	240.0
1600	2.506	594.7	277.0	0.6	277.6	1600	4.438	699.9	149.0	101.7	250.7
1700	2.506	619.3	288.4	0.6	289.0	1700	4.445	728.5	155.1	106.2	261.3
1800	2.505	642.9	299.5	0.6	300.0	1800	4.450	756.7	161.1	110.6	271.7
1900	2.505	666.1	310.2	0.5	310.8	1900	4.455	784.0	166.9	114.9	281.8
2000	2.505	688.8	320.8	0.5	321.3	2000	4.460	810.7	172.6	119.1	291.7
2100	2.505	711.0	331.2	0.6	331.7	2100	4.463	836.9	178.2	123.1	301.3
2200	2.505	732.9	341.3	0.6	342.0	2200	4.466	862.6	183.7	127.1	310.8
2300	2.506	754.3	351.3	0.7	352.1	2300	4.469	887.9	189.1	131.1	320.1
2400	2.507	775.5	361.2	0.8	362.0	2400	4.472	912.8	194.4	134.9	329.3
2500	2.508	796.3	370.9	1.0	371.9	2500	4.474	937.3	199.6	138.7	338.2
2600	2.509	816.8	380.4	1.2	381.7	2600	4.476	961.5	204.7	142.4	347.1
2700	2.511	837.0	389.8	1.5	391.3	2700	4.478	985.3	209.8	146.0	355.8
2800	2.513	856.9	399.1	1.8	401.0	2800	4.479	1008.8	214.8	149.6	364.4
2900	2.515	876.6	408.3	2.2	410.5	2900	4.481	1031.9	219.7	153.2	372.9
3000	2.518	896.1	417.4	2.7	420.0	3000	4.482	1054.8	224.6	156.7	381.3
3100	2.521	915.3	426.3	3.2	429.5	3100	4.483	1077.4	229.4	160.1	389.5
3200	2.525	934.2	435.1	3.8	438.9	3200	4.484	1099.8	234.2	163.5	397.7
3300	2.528	953.0	443.9	4.4	448.3	3300	4.485	1121.9	238.9	166.9	405.8
3400	2.532	971.6	452.5	5.2	457.7	3400	4.486	1143.7	243.5	170.2	413.7
3500	2.537	989.9	461.1	6.0	467.0	3500	4.487	1165.3	248.1	173.5	421.6
3600	2.541	1008.1	469.5	6.8	476.4	3600	4.487	1186.7	252.7	176.8	429.4
3700	2.546	1026.1	477.9	7.8	485.7	3700	4.488	1207.9	257.2	180.0	437.2
3800	2.551	1043.9	486.2	8.8	495.0	3800	4.489	1228.9	261.7	183.2	444.8
3900	2.557	1061.5	494.4	9.9	504.3	3900	4.489	1249.7	266.1	186.3	452.4
4000	2.562	1079.0	502.6	11.0	513.6	4000	4.490	1270.3	270.5	189.4	459.9
4100	2.568	1096.4	510.6	12.2	522.8	4100	4.490	1290.7	274.8	192.5	467.3
4200	2.573	1113.5	518.6	13.4	532.1	4200	4.491	1310.9	279.1	195.6	474.7
4300	2.579	1130.6	526.6	14.7	541.3	4300	4.491	1330.9	283.4	198.6	482.0
4400	2.585	1147.5	534.4	16.0	550.5	4400	4.491	1350.8	287.6	201.6	489.2
4500	2.591	1164.2	542.2	17.4	559.7	4500	4.492	1370.6	291.8	204.6	496.4
4600	2.597	1180.8	550.0	18.9	568.8	4600	4.492	1390.1	296.0	207.6	503.5
4700	2.603	1197.3	557.7	20.3	578.0	4700	4.493	1409.5	300.1	210.5	510.6
4800	2.610	1213.7	565.3	21.8	587.1	4800	4.493	1428.8	304.2	213.4	517.6
4900	2.616	1229.9	572.9	23.3	596.2	4900	4.493	1447.9	308.3	216.3	524.6
5000	2.622	1246.1	580.4	24.9	605.3	5000	4.493	1466.9	312.3	219.2	531.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

OF_2						OH					
$M = 54.00$, $\sigma = 3.878$, $\epsilon/k = 161$						$M = 17.01$, $\sigma = 3.147$, $\epsilon/k = 79.8$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.059	64.3	8.9	4.9	13.7	100	3.503	78.1	34.2	12.1	46.3
200	4.578	129.1	17.8	13.0	30.8	200	3.503	144.2	63.2	22.3	85.5
300	5.221	187.7	25.9	24.8	50.7	300	3.505	196.7	86.2	30.5	116.6
400	5.725	238.7	32.9	37.4	70.3	400	3.507	241.4	105.7	37.5	143.2
500	6.071	284.2	39.2	49.3	88.5	500	3.511	281.2	123.2	43.9	167.1
600	6.303	325.7	45.0	60.2	105.1	600	3.524	318.0	139.3	50.2	189.5
700	6.463	364.1	50.2	70.1	120.3	700	3.547	352.2	154.3	56.9	211.2
800	6.575	399.8	55.2	79.2	134.3	800	3.582	384.2	168.3	64.1	232.4
900	6.657	433.7	59.8	87.6	147.4	900	3.627	414.5	181.6	72.1	253.6
1000	6.717	466.0	64.3	95.5	159.8	1000	3.679	443.4	194.3	80.6	274.9
1100	6.764	497.0	68.6	102.9	171.5	1100	3.735	471.5	206.6	89.8	296.3
1200	6.799	526.9	72.7	110.0	182.8	1200	3.792	499.1	218.6	99.4	318.1
1300	6.828	555.7	76.7	116.8	193.5	1300	3.848	526.3	230.6	109.4	340.0
1400	6.851	583.6	80.5	123.3	203.9	1400	3.903	552.5	242.0	119.5	361.6
1500	6.869	610.6	84.3	129.6	213.8	1500	3.955	577.9	253.2	129.7	382.9
1600	6.885	636.7	87.9	135.6	223.5	1600	4.004	602.7	264.1	139.8	403.8
1700	6.898	662.1	91.4	141.4	232.8	1700	4.049	627.0	274.7	149.8	424.5
1800	6.908	686.9	94.8	147.1	241.9	1800	4.092	650.7	285.1	159.8	444.8
1900	6.918	711.1	98.1	152.6	250.7	1900	4.132	673.9	295.2	169.6	464.8
2000	6.925	734.9	101.4	158.0	259.4	2000	4.168	696.7	305.2	179.2	484.5
2100	6.932	758.3	104.6	163.3	267.9	2100	4.202	719.1	315.0	188.7	503.8
2200	6.938	781.4	107.8	168.5	276.3	2200	4.234	741.0	324.7	198.1	522.8
2300	6.943	804.2	111.0	173.6	284.6	2300	4.263	762.6	334.1	207.3	541.4
2400	6.948	827.0	114.1	178.7	292.8	2400	4.290	783.9	343.4	216.4	559.8
2500	6.952	849.7	117.3	183.8	301.0	2500	4.315	804.9	352.6	225.3	577.9
2600	6.956	872.2	120.4	188.8	309.1	2600	4.339	825.5	361.7	234.1	595.8
2700	6.959	894.0	123.4	193.6	317.0	2700	4.361	845.9	370.6	242.8	613.3
2800	6.962	915.5	126.3	198.4	324.8	2800	4.382	866.0	379.4	251.3	630.7
2900	6.964	936.8	129.3	203.1	332.4	2900	4.401	885.8	388.1	259.7	647.8
3000	6.967	957.7	132.2	207.8	340.0	3000	4.419	905.4	396.7	268.0	664.6
3100	6.969	978.4	135.0	212.4	347.4	3100	4.437	924.8	405.1	276.2	681.3
3200	6.971	998.9	137.8	216.9	354.8	3200	4.453	943.9	413.5	284.3	697.8
3300	6.972	1019.1	140.6	221.4	362.0	3300	4.468	962.8	421.8	292.3	714.1
3400	6.974	1039.0	143.4	225.8	369.2	3400	4.483	981.5	430.0	300.2	730.2
3500	6.975	1058.8	146.1	230.2	376.3	3500	4.497	1000.1	438.1	308.0	746.1
3600	6.977	1078.3	148.8	234.5	383.3	3600	4.511	1018.4	446.2	315.8	761.9
3700	6.978	1097.7	151.5	238.8	390.3	3700	4.523	1036.5	454.1	323.4	777.5
3800	6.979	1116.8	154.1	243.0	397.1	3800	4.536	1054.5	462.0	331.0	793.0
3900	6.980	1135.8	156.7	247.2	403.9	3900	4.548	1072.3	469.8	338.6	808.4
4000	6.981	1154.6	159.3	251.3	410.7	4000	4.559	1090.0	477.5	346.1	823.6
4100	6.982	1173.2	161.9	255.4	417.3	4100	4.570	1107.5	485.2	353.5	838.7
4200	6.983	1191.6	164.4	259.5	423.9	4200	4.581	1124.8	492.8	360.9	853.7
4300	6.984	1209.9	167.0	263.5	430.5	4300	4.591	1142.0	500.3	368.3	868.6
4400	6.984	1228.0	169.5	267.5	437.0	4400	4.601	1159.1	507.8	375.6	883.4
4500	6.985	1246.0	172.0	271.5	443.4	4500	4.611	1176.0	515.2	382.9	898.1
4600	6.986	1263.9	174.4	275.4	449.8	4600	4.621	1192.8	522.6	390.1	912.7
4700	6.986	1281.6	176.9	279.3	456.2	4700	4.630	1209.4	529.9	397.3	927.2
4800	6.987	1299.1	179.3	283.2	462.4	4800	4.640	1226.0	537.1	404.5	941.6
4900	6.987	1316.5	181.7	287.0	468.7	4900	4.649	1242.4	544.3	411.7	956.0
5000	6.988	1333.8	184.1	290.8	474.9	5000	4.658	1258.7	551.4	418.8	970.3

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

O_2						P					
$M = 32.00$, $\sigma = 3.467$, $\epsilon/k = 106.7$						$M = 30.975$, $\sigma = 4.115$, $\epsilon/k = 653$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.501	76.6	17.8	6.3	24.1	100	2.500	----	----	---	----
200	3.503	147.9	34.4	12.2	46.6	200	2.500	45.0	10.8	0.0	10.8
300	3.534	206.4	48.1	17.5	65.6	300	2.500	64.8	15.6	0.0	15.6
400	3.621	256.5	59.7	23.6	83.3	400	2.500	85.9	20.7	0.0	20.7
500	3.739	301.0	70.1	30.6	100.7	500	2.500	107.7	25.9	0.0	25.9
600	3.860	341.4	79.5	38.0	117.6	600	2.500	129.7	31.2	0.0	31.2
700	3.967	379.1	88.3	45.6	133.9	700	2.500	151.3	36.4	0.0	36.4
800	4.057	414.8	96.6	52.9	149.5	800	2.500	172.5	41.5	0.0	41.5
900	4.132	448.5	104.4	60.0	164.4	900	2.500	193.2	46.5	0.0	46.5
1000	4.194	480.6	111.9	66.7	178.6	1000	2.500	213.3	51.3	0.0	51.3
1100	4.246	511.2	119.1	73.2	192.2	1100	2.500	232.6	56.0	0.0	56.0
1200	4.290	540.6	125.9	79.3	205.2	1200	2.501	251.2	60.4	0.0	60.4
1300	4.328	569.1	132.5	85.3	217.8	1300	2.501	269.1	64.8	0.0	64.8
1400	4.363	596.8	139.0	91.2	230.1	1400	2.503	286.5	68.9	0.1	69.0
1500	4.395	624.0	145.3	97.0	242.3	1500	2.505	303.4	73.0	0.1	73.1
1600	4.426	650.9	151.6	102.8	254.3	1600	2.509	319.7	76.9	0.3	77.2
1700	4.455	677.8	157.8	108.6	266.5	1700	2.515	335.6	80.7	0.4	81.2
1800	4.483	703.7	163.9	114.4	278.3	1800	2.523	351.1	84.5	0.7	85.2
1900	4.511	729.0	169.8	120.2	290.0	1900	2.534	366.2	88.1	1.1	89.2
2000	4.539	753.8	175.6	126.0	301.6	2000	2.547	381.0	91.7	1.5	93.2
2100	4.567	778.2	181.2	131.8	313.1	2100	2.563	395.4	95.1	2.1	97.2
2200	4.594	802.1	186.8	137.7	324.5	2200	2.582	409.5	98.5	2.9	101.4
2300	4.621	825.6	192.3	143.5	335.8	2300	2.604	423.3	101.8	3.7	105.6
2400	4.647	848.7	197.7	149.4	347.0	2400	2.629	436.8	105.1	4.8	109.9
2500	4.673	871.5	203.0	155.3	358.2	2500	2.657	450.0	108.3	6.0	114.2
2600	4.699	894.0	208.2	161.1	369.3	2600	2.686	463.0	111.4	7.3	118.7
2700	4.724	916.1	213.3	167.0	380.3	2700	2.719	475.8	114.5	8.8	123.3
2800	4.748	937.9	218.4	172.8	391.3	2800	2.753	488.4	117.5	10.5	128.0
2900	4.771	959.5	223.4	178.7	402.1	2900	2.789	500.7	120.5	12.3	132.7
3000	4.794	980.7	228.4	184.4	412.8	3000	2.826	512.8	123.4	14.2	137.6
3100	4.816	1001.7	233.3	190.2	423.5	3100	2.865	524.7	126.2	16.2	142.5
3200	4.837	1022.5	238.1	195.9	434.0	3200	2.904	536.5	129.1	18.4	147.4
3300	4.858	1043.0	242.9	201.6	444.5	3300	2.944	548.0	131.8	20.6	152.5
3400	4.877	1063.3	247.6	207.2	454.8	3400	2.984	559.5	134.6	23.0	157.5
3500	4.896	1083.4	252.3	212.8	465.1	3500	3.025	570.7	137.3	25.4	162.7
3600	4.913	1103.3	256.9	218.3	475.2	3600	3.064	581.9	140.0	27.8	167.8
3700	4.930	1123.0	261.5	223.7	485.2	3700	3.104	592.9	142.6	30.3	173.0
3800	4.946	1142.5	266.1	229.1	495.2	3800	3.143	603.8	145.3	32.9	178.1
3900	4.961	1161.8	270.6	234.4	505.0	3900	3.180	614.6	147.9	35.4	183.3
4000	4.976	1181.0	275.0	239.7	514.7	4000	3.217	625.3	150.4	38.0	188.4
4100	4.989	1199.9	279.4	244.9	524.3	4100	3.253	635.9	153.0	40.5	193.5
4200	5.002	1218.7	283.8	250.0	533.8	4200	3.287	646.3	155.5	43.1	198.6
4300	5.015	1237.4	288.2	255.1	543.2	4300	3.320	656.7	158.0	45.6	203.6
4400	5.026	1255.9	292.5	260.1	552.5	4400	3.351	667.0	160.5	48.1	208.5
4500	5.037	1274.2	296.7	265.0	561.8	4500	3.380	677.2	162.9	50.5	213.4
4600	5.048	1292.4	301.0	270.0	570.9	4600	3.408	687.3	165.3	52.9	218.2
4700	5.058	1310.4	305.2	274.8	580.0	4700	3.434	697.3	167.8	55.2	222.9
4800	5.068	1328.4	309.3	279.7	589.0	4800	3.459	707.2	170.1	57.4	227.6
4900	5.078	1346.1	313.5	284.5	597.9	4900	3.482	717.0	172.5	59.6	232.1
5000	5.087	1363.8	317.6	289.2	606.8	5000	3.503	726.7	174.8	61.7	236.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

PCl_3						PF					
$M = 137.35$, $\sigma = 5.240$, $\epsilon/k = 419$						$M = 49.98$, $\sigma = 4.122$, $\epsilon/k = 271$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	5.598	37.8	2.1	2.2	4.3	100	3.505	43.2	6.4	2.3	8.7
200	7.640	69.9	3.8	6.9	10.6	200	3.565	84.6	12.6	4.7	17.3
300	8.680	104.7	5.7	12.4	18.0	300	3.752	127.4	19.0	8.4	27.4
400	9.186	140.2	7.6	17.9	25.5	400	3.948	168.1	25.1	12.8	37.8
500	9.455	174.9	9.5	23.2	32.7	500	4.100	205.6	30.6	17.3	47.9
600	9.612	208.4	11.3	28.3	39.6	600	4.211	240.0	35.8	21.6	57.3
700	9.710	240.1	13.0	33.1	46.1	700	4.292	272.0	40.6	25.6	66.1
800	9.776	270.1	14.7	37.5	52.2	800	4.352	302.0	45.0	29.4	74.4
900	9.822	298.5	16.2	41.7	57.9	900	4.399	330.4	49.3	32.9	82.2
1000	9.855	325.6	17.7	45.7	63.4	1000	4.435	357.2	53.3	36.3	89.5
1100	9.880	351.5	19.1	49.5	68.6	1100	4.465	382.9	57.1	39.5	96.6
1200	9.899	376.3	20.4	53.2	73.6	1200	4.490	407.5	60.8	42.6	103.3
1300	9.913	400.2	21.7	56.7	78.4	1300	4.511	431.1	64.3	45.5	109.8
1400	9.925	423.3	23.0	60.0	83.0	1400	4.530	453.8	67.7	48.3	116.0
1500	9.935	445.6	24.2	63.3	87.5	1500	4.546	475.8	71.0	51.1	122.1
1600	9.943	467.2	25.4	66.4	91.8	1600	4.561	497.3	74.2	53.8	128.0
1700	9.949	488.2	26.5	69.5	96.0	1700	4.575	518.3	77.3	56.4	133.7
1800	9.955	508.7	27.6	72.4	100.0	1800	4.588	538.7	80.3	59.0	139.4
1900	9.959	528.6	28.7	75.3	104.0	1900	4.600	558.7	83.3	61.6	144.9
2000	9.963	547.9	29.7	78.1	107.8	2000	4.611	578.3	86.2	64.1	150.3
2100	9.967	566.8	30.8	80.8	111.6	2100	4.622	597.4	89.1	66.5	155.6
2200	9.970	585.3	31.8	83.5	115.3	2200	4.632	616.1	91.9	69.0	160.8
2300	9.972	603.5	32.7	86.1	118.9	2300	4.642	634.5	94.6	71.3	166.0
2400	9.974	621.4	33.7	88.7	122.4	2400	4.652	652.5	97.3	73.7	171.0
2500	9.976	638.9	34.7	91.2	125.9	2500	4.661	670.2	99.9	76.0	176.0
2600	9.978	656.2	35.6	93.7	129.3	2600	4.671	687.5	102.5	78.3	180.8
2700	9.980	673.2	36.5	96.2	132.7	2700	4.680	704.6	105.1	80.6	185.7
2800	9.981	690.0	37.4	98.6	136.0	2800	4.688	721.3	107.6	82.9	190.4
2900	9.982	706.5	38.3	101.0	139.3	2900	4.697	737.8	110.0	85.1	195.1
3000	9.984	722.8	39.2	103.3	142.5	3000	4.706	754.1	112.4	87.3	199.7
3100	9.985	738.8	40.1	105.6	145.7	3100	4.714	770.1	114.8	89.5	204.3
3200	9.986	754.7	40.9	107.9	148.8	3200	4.723	785.9	117.2	91.7	208.9
3300	9.986	770.3	41.8	110.1	151.9	3300	4.731	801.6	119.5	93.9	213.4
3400	9.987	785.7	42.6	112.3	155.0	3400	4.739	817.1	121.8	96.0	217.9
3500	9.988	800.9	43.5	114.5	158.0	3500	4.747	832.4	124.1	98.2	222.3
3600	9.989	815.9	44.3	116.7	161.0	3600	4.755	847.6	126.4	100.3	226.7
3700	9.989	830.7	45.1	118.8	163.9	3700	4.763	862.8	128.6	102.5	231.1
3800	9.990	845.4	45.9	120.9	166.8	3800	4.771	877.8	130.9	104.6	235.5
3900	9.990	859.8	46.7	123.0	169.7	3900	4.779	892.8	133.1	106.8	239.9
4000	9.991	874.1	47.4	125.1	172.5	4000	4.787	907.7	135.3	109.0	244.3
4100	9.991	888.3	48.2	127.1	175.3	4100	4.795	922.6	137.6	111.1	248.7
4200	9.992	902.2	49.0	129.1	178.0	4200	4.803	937.5	139.8	113.3	253.1
4300	9.992	916.1	49.7	131.1	180.8	4300	4.811	952.4	142.0	115.5	257.5
4400	9.992	929.8	50.4	133.0	183.5	4400	4.819	967.0	144.2	117.7	261.8
4500	9.993	943.3	51.2	135.0	186.2	4500	4.826	981.3	146.3	119.8	266.1
4600	9.993	956.7	51.9	136.9	188.8	4600	4.834	995.5	148.4	122.0	270.4
4700	9.993	970.0	52.6	138.8	191.5	4700	4.842	1009.6	150.5	124.1	274.6
4800	9.994	983.2	53.3	140.7	194.1	4800	4.849	1023.6	152.6	126.2	278.8
4900	9.994	996.3	54.1	142.6	196.6	4900	4.857	1037.5	154.7	128.4	283.0
5000	9.994	1009.3	54.8	144.5	199.2	5000	4.865	1051.3	156.7	130.5	287.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

PF_3						PH_3					
$M = 87.98$, $\sigma = 4.360$, $\epsilon/k = 203.3$						$M = 34.00$, $\sigma = 3.981$, $\epsilon/k = 251.5$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.398	57.9	4.9	3.3	8.2	100	4.000	39.3	8.6	4.6	13.2
200	5.848	116.4	9.9	11.6	21.5	200	4.082	77.8	17.0	9.5	26.5
300	7.078	172.6	14.6	23.6	38.2	300	4.474	116.8	25.6	17.8	43.4
400	7.947	223.2	18.9	36.2	55.2	400	5.028	153.4	33.6	29.9	63.5
500	8.519	268.6	22.8	48.2	71.0	500	5.592	186.8	40.9	44.6	85.5
600	8.896	310.2	26.3	59.1	85.4	600	6.124	217.4	47.6	60.8	108.4
700	9.152	348.6	29.5	69.1	98.7	700	6.608	245.8	53.9	77.9	131.8
800	9.331	384.5	32.6	78.3	110.9	800	7.037	272.4	59.7	95.4	155.1
900	9.460	418.5	35.4	86.8	122.3	900	7.411	297.5	65.2	112.7	177.9
1000	9.556	450.5	38.2	94.8	133.0	1000	7.733	321.3	70.4	129.7	200.1
1100	9.629	481.2	40.8	102.3	143.0	1100	8.008	344.1	75.4	146.2	221.6
1200	9.686	510.7	43.3	109.4	152.7	1200	8.242	365.8	80.2	162.1	242.2
1300	9.730	539.3	45.7	116.3	161.9	1300	8.441	386.7	84.8	177.3	262.0
1400	9.766	567.0	48.0	122.8	170.9	1400	8.612	406.9	89.2	191.9	281.1
1500	9.795	593.8	50.3	129.2	179.5	1500	8.758	426.6	93.5	206.0	299.4
1600	9.820	620.0	52.5	135.3	187.8	1600	8.884	445.7	97.7	219.5	317.2
1700	9.840	645.4	54.7	141.2	195.9	1700	8.992	464.4	101.8	232.6	334.4
1800	9.857	670.1	56.8	147.0	203.7	1800	9.086	482.6	105.8	245.2	351.0
1900	9.871	694.2	58.8	152.6	211.4	1900	9.169	500.3	109.7	257.4	367.1
2000	9.883	717.8	60.8	158.0	218.8	2000	9.241	517.7	113.5	269.3	382.7
2100	9.894	740.8	62.7	163.3	226.1	2100	9.304	534.7	117.2	280.7	397.9
2200	9.903	763.3	64.7	168.5	233.1	2200	9.360	551.4	120.8	291.8	412.7
2300	9.912	785.4	66.5	173.6	240.1	2300	9.410	567.7	124.4	302.6	427.1
2400	9.919	807.1	68.4	178.5	246.9	2400	9.454	583.6	127.9	313.1	441.1
2500	9.925	828.5	70.2	183.4	253.6	2500	9.494	599.3	131.4	323.4	454.7
2600	9.931	849.6	72.0	188.2	260.2	2600	9.530	614.7	134.7	333.4	468.1
2700	9.936	870.5	73.7	193.0	266.7	2700	9.562	629.8	138.0	343.1	481.2
2800	9.940	891.2	75.5	197.7	273.2	2800	9.591	644.7	141.3	352.7	494.0
2900	9.944	911.7	77.2	202.4	279.6	2900	9.617	659.4	144.5	362.1	506.6
3000	9.948	932.2	79.0	207.0	286.0	3000	9.641	673.9	147.7	371.2	518.9
3100	9.951	952.5	80.7	211.6	292.3	3100	9.662	688.2	150.8	380.3	531.1
3200	9.954	972.9	82.4	216.2	298.6	3200	9.682	702.3	153.9	389.2	543.1
3300	9.957	993.0	84.1	220.8	304.9	3300	9.700	716.3	157.0	397.9	555.0
3400	9.959	1012.6	85.8	225.2	311.0	3400	9.717	730.3	160.1	406.6	566.7
3500	9.962	1032.0	87.4	229.6	317.0	3500	9.732	744.1	163.1	415.2	578.3
3600	9.964	1051.2	89.0	233.9	323.0	3600	9.747	757.8	166.1	423.7	589.8
3700	9.966	1070.2	90.6	238.2	328.9	3700	9.760	771.5	169.1	432.1	601.2
3800	9.967	1089.0	92.2	242.5	334.7	3800	9.772	785.2	172.1	440.5	612.6
3900	9.969	1107.6	93.8	246.6	340.5	3900	9.783	798.9	175.1	448.9	624.0
4000	9.970	1126.0	95.4	250.8	346.2	4000	9.793	812.5	178.1	457.2	635.3
4100	9.972	1144.2	96.9	254.9	351.8	4100	9.803	825.9	181.0	465.3	646.4
4200	9.973	1162.3	98.5	259.0	357.4	4200	9.812	839.0	183.9	473.3	657.2
4300	9.974	1180.2	100.0	263.0	363.0	4300	9.820	852.1	186.8	481.2	668.0
4400	9.976	1198.0	101.5	267.0	368.5	4400	9.828	865.0	189.6	489.0	678.6
4500	9.977	1215.6	103.0	271.0	373.9	4500	9.836	877.8	192.4	496.8	689.2
4600	9.978	1233.1	104.4	274.9	379.4	4600	9.843	890.4	195.2	504.4	699.6
4700	9.979	1250.4	105.9	278.8	384.7	4700	9.849	903.0	197.9	512.0	709.9
4800	9.979	1267.6	107.4	282.7	390.0	4800	9.855	915.5	200.7	519.5	720.2
4900	9.980	1284.6	108.8	286.5	395.3	4900	9.861	927.9	203.4	526.9	730.3
5000	9.981	1301.6	110.2	290.3	400.6	5000	9.866	940.2	206.1	534.3	740.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

PN						PO					
$M = 44.98$, $\sigma = 4.342$, $\epsilon/k = 216$						$M = 46.98$, $\sigma = 4.177$, $\epsilon/k = 264$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.500	40.6	6.7	2.4	9.1	100	3.501	41.2	6.5	2.3	8.8
200	3.508	81.4	13.5	4.8	18.3	200	3.513	81.0	12.8	4.6	17.4
300	3.573	121.2	20.1	7.6	27.7	300	3.602	121.8	19.3	7.5	26.8
400	3.701	157.4	26.1	11.0	37.1	400	3.750	160.5	25.5	11.2	36.7
500	3.843	190.0	31.5	14.9	46.4	500	3.899	196.0	31.1	15.3	46.4
600	3.968	219.9	36.4	18.8	55.3	600	4.023	228.6	36.3	19.4	55.7
700	4.070	247.5	41.0	22.7	63.7	700	4.121	258.8	41.1	23.4	64.5
800	4.151	273.4	45.3	26.3	71.6	800	4.196	287.2	45.6	27.2	72.8
900	4.215	297.8	49.3	29.8	79.1	900	4.255	313.9	49.8	30.8	80.6
1000	4.266	321.0	53.2	33.0	86.2	1000	4.301	339.3	53.8	34.1	88.0
1100	4.306	343.0	56.8	36.1	93.0	1100	4.338	363.6	57.7	37.3	95.0
1200	4.340	364.1	60.3	39.1	99.4	1200	4.368	386.8	61.4	40.4	101.7
1300	4.367	384.6	63.7	41.9	105.6	1300	4.393	409.1	64.9	43.2	108.1
1400	4.390	404.4	67.0	44.6	111.6	1400	4.413	430.6	68.3	46.0	114.3
1500	4.409	423.7	70.2	47.2	117.4	1500	4.431	451.5	71.6	48.7	120.3
1600	4.426	442.5	73.3	49.7	123.0	1600	4.446	471.8	74.8	51.3	126.1
1700	4.440	460.7	76.3	52.1	128.5	1700	4.459	491.6	78.0	53.8	131.7
1800	4.453	478.5	79.3	54.5	133.8	1800	4.470	511.0	81.1	56.2	137.3
1900	4.464	495.9	82.2	56.8	138.9	1900	4.480	529.9	84.1	58.6	142.6
2000	4.474	512.8	85.0	59.0	144.0	2000	4.490	548.4	87.0	60.9	147.9
2100	4.482	529.3	87.7	61.2	148.9	2100	4.498	566.5	89.9	63.2	153.0
2200	4.491	545.5	90.4	63.3	153.7	2200	4.505	584.2	92.7	65.4	158.1
2300	4.498	561.4	93.0	65.4	158.4	2300	4.512	601.6	95.4	67.6	163.0
2400	4.505	576.9	95.6	67.5	163.0	2400	4.519	618.6	98.1	69.7	167.8
2500	4.511	592.3	98.1	69.5	167.6	2500	4.525	635.3	100.8	71.8	172.6
2600	4.517	607.3	100.6	71.4	172.1	2600	4.530	651.7	103.4	73.9	177.2
2700	4.522	622.2	103.1	73.4	176.5	2700	4.536	667.8	105.9	75.9	181.8
2800	4.528	636.9	105.5	75.3	180.8	2800	4.541	683.6	108.4	77.9	186.3
2900	4.532	651.4	107.9	77.2	185.1	2900	4.545	699.2	110.9	79.9	190.8
3000	4.537	665.9	110.3	79.1	189.4	3000	4.550	714.6	113.4	81.8	195.2
3100	4.542	680.2	112.7	81.0	193.7	3100	4.554	729.8	115.8	83.7	199.5
3200	4.546	694.5	115.1	82.9	197.9	3200	4.559	744.8	118.1	85.6	203.8
3300	4.550	708.8	117.4	84.7	202.2	3300	4.563	759.6	120.5	87.5	208.0
3400	4.554	723.0	119.8	86.6	206.4	3400	4.567	774.3	122.8	89.4	212.2
3500	4.558	737.1	122.1	88.5	210.6	3500	4.571	788.9	125.1	91.2	216.3
3600	4.561	750.8	124.4	90.3	214.7	3600	4.574	803.4	127.4	93.0	220.5
3700	4.565	764.4	126.6	92.1	218.7	3700	4.578	817.7	129.7	94.9	224.6
3800	4.568	777.9	128.9	93.8	222.7	3800	4.582	832.1	132.0	96.7	228.7
3900	4.572	791.2	131.1	95.6	226.7	3900	4.585	846.3	134.3	98.5	232.8
4000	4.575	804.4	133.3	97.3	230.6	4000	4.589	860.6	136.5	100.4	236.9
4100	4.578	817.4	135.4	99.1	234.5	4100	4.592	874.8	138.8	102.2	241.0
4200	4.582	830.3	137.6	100.8	238.4	4200	4.595	889.1	141.0	104.0	245.0
4300	4.585	843.2	139.7	102.5	242.2	4300	4.599	903.0	143.2	105.8	249.0
4400	4.588	855.9	141.8	104.2	246.0	4400	4.602	916.7	145.4	107.6	253.0
4500	4.591	868.5	143.9	105.9	249.8	4500	4.605	930.3	147.6	109.3	256.9
4600	4.594	881.0	146.0	107.6	253.5	4600	4.608	943.7	149.7	111.1	260.8
4700	4.597	893.4	148.0	109.2	257.3	4700	4.611	957.1	151.8	112.8	264.7
4800	4.600	905.7	150.0	110.9	261.0	4800	4.614	970.3	153.9	114.6	268.5
4900	4.603	917.9	152.1	112.6	264.6	4900	4.618	983.5	156.0	116.3	272.3
5000	4.605	930.0	154.1	114.2	268.3	5000	4.621	996.5	158.1	118.0	276.1

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

PS						P_2					
$M = 63.04$, $\sigma = 4.703$, $\epsilon/k = 744$						$M = 61.95$, $\sigma = 4.887$, $\epsilon/k = 653$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.504	----	---	---	---	100	3.502	----	---	---	---
200	3.646	46.9	5.5	2.2	7.8	200	3.620	45.1	5.4	2.1	7.6
300	3.895	66.9	7.9	3.9	11.8	300	3.857	64.9	7.8	3.7	11.5
400	4.085	87.9	10.4	5.8	16.2	400	4.050	86.1	10.4	5.7	16.0
500	4.211	110.0	13.0	7.8	20.8	500	4.182	108.0	13.0	7.7	20.7
600	4.293	132.4	15.7	9.9	25.5	600	4.270	130.0	15.6	9.7	25.4
700	4.349	154.9	18.3	11.9	30.2	700	4.330	151.7	18.3	11.8	30.0
800	4.389	176.9	20.9	13.9	34.8	800	4.373	173.0	20.8	13.7	34.5
900	4.418	198.7	23.5	15.9	39.3	900	4.405	193.8	23.3	15.6	38.9
1000	4.441	220.0	26.0	17.8	43.8	1000	4.429	213.8	25.7	17.5	43.2
1100	4.459	240.6	28.4	19.6	48.1	1100	4.448	233.2	28.1	19.2	47.3
1200	4.473	260.7	30.8	21.4	52.2	1200	4.463	251.9	30.3	20.9	51.2
1300	4.485	280.1	33.1	23.1	56.2	1300	4.476	269.9	32.5	22.6	55.0
1400	4.495	298.9	35.3	24.8	60.2	1400	4.487	287.3	34.6	24.2	58.7
1500	4.504	317.2	37.5	26.5	63.9	1500	4.496	304.2	36.6	25.7	62.3
1600	4.512	334.9	39.6	28.0	67.6	1600	4.504	320.6	38.6	27.2	65.8
1700	4.519	352.1	41.6	29.6	71.2	1700	4.511	336.5	40.5	28.7	69.1
1800	4.525	368.9	43.6	31.1	74.7	1800	4.518	352.1	42.4	30.1	72.4
1900	4.531	385.3	45.6	32.6	78.1	1900	4.524	367.2	44.2	31.5	75.6
2000	4.537	401.3	47.4	34.0	81.5	2000	4.529	382.0	46.0	32.8	78.8
2100	4.542	417.0	49.3	35.4	84.7	2100	4.534	396.4	47.7	34.1	81.8
2200	4.547	432.3	51.1	36.8	87.9	2200	4.539	410.6	49.4	35.5	84.8
2300	4.551	447.3	52.9	38.2	91.1	2300	4.544	424.4	51.1	36.7	87.8
2400	4.556	462.0	54.6	39.5	94.1	2400	4.548	437.9	52.7	38.0	90.7
2500	4.560	476.4	56.3	40.8	97.2	2500	4.552	451.2	54.3	39.2	93.5
2600	4.564	490.6	58.0	42.1	100.1	2600	4.556	464.2	55.8	40.4	96.3
2700	4.568	504.4	59.6	43.4	103.0	2700	4.560	477.1	57.4	41.6	99.0
2800	4.572	518.1	61.2	44.7	105.9	2800	4.564	489.7	58.9	42.8	101.7
2900	4.576	531.5	62.8	45.9	108.7	2900	4.567	502.1	60.4	44.0	104.3
3000	4.580	544.7	64.4	47.1	111.5	3000	4.571	514.2	61.9	45.1	106.9
3100	4.583	557.8	65.9	48.4	114.3	3100	4.575	526.1	63.3	46.2	109.5
3200	4.587	570.6	67.5	49.5	117.0	3200	4.578	537.9	64.7	47.3	112.0
3300	4.590	583.2	68.9	50.7	119.7	3300	4.581	549.5	66.1	48.4	114.5
3400	4.594	595.6	70.4	51.9	122.3	3400	4.585	561.0	67.5	49.5	117.0
3500	4.597	607.8	71.9	53.0	124.9	3500	4.588	572.3	68.8	50.6	119.4
3600	4.601	619.9	73.3	54.2	127.5	3600	4.592	583.5	70.2	51.7	121.9
3700	4.604	631.8	74.7	55.3	130.0	3700	4.595	594.5	71.5	52.7	124.3
3800	4.607	643.6	76.1	56.4	132.5	3800	4.598	605.4	72.8	53.8	126.6
3900	4.611	655.2	77.5	57.6	135.0	3900	4.602	616.3	74.1	54.8	129.0
4000	4.614	666.8	78.8	58.7	137.5	4000	4.605	627.0	75.4	55.9	131.3
4100	4.617	678.2	80.2	59.7	139.9	4100	4.609	637.6	76.7	56.9	133.6
4200	4.621	689.5	81.5	60.8	142.3	4200	4.613	648.1	78.0	58.0	135.9
4300	4.624	700.6	82.8	61.9	144.7	4300	4.616	658.5	79.2	59.0	138.2
4400	4.627	711.7	84.1	63.0	147.1	4400	4.620	668.8	80.5	60.0	140.5
4500	4.630	722.7	85.4	64.1	149.5	4500	4.624	679.0	81.7	61.1	142.8
4600	4.633	733.6	86.7	65.1	151.8	4600	4.629	689.1	82.9	62.1	145.0
4700	4.637	744.4	88.0	66.2	154.2	4700	4.633	699.1	84.1	63.1	147.2
4800	4.640	755.1	89.3	67.2	156.5	4800	4.638	709.1	85.3	64.2	149.5
4900	4.643	765.7	90.5	68.3	158.8	4900	4.643	718.9	86.5	65.2	151.7
5000	4.646	776.2	91.8	69.3	161.1	5000	4.648	728.7	87.7	66.3	153.9

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

P_4						S					
$M = 123.90$, $\sigma = 5.455$, $\epsilon/k = 711$						$M = 32.066$, $\sigma = 3.839$, $\epsilon/k = 847$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.478	----	---	---	---	100	2.568	----	----	---	----
200	6.690	49.6	3.0	4.4	7.4	200	2.813	47.9	11.1	1.2	12.4
300	8.095	71.0	4.3	8.4	12.7	300	2.847	67.9	15.8	1.9	17.7
400	8.811	93.7	5.6	12.5	18.1	400	2.795	88.5	20.6	2.1	22.7
500	9.199	117.3	7.1	16.6	23.7	500	2.735	110.2	25.6	2.1	27.7
600	9.428	141.3	8.5	20.7	29.2	600	2.687	132.5	30.8	2.0	32.8
700	9.572	165.1	9.9	24.7	34.7	700	2.650	155.0	36.0	1.9	37.9
800	9.669	188.5	11.3	28.6	39.9	800	2.622	177.5	41.3	1.8	43.0
900	9.736	211.5	12.7	32.4	45.1	900	2.601	199.7	46.4	1.6	48.1
1000	9.785	233.9	14.1	36.1	50.1	1000	2.585	221.6	51.5	1.5	53.0
1100	9.821	255.6	15.4	39.6	55.0	1100	2.572	243.1	56.5	1.4	57.9
1200	9.850	276.7	16.6	43.0	59.7	1200	2.563	264.1	61.4	1.4	62.7
1300	9.871	297.0	17.9	46.3	64.2	1300	2.556	284.5	66.1	1.3	67.4
1400	9.889	316.6	19.0	49.5	68.6	1400	2.551	304.4	70.7	1.3	72.0
1500	9.903	335.7	20.2	52.6	72.8	1500	2.548	323.7	75.2	1.3	76.5
1600	9.915	354.2	21.3	55.6	76.9	1600	2.547	342.5	79.6	1.3	80.9
1700	9.924	372.3	22.4	58.5	80.9	1700	2.548	360.8	83.9	1.4	85.3
1800	9.932	389.8	23.4	61.3	84.8	1800	2.550	378.7	88.0	1.6	89.6
1900	9.939	406.9	24.5	64.1	88.6	1900	2.554	396.1	92.1	1.7	93.8
2000	9.945	423.6	25.5	66.8	92.3	2000	2.559	413.1	96.0	2.0	98.0
2100	9.950	440.0	26.5	69.4	95.9	2100	2.565	429.8	99.9	2.3	102.2
2200	9.955	456.0	27.4	72.0	99.4	2200	2.572	446.0	103.7	2.6	106.3
2300	9.959	471.6	28.4	74.5	102.8	2300	2.580	462.0	107.4	3.0	110.4
2400	9.962	487.0	29.3	76.9	106.2	2400	2.589	477.6	111.0	3.5	114.5
2500	9.965	502.0	30.2	79.3	109.5	2500	2.598	493.0	114.6	3.9	118.5
2600	9.968	516.8	31.1	81.7	112.8	2600	2.607	508.1	118.1	4.5	122.5
2700	9.970	531.2	32.0	84.0	116.0	2700	2.617	522.9	121.5	5.0	126.5
2800	9.972	545.5	32.8	86.3	119.1	2800	2.626	537.5	124.9	5.6	130.5
2900	9.974	559.5	33.7	88.5	122.2	2900	2.636	551.8	128.2	6.1	134.4
3000	9.976	573.4	34.5	90.7	125.2	3000	2.646	565.9	131.5	6.8	138.3
3100	9.977	586.9	35.3	92.9	128.2	3100	2.655	579.7	134.7	7.4	142.1
3200	9.979	600.3	36.1	95.0	131.1	3200	2.665	593.4	137.9	8.0	145.9
3300	9.980	613.4	36.9	97.1	134.0	3300	2.674	606.8	141.0	8.6	149.6
3400	9.981	626.3	37.7	99.2	136.9	3400	2.682	620.1	144.1	9.3	153.4
3500	9.982	639.1	38.4	101.2	139.7	3500	2.691	633.2	147.2	9.9	157.0
3600	9.983	651.7	39.2	103.2	142.4	3600	2.699	646.2	150.2	10.5	160.7
3700	9.984	664.1	39.9	105.2	145.2	3700	2.706	658.9	153.1	11.1	164.3
3800	9.985	676.5	40.7	107.2	147.9	3800	2.714	671.4	156.0	11.7	167.8
3900	9.986	688.6	41.4	109.1	150.6	3900	2.720	683.8	158.9	12.3	171.2
4000	9.986	700.7	42.1	111.1	153.2	4000	2.727	696.1	161.8	12.9	174.7
4100	9.987	712.6	42.9	113.0	155.8	4100	2.733	708.2	164.6	13.5	178.1
4200	9.988	724.4	43.6	114.8	158.4	4200	2.738	720.1	167.4	14.0	181.4
4300	9.988	736.2	44.3	116.7	161.0	4300	2.743	732.0	170.1	14.6	184.7
4400	9.989	747.7	45.0	118.6	163.5	4400	2.748	743.7	172.8	15.1	187.9
4500	9.989	759.2	45.7	120.4	166.1	4500	2.752	755.3	175.5	15.6	191.1
4600	9.990	770.6	46.4	122.2	168.5	4600	2.756	766.8	178.2	16.1	194.3
4700	9.990	781.9	47.0	124.0	171.0	4700	2.760	778.2	180.9	16.5	197.4
4800	9.990	793.1	47.7	125.8	173.5	4800	2.763	789.5	183.5	17.0	200.5
4900	9.991	804.2	48.4	127.5	175.9	4900	2.766	800.7	186.1	17.4	203.5
5000	9.991	815.2	49.0	129.3	178.3	5000	2.769	811.8	188.7	17.9	206.5

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

SF_6						SO					
$M = 146.07$, $\sigma = 5.128$, $\epsilon/k = 222.1$						$M = 48.07$, $\sigma = 3.993$, $\epsilon/k = 301$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.669	51.8	2.6	2.0	4.7	100	3.501	43.3	6.7	2.4	9.1
200	8.276	103.6	5.3	10.7	16.0	200	3.520	83.8	13.0	4.7	17.6
300	11.718	154.6	7.9	25.6	33.5	300	3.632	126.5	19.6	7.8	27.4
400	14.006	201.3	10.3	41.6	51.9	400	3.796	167.6	26.0	11.9	37.8
500	15.448	243.3	12.4	56.6	69.0	500	3.948	206.3	32.0	16.3	48.3
600	16.376	281.8	14.4	70.2	84.6	600	4.070	242.0	37.5	20.7	58.3
700	16.995	317.5	16.2	82.7	98.9	700	4.163	275.3	42.7	25.0	67.7
800	17.425	350.9	17.9	94.1	112.0	800	4.233	306.5	47.5	29.0	76.5
900	17.732	382.4	19.5	104.6	124.1	900	4.288	335.9	52.1	32.8	84.9
1000	17.959	412.3	21.0	114.5	135.5	1000	4.330	364.0	56.4	36.3	92.8
1100	18.131	440.7	22.5	123.7	146.2	1100	4.364	390.7	60.6	39.7	100.3
1200	18.265	468.0	23.9	132.5	156.4	1200	4.391	416.2	64.5	43.0	107.5
1300	18.370	494.4	25.2	140.9	166.1	1300	4.414	441.0	68.4	46.0	114.4
1400	18.454	520.0	26.5	149.0	175.5	1400	4.432	464.6	72.0	49.0	121.0
1500	18.522	544.8	27.8	156.8	184.6	1500	4.448	487.5	75.6	51.8	127.4
1600	18.579	569.0	29.0	164.3	193.3	1600	4.462	509.7	79.0	54.6	133.6
1700	18.626	592.5	30.2	171.6	201.8	1700	4.474	531.4	82.4	57.3	139.6
1800	18.666	615.4	31.4	178.7	210.1	1800	4.485	552.6	85.7	59.9	145.5
1900	18.699	637.8	32.5	185.6	218.1	1900	4.494	573.2	88.9	62.4	151.3
2000	18.728	659.7	33.7	192.3	225.9	2000	4.503	593.5	92.0	64.9	156.9
2100	18.753	681.0	34.7	198.8	233.5	2100	4.511	613.3	95.1	67.3	162.4
2200	18.775	701.9	35.8	205.1	241.0	2200	4.518	632.8	98.1	69.7	167.8
2300	18.794	722.4	36.9	211.4	248.2	2300	4.525	651.9	101.1	72.0	173.1
2400	18.810	742.5	37.9	217.5	255.4	2400	4.531	670.6	104.0	74.3	178.3
2500	18.825	762.2	38.9	223.5	262.3	2500	4.537	689.0	106.8	76.6	183.4
2600	18.838	781.6	39.9	229.3	269.2	2600	4.542	707.0	109.6	78.8	188.4
2700	18.850	800.7	40.9	235.1	276.0	2700	4.548	724.7	112.4	81.0	193.3
2800	18.860	819.6	41.8	240.8	282.6	2800	4.553	742.2	115.1	83.1	198.2
2900	18.870	838.3	42.8	246.4	289.2	2900	4.557	759.3	117.7	85.3	203.0
3000	18.878	856.8	43.7	252.0	295.7	3000	4.562	776.2	120.3	87.3	207.7
3100	18.886	875.2	44.6	257.5	302.2	3100	4.566	792.8	122.9	89.4	212.3
3200	18.893	893.4	45.6	263.0	308.6	3200	4.571	809.2	125.5	91.4	216.9
3300	18.899	911.6	46.5	268.5	315.0	3300	4.575	825.4	128.0	93.5	221.4
3400	18.905	929.8	47.4	273.9	321.4	3400	4.579	841.4	130.4	95.5	225.9
3500	18.910	948.0	48.4	279.4	327.7	3500	4.583	857.2	132.9	97.4	230.3
3600	18.915	965.9	49.3	284.7	334.0	3600	4.587	872.8	135.3	99.4	234.7
3700	18.920	983.4	50.2	290.0	340.1	3700	4.591	888.2	137.7	101.3	239.0
3800	18.924	1000.7	51.1	295.2	346.2	3800	4.594	903.6	140.1	103.3	243.3
3900	18.928	1017.8	51.9	300.3	352.2	3900	4.598	918.7	142.4	105.2	247.6
4000	18.931	1034.8	52.8	305.3	358.1	4000	4.602	933.8	144.8	107.1	251.9
4100	18.935	1051.6	53.7	310.4	364.0	4100	4.605	948.8	147.1	109.0	256.1
4200	18.938	1068.3	54.5	315.3	369.8	4200	4.609	963.8	149.4	110.9	260.3
4300	18.941	1084.8	55.3	320.3	375.6	4300	4.612	978.6	151.7	112.8	264.5
4400	18.943	1101.1	56.2	325.2	381.3	4400	4.616	993.4	154.0	114.7	268.7
4500	18.946	1117.4	57.0	330.0	387.0	4500	4.619	1008.2	156.3	116.6	272.9
4600	18.948	1133.5	57.8	334.8	392.6	4600	4.623	1023.0	158.6	118.5	277.1
4700	18.950	1149.4	58.6	339.6	398.2	4700	4.626	1037.7	160.9	120.4	281.3
4800	18.952	1165.2	59.4	344.3	403.7	4800	4.629	1052.5	163.2	122.3	285.5
4900	18.954	1180.9	60.2	349.0	409.2	4900	4.632	1066.9	165.4	124.2	289.6
5000	18.956	1196.5	61.0	353.6	414.6	5000	4.636	1081.1	167.6	126.0	293.6

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

SO_2						S_2					
$M = 64.07$, $\sigma = 4.112$, $\epsilon/k = 335.4$						$M = 64.13$, $\sigma = 4.519$, $\epsilon/k = 847$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	4.032	45.3	5.3	2.8	8.1	100	3.504	----	---	---	---
200	4.375	86.3	10.0	6.6	16.7	200	3.656	48.9	5.7	2.3	8.0
300	4.803	130.3	15.2	12.3	27.4	300	3.909	69.3	8.1	4.0	12.1
400	5.229	173.5	20.2	19.4	39.6	400	4.098	90.3	10.5	5.9	16.4
500	5.600	214.7	25.0	27.3	52.2	500	4.221	112.4	13.1	7.9	21.0
600	5.897	253.2	29.5	35.2	64.7	600	4.302	135.2	15.7	10.0	25.7
700	6.127	289.2	33.6	42.9	76.6	700	4.357	158.2	18.4	12.0	30.4
800	6.304	322.9	37.6	50.3	87.9	800	4.396	181.2	21.1	14.1	35.1
900	6.441	354.9	41.3	57.3	98.5	900	4.424	203.8	23.7	16.0	39.7
1000	6.550	385.2	44.8	63.9	108.7	1000	4.447	226.1	26.3	18.0	44.3
1100	6.636	414.2	48.2	70.1	118.3	1100	4.464	248.1	28.8	19.9	48.8
1200	6.707	442.0	51.4	76.1	127.5	1200	4.478	269.5	31.3	21.8	53.1
1300	6.765	468.7	54.5	81.8	136.4	1300	4.490	290.4	33.7	23.6	57.4
1400	6.814	494.5	57.5	87.3	144.9	1400	4.500	310.7	36.1	25.4	61.5
1500	6.855	519.4	60.4	92.6	153.0	1500	4.509	330.4	38.4	27.2	65.5
1600	6.891	543.5	63.2	97.7	160.9	1600	4.517	349.6	40.6	28.8	69.5
1700	6.922	566.9	65.9	102.6	168.6	1700	4.524	368.3	42.8	30.5	73.3
1800	6.950	589.7	68.6	107.4	176.0	1800	4.531	386.5	44.9	32.1	77.0
1900	6.975	611.9	71.2	112.1	183.3	1900	4.537	404.3	47.0	33.7	80.7
2000	6.997	633.7	73.7	116.7	190.4	2000	4.542	421.6	49.0	35.2	84.2
2100	7.017	655.1	76.2	121.2	197.4	2100	4.547	438.6	51.0	36.7	87.7
2200	7.036	676.1	78.6	125.6	204.2	2200	4.552	455.2	52.9	38.2	91.1
2300	7.053	696.7	81.0	129.9	210.9	2300	4.557	471.5	54.8	39.7	94.5
2400	7.069	716.9	83.4	134.1	217.5	2400	4.562	487.5	56.6	41.1	97.8
2500	7.084	736.8	85.7	138.3	224.0	2500	4.566	503.2	58.5	42.5	101.0
2600	7.099	756.3	88.0	142.4	230.4	2600	4.571	518.5	60.3	43.9	104.2
2700	7.112	775.5	90.2	146.4	236.6	2700	4.575	533.7	62.0	45.3	107.3
2800	7.125	794.4	92.4	150.4	242.8	2800	4.579	548.5	63.7	46.6	110.4
2900	7.137	813.0	94.6	154.4	248.9	2900	4.583	563.1	65.4	48.0	113.4
3000	7.149	831.3	96.7	158.2	254.9	3000	4.587	577.5	67.1	49.3	116.4
3100	7.160	849.3	98.8	162.1	260.8	3100	4.591	591.7	68.8	50.6	119.3
3200	7.171	867.1	100.9	165.8	266.7	3200	4.594	605.6	70.4	51.9	122.3
3300	7.182	884.6	102.9	169.6	272.4	3300	4.598	619.3	72.0	53.1	125.1
3400	7.192	901.8	104.9	173.3	278.1	3400	4.602	632.8	73.5	54.4	127.9
3500	7.202	918.9	106.9	176.9	283.8	3500	4.605	646.3	75.1	55.7	130.8
3600	7.212	935.7	108.8	180.5	289.4	3600	4.609	659.5	76.6	56.9	133.5
3700	7.222	952.3	110.8	184.1	294.9	3700	4.613	672.5	78.1	58.1	136.3
3800	7.231	968.8	112.7	187.7	300.3	3800	4.616	685.3	79.6	59.3	139.0
3900	7.240	985.0	114.6	191.2	305.8	3900	4.620	697.9	81.1	60.5	141.6
4000	7.250	1001.1	116.4	194.7	311.1	4000	4.623	710.4	82.6	61.7	144.3
4100	7.259	1017.1	118.3	198.2	316.5	4100	4.627	722.8	84.0	62.9	146.9
4200	7.267	1032.9	120.1	201.6	321.8	4200	4.630	735.0	85.4	64.0	149.4
4300	7.276	1048.6	122.0	205.1	327.0	4300	4.634	747.0	86.8	65.2	152.0
4400	7.285	1064.2	123.8	208.5	332.3	4400	4.637	759.0	88.2	66.4	154.6
4500	7.293	1079.8	125.6	211.9	337.5	4500	4.641	770.8	89.6	67.5	157.1
4600	7.302	1095.2	127.4	215.3	342.7	4600	4.644	782.6	90.9	68.6	159.6
4700	7.310	1110.6	129.2	218.7	347.9	4700	4.647	794.2	92.3	69.8	162.1
4800	7.319	1125.9	131.0	222.1	353.1	4800	4.651	805.8	93.6	70.9	164.5
4900	7.327	1141.2	132.7	225.5	358.3	4900	4.654	817.2	95.0	72.0	167.0
5000	7.335	1156.4	134.5	228.9	363.4	5000	4.658	828.5	96.3	73.1	169.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Si						SiCl					
$M = 28.09$, $\sigma = 2.910$, $\epsilon/k = 3036$						$M = 63.55$, $\sigma = 3.748$, $\epsilon/k = 980$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.371	-----	----	---	----	100	3.529	----	---	---	----
200	2.862	-----	----	---	----	200	3.839	67.5	7.9	3.7	11.7
300	2.674	-----	----	---	----	300	4.108	95.0	11.1	6.3	17.5
400	2.600	-----	----	---	----	400	4.260	122.7	14.4	8.9	23.3
500	2.564	-----	----	---	----	500	4.348	151.5	17.8	11.6	29.3
600	2.544	127.8	33.9	0.5	34.4	600	4.402	181.5	21.3	14.3	35.5
700	2.533	144.9	38.4	0.4	38.9	700	4.438	212.3	24.9	17.0	41.9
800	2.526	162.2	43.0	0.4	43.4	800	4.464	243.2	28.5	19.7	48.2
900	2.522	179.4	47.6	0.4	48.0	900	4.484	274.2	32.1	22.4	54.6
1000	2.522	196.6	52.2	0.4	52.6	1000	4.499	304.8	35.7	25.2	60.9
1100	2.524	213.8	56.7	0.5	57.2	1100	4.512	334.9	39.3	27.8	67.1
1200	2.530	231.2	61.3	0.6	62.0	1200	4.523	364.8	42.8	30.5	73.2
1300	2.538	248.9	66.0	0.9	66.9	1300	4.532	394.1	46.2	33.1	79.3
1400	2.548	266.8	70.8	1.2	72.0	1400	4.541	422.8	49.6	35.6	85.2
1500	2.560	285.1	75.6	1.6	77.2	1500	4.549	450.9	52.9	38.1	91.0
1600	2.573	303.6	80.5	2.1	82.6	1600	4.556	478.2	56.1	40.6	96.7
1700	2.587	322.3	85.5	2.6	88.1	1700	4.563	505.0	59.2	43.0	102.2
1800	2.602	341.2	90.5	3.3	93.8	1800	4.570	531.0	62.3	45.4	107.6
1900	2.618	360.3	95.6	4.0	99.5	1900	4.576	556.5	65.3	47.7	112.9
2000	2.633	379.5	100.7	4.7	105.4	2000	4.582	581.4	68.2	50.0	118.1
2100	2.647	398.8	105.8	5.5	111.3	2100	4.588	605.8	71.0	52.2	123.2
2200	2.662	418.2	110.9	6.3	117.2	2200	4.593	629.7	73.8	54.4	128.2
2300	2.675	437.6	116.1	7.2	123.2	2300	4.599	653.1	76.6	56.6	133.2
2400	2.688	457.0	121.2	8.0	129.2	2400	4.604	676.0	79.3	58.7	138.0
2500	2.699	476.4	126.4	8.9	135.3	2500	4.610	698.5	81.9	60.8	142.7
2600	2.710	495.8	131.5	9.7	141.3	2600	4.615	720.6	84.5	62.9	147.4
2700	2.720	515.1	136.7	10.6	147.3	2700	4.620	742.4	87.1	65.0	152.0
2800	2.729	534.5	141.8	11.4	153.2	2800	4.625	763.8	89.6	67.0	156.6
2900	2.737	553.8	146.9	12.3	159.2	2900	4.631	784.8	92.0	69.0	161.0
3000	2.745	573.1	152.0	13.1	165.1	3000	4.636	805.5	94.5	71.0	165.5
3100	2.751	592.1	157.1	13.9	171.0	3100	4.641	825.9	96.8	73.0	169.8
3200	2.756	611.0	162.1	14.6	176.7	3200	4.646	846.0	99.2	74.9	174.1
3300	2.761	629.9	167.1	15.4	182.5	3300	4.651	865.8	101.5	76.9	178.4
3400	2.765	648.7	172.1	16.1	188.2	3400	4.656	885.3	103.8	78.8	182.6
3500	2.769	667.5	177.1	16.8	193.9	3500	4.661	904.5	106.1	80.7	186.7
3600	2.772	686.2	182.1	17.4	199.5	3600	4.665	923.5	108.3	82.5	190.8
3700	2.774	704.8	187.0	18.0	205.0	3700	4.670	942.2	110.5	84.4	194.9
3800	2.776	723.3	191.9	18.6	210.6	3800	4.675	960.7	112.7	86.3	198.9
3900	2.778	741.8	196.8	19.2	216.0	3900	4.680	978.9	114.8	88.1	202.9
4000	2.779	760.0	201.6	19.8	221.4	4000	4.685	997.1	116.9	89.9	206.9
4100	2.779	778.2	206.5	20.3	226.8	4100	4.690	1015.0	119.0	91.7	210.8
4200	2.780	796.2	211.2	20.8	232.0	4200	4.695	1032.7	121.1	93.5	214.6
4300	2.780	814.1	216.0	21.3	237.3	4300	4.700	1050.1	123.1	95.3	218.5
4400	2.780	831.9	220.7	21.7	242.4	4400	4.704	1067.3	125.2	97.1	222.3
4500	2.780	849.5	225.4	22.2	247.6	4500	4.709	1084.3	127.2	98.9	226.0
4600	2.779	867.0	230.0	22.6	252.6	4600	4.714	1101.1	129.1	100.6	229.8
4700	2.779	884.4	234.6	23.0	257.7	4700	4.719	1117.8	131.1	102.4	233.5
4800	2.778	901.6	239.2	23.4	262.6	4800	4.724	1134.3	133.0	104.1	237.1
4900	2.778	918.7	243.7	23.8	267.6	4900	4.728	1150.7	134.9	105.8	240.8
5000	2.777	935.7	248.2	24.2	272.5	5000	4.733	1166.9	136.8	107.6	244.4

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$SiCl_4$						SiF					
$M = 169.92$, $\sigma = 5.977$, $\epsilon/k = 390.2$						$M = 47.09$, $\sigma = 3.318$, $\epsilon/k = 585$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	6.894	33.1	1.5	2.2	3.7	100	3.502	----	----	---	----
200	9.497	61.7	2.7	6.7	9.4	200	3.586	88.8	14.1	5.4	19.4
300	10.917	92.8	4.1	12.1	16.1	300	3.800	129.2	20.4	9.4	29.8
400	11.674	124.2	5.4	17.6	23.0	400	3.997	172.3	27.3	14.4	41.6
500	12.097	154.7	6.8	22.9	29.7	500	4.139	216.3	34.2	19.8	54.0
600	12.350	183.7	8.1	27.9	36.0	600	4.238	260.0	41.1	25.2	66.3
700	12.512	211.0	9.3	32.6	41.9	700	4.308	302.7	47.9	30.5	78.4
800	12.621	236.8	10.4	37.0	47.4	800	4.359	344.3	54.5	35.6	90.1
900	12.697	261.2	11.5	41.1	52.6	900	4.397	384.4	60.8	40.6	101.5
1000	12.753	284.4	12.5	45.0	57.5	1000	4.426	423.0	66.9	45.4	112.3
1100	12.795	306.7	13.4	48.7	62.2	1100	4.450	460.0	72.8	50.0	122.7
1200	12.827	328.0	14.4	52.3	66.7	1200	4.469	495.6	78.4	54.3	132.8
1300	12.852	348.5	15.3	55.7	71.0	1300	4.485	529.9	83.9	58.6	142.5
1400	12.872	368.2	16.1	59.0	75.1	1400	4.499	563.1	89.1	62.7	151.8
1500	12.888	387.3	17.0	62.1	79.1	1500	4.511	595.2	94.2	66.7	160.9
1600	12.902	405.9	17.8	65.2	83.0	1600	4.522	626.4	99.1	70.5	169.7
1700	12.913	423.9	18.6	68.1	86.7	1700	4.531	656.7	103.9	74.3	178.2
1800	12.922	441.4	19.4	71.0	90.4	1800	4.540	686.2	108.6	78.0	186.6
1900	12.930	458.3	20.1	73.8	93.9	1900	4.548	715.0	113.2	81.6	194.7
2000	12.937	474.9	20.8	76.5	97.4	2000	4.556	743.1	117.6	85.1	202.7
2100	12.943	491.2	21.5	79.2	100.7	2100	4.563	770.5	121.9	88.6	210.5
2200	12.948	507.1	22.2	81.8	104.0	2200	4.570	797.3	126.2	91.9	218.1
2300	12.952	522.7	22.9	84.3	107.3	2300	4.576	823.5	130.3	95.3	225.6
2400	12.956	538.1	23.6	86.9	110.5	2400	4.583	849.3	134.4	98.5	232.9
2500	12.959	553.2	24.3	89.3	113.6	2500	4.589	874.6	138.4	101.8	240.2
2600	12.963	568.1	24.9	91.8	116.7	2600	4.595	899.3	142.3	104.9	247.2
2700	12.965	582.7	25.6	94.1	119.7	2700	4.600	923.5	146.1	108.0	254.2
2800	12.968	597.2	26.2	96.5	122.7	2800	4.606	947.3	149.9	111.1	261.0
2900	12.970	611.4	26.8	98.8	125.6	2900	4.611	970.7	153.6	114.2	267.8
3000	12.972	625.3	27.4	101.1	128.5	3000	4.617	993.7	157.3	117.2	274.4
3100	12.974	639.1	28.0	103.3	131.4	3100	4.622	1016.5	160.9	120.1	281.0
3200	12.975	652.7	28.6	105.6	134.2	3200	4.627	1038.9	164.4	123.1	287.5
3300	12.977	666.1	29.2	107.7	137.0	3300	4.632	1061.0	167.9	126.0	293.9
3400	12.978	679.4	29.8	109.9	139.7	3400	4.637	1082.9	171.4	128.9	300.3
3500	12.979	692.4	30.4	112.0	142.4	3500	4.642	1104.5	174.8	131.8	306.6
3600	12.980	705.3	30.9	114.1	145.0	3600	4.647	1125.9	178.2	134.7	312.8
3700	12.981	718.0	31.5	116.2	147.7	3700	4.652	1147.1	181.5	137.5	319.0
3800	12.982	730.5	32.0	118.2	150.3	3800	4.657	1168.0	184.8	140.3	325.2
3900	12.983	742.9	32.6	120.2	152.8	3900	4.661	1188.7	188.1	143.1	331.2
4000	12.984	755.2	33.1	122.2	155.4	4000	4.666	1209.1	191.4	145.9	337.3
4100	12.985	767.3	33.7	124.2	157.9	4100	4.671	1229.4	194.6	148.7	343.2
4200	12.986	779.3	34.2	126.2	160.3	4200	4.676	1249.5	197.7	151.4	349.2
4300	12.986	791.2	34.7	128.1	162.8	4300	4.680	1269.3	200.9	154.2	355.0
4400	12.987	803.0	35.2	130.0	165.2	4400	4.685	1289.0	204.0	156.9	360.9
4500	12.987	814.6	35.7	131.9	167.6	4500	4.690	1308.5	207.1	159.6	366.7
4600	12.988	826.2	36.2	133.8	170.0	4600	4.694	1327.7	210.1	162.3	372.4
4700	12.988	837.6	36.7	135.6	172.4	4700	4.699	1346.8	213.1	165.0	378.1
4800	12.989	849.0	37.2	137.5	174.7	4800	4.703	1365.7	216.1	167.6	383.8
4900	12.989	860.3	37.7	139.3	177.0	4900	4.708	1384.5	219.1	170.3	389.4
5000	12.990	871.5	38.2	141.1	179.4	5000	4.713	1403.1	222.0	172.9	395.0

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$SiFCl_3$						SiF_3Cl					
$M = 153.46$, $\sigma = 5.540$, $\epsilon/k = 329$						$M = 120.55$, $\sigma = 4.975$, $\epsilon/k = 231$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	6.533	38.9	1.9	2.7	4.6	100	5.593	49.2	3.0	3.3	6.3
200	9.448	74.3	3.6	8.8	12.4	200	7.979	98.0	6.1	11.7	17.7
300	10.836	112.2	5.4	16.0	21.4	300	9.570	146.6	9.1	22.5	31.6
400	11.576	149.3	7.2	23.2	30.4	400	10.615	191.3	11.8	33.8	45.6
500	12.006	184.6	9.0	30.0	39.0	500	11.288	231.9	14.3	44.3	58.7
600	12.273	217.5	10.6	36.3	46.9	600	11.727	268.9	16.6	54.0	70.6
700	12.448	248.2	12.1	42.2	54.3	700	12.024	303.3	18.8	62.9	81.6
800	12.567	277.0	13.5	47.7	61.1	800	12.230	335.5	20.7	71.0	91.8
900	12.653	304.2	14.8	52.8	67.6	900	12.380	365.9	22.6	78.7	101.3
1000	12.716	330.1	16.0	57.6	73.7	1000	12.490	394.7	24.4	85.8	110.2
1100	12.763	354.9	17.2	62.3	79.5	1100	12.574	422.1	26.1	92.5	118.6
1200	12.799	378.6	18.4	66.7	85.0	1200	12.639	448.4	27.7	98.9	126.6
1300	12.828	401.3	19.5	70.9	90.3	1300	12.690	473.7	29.3	105.0	134.3
1400	12.851	423.4	20.6	74.9	95.5	1400	12.731	498.3	30.8	110.9	141.8
1500	12.870	444.6	21.6	78.8	100.4	1500	12.765	522.2	32.3	116.6	148.9
1600	12.885	465.1	22.6	82.6	105.2	1600	12.793	545.5	33.7	122.2	155.9
1700	12.898	485.1	23.6	86.2	109.8	1700	12.816	568.1	35.1	127.5	162.6
1800	12.909	504.6	24.5	89.8	114.3	1800	12.835	590.2	36.5	132.7	169.2
1900	12.918	523.6	25.4	93.2	118.7	1900	12.852	611.8	37.8	137.8	175.6
2000	12.926	542.2	26.3	96.6	123.0	2000	12.866	632.8	39.1	142.7	181.9
2100	12.933	560.5	27.2	100.0	127.2	2100	12.878	653.4	40.4	147.6	188.0
2200	12.939	578.4	28.1	103.2	131.3	2200	12.889	673.5	41.6	152.3	193.9
2300	12.944	596.0	28.9	106.4	135.3	2300	12.898	693.2	42.9	156.9	199.7
2400	12.948	613.3	29.8	109.5	139.3	2400	12.907	712.6	44.0	161.4	205.4
2500	12.952	630.2	30.6	112.6	143.2	2500	12.914	731.5	45.2	165.8	211.0
2600	12.956	646.9	31.4	115.6	147.0	2600	12.920	750.2	46.4	170.1	216.5
2700	12.959	663.3	32.2	118.6	150.8	2700	12.926	768.6	47.5	174.4	221.9
2800	12.962	679.4	33.0	121.5	154.5	2800	12.931	786.7	48.6	178.6	227.2
2900	12.965	695.3	33.8	124.4	158.1	2900	12.936	804.6	49.7	182.7	232.4
3000	12.967	710.9	34.5	127.2	161.7	3000	12.940	822.3	50.8	186.8	237.6
3100	12.969	726.3	35.3	130.0	165.2	3100	12.944	839.8	51.9	190.9	242.8
3200	12.971	741.4	36.0	132.7	168.7	3200	12.947	857.3	53.0	194.9	247.9
3300	12.973	756.4	36.7	135.4	172.1	3300	12.950	874.6	54.1	198.9	252.9
3400	12.974	771.1	37.4	138.1	175.5	3400	12.953	891.8	55.1	202.9	258.0
3500	12.976	785.6	38.2	140.7	178.8	3500	12.956	909.0	56.2	206.8	263.0
3600	12.977	800.0	38.8	143.3	182.1	3600	12.958	926.2	57.3	210.8	268.0
3700	12.978	814.2	39.5	145.8	185.4	3700	12.960	943.4	58.3	214.7	273.1
3800	12.979	828.2	40.2	148.4	188.6	3800	12.962	960.0	59.3	218.6	277.9
3900	12.980	842.1	40.9	150.9	191.8	3900	12.964	976.5	60.4	222.4	282.7
4000	12.981	855.9	41.6	153.3	194.9	4000	12.966	992.8	61.4	226.1	287.5
4100	12.982	869.6	42.2	155.8	198.0	4100	12.968	1008.9	62.4	229.8	292.2
4200	12.983	883.1	42.9	158.2	201.1	4200	12.969	1024.9	63.4	233.5	296.9
4300	12.984	896.6	43.5	160.7	204.2	4300	12.971	1040.8	64.3	237.1	301.5
4400	12.985	909.9	44.2	163.1	207.3	4400	12.972	1056.5	65.3	240.7	306.1
4500	12.985	923.2	44.8	165.5	210.3	4500	12.973	1072.1	66.3	244.3	310.6
4600	12.986	936.5	45.5	167.9	213.3	4600	12.974	1087.5	67.2	247.9	315.1
4700	12.986	949.7	46.1	170.2	216.3	4700	12.975	1102.9	68.2	251.4	319.6
4800	12.987	962.8	46.8	172.6	219.3	4800	12.976	1118.1	69.1	254.9	324.0
4900	12.988	975.9	47.4	175.0	222.3	4900	12.977	1133.2	70.1	258.3	328.4
5000	12.988	989.0	48.0	177.3	225.3	5000	12.978	1148.1	71.0	261.8	332.8

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

SiF_4						SiH_4					
$M=104.09$, $\sigma=4.880$, $\epsilon/k=171.9$						$M=32.12$, $\sigma=4.084$, $\epsilon/k=207.6$					
T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$	T, °K	C_p/R	$\eta\times10^6$	$\lambda'\times10^6$	$\lambda''\times10^6$	$\lambda\times10^6$
100	5.003	54.5	3.9	3.4	7.3	100	4.001	39.5	9.2	4.8	14.0
200	7.298	109.7	7.9	13.3	21.1	200	4.272	79.3	18.4	11.5	29.9
300	8.864	160.5	11.5	25.7	37.2	300	5.170	117.8	27.3	25.7	53.0
400	9.989	205.0	14.7	38.7	53.4	400	6.191	152.6	35.4	46.0	81.4
500	10.772	244.9	17.5	51.0	68.6	500	7.115	183.8	42.6	69.3	111.9
600	11.310	281.2	20.1	62.4	82.6	600	7.926	212.4	49.3	94.1	143.4
700	11.687	314.7	22.5	72.9	95.4	700	8.629	238.8	55.4	119.5	175.0
800	11.955	346.1	24.8	82.5	107.2	800	9.231	263.6	61.1	144.9	206.0
900	12.152	375.6	26.9	91.4	118.2	900	9.740	286.9	66.6	169.7	236.2
1000	12.300	403.7	28.9	99.7	128.6	1000	10.169	309.0	71.7	193.5	265.2
1100	12.413	430.8	30.8	107.6	138.4	1100	10.529	330.1	76.6	216.4	293.0
1200	12.501	456.8	32.7	115.1	147.8	1200	10.832	350.4	81.3	238.4	319.7
1300	12.571	482.0	34.5	122.3	156.8	1300	11.087	370.0	85.8	259.5	345.3
1400	12.627	506.3	36.3	129.2	165.5	1400	11.302	389.0	90.3	279.7	369.9
1500	12.673	529.9	37.9	135.9	173.8	1500	11.486	407.5	94.5	299.0	393.6
1600	12.712	552.8	39.6	142.3	181.8	1600	11.643	425.5	98.7	317.7	416.4
1700	12.744	575.0	41.2	148.4	189.6	1700	11.778	442.9	102.8	335.6	438.4
1800	12.770	596.6	42.7	154.4	197.1	1800	11.894	460.0	106.7	352.9	459.6
1900	12.793	617.8	44.2	160.3	204.5	1900	11.996	476.5	110.6	369.6	480.1
2000	12.813	638.4	45.7	165.9	211.6	2000	12.084	492.7	114.3	385.7	500.0
2100	12.830	658.7	47.2	171.5	218.6	2100	12.162	508.6	118.0	401.3	519.3
2200	12.845	678.6	48.6	176.9	225.5	2200	12.230	524.1	121.6	416.5	538.0
2300	12.858	698.3	50.0	182.3	232.3	2300	12.291	539.3	125.1	431.2	556.3
2400	12.869	717.8	51.4	187.6	239.0	2400	12.345	554.2	128.6	445.6	574.2
2500	12.879	737.2	52.8	192.8	245.6	2500	12.393	568.9	132.0	459.6	591.6
2600	12.888	756.4	54.2	198.0	252.2	2600	12.436	583.4	135.3	473.4	608.7
2700	12.896	775.7	55.5	203.2	258.8	2700	12.475	597.7	138.7	486.9	625.5
2800	12.904	794.6	56.9	208.3	265.2	2800	12.510	611.8	142.0	500.2	642.1
2900	12.910	813.1	58.2	213.3	271.5	2900	12.541	625.9	145.2	513.3	658.5
3000	12.916	831.3	59.5	218.2	277.7	3000	12.570	639.8	148.5	526.2	674.7
3100	12.921	849.3	60.8	223.1	283.9	3100	12.596	653.8	151.7	539.1	690.7
3200	12.926	867.1	62.1	227.8	289.9	3200	12.620	667.7	154.9	551.8	706.7
3300	12.930	884.7	63.3	232.5	295.9	3300	12.642	681.5	158.1	564.5	722.6
3400	12.934	902.0	64.6	237.2	301.8	3400	12.662	695.1	161.3	576.9	738.1
3500	12.938	919.2	65.8	241.8	307.6	3500	12.680	708.4	164.4	589.0	753.3
3600	12.941	936.2	67.0	246.4	313.4	3600	12.697	721.6	167.4	600.9	768.4
3700	12.945	953.0	68.2	250.9	319.1	3700	12.713	734.6	170.4	612.7	783.2
3800	12.947	969.7	69.4	255.3	324.7	3800	12.727	747.5	173.4	624.4	797.8
3900	12.950	986.2	70.6	259.7	330.3	3900	12.741	760.3	176.4	635.9	812.3
4000	12.952	1002.5	71.8	264.1	335.8	4000	12.753	773.0	179.3	647.2	826.6
4100	12.955	1018.7	72.9	268.4	341.3	4100	12.765	785.5	182.2	658.5	840.7
4200	12.957	1034.7	74.1	272.7	346.8	4200	12.776	797.9	185.1	669.6	854.7
4300	12.959	1050.6	75.2	276.9	352.1	4300	12.786	810.2	188.0	680.6	868.6
4400	12.961	1066.4	76.3	281.1	357.5	4400	12.795	822.4	190.8	691.5	882.3
4500	12.962	1082.0	77.5	285.3	362.8	4500	12.804	834.5	193.6	702.2	895.9
4600	12.964	1097.5	78.6	289.4	368.0	4600	12.812	846.5	196.4	712.9	909.3
4700	12.966	1112.9	79.7	293.5	373.2	4700	12.820	858.4	199.2	723.5	922.6
4800	12.967	1128.1	80.8	297.6	378.3	4800	12.827	870.2	201.9	733.9	935.8
4900	12.968	1143.3	81.9	301.6	383.5	4900	12.834	881.9	204.6	744.3	948.9
5000	12.970	1158.3	82.9	305.6	388.5	5000	12.841	893.5	207.3	754.6	961.9

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

SiO						SiO_2					
$M = 44.09$, $\sigma = 3.374$, $\epsilon/k = 569$						$M = 60.09$, $\sigma = 3.706$, $\epsilon/k = 2954$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.501	----	----	---	----	100	3.760	-----	----	----	----
200	3.512	84.0	14.2	5.1	19.3	200	4.695	-----	----	----	----
300	3.598	122.5	20.7	8.0	28.7	300	5.375	-----	----	----	----
400	3.745	163.6	27.6	12.1	39.8	400	5.885	-----	----	----	----
500	3.893	205.3	34.7	17.0	51.7	500	6.263	-----	----	----	----
600	4.017	246.6	41.7	22.3	63.9	600	6.538	116.2	14.4	20.5	34.9
700	4.115	287.0	48.5	27.6	76.1	700	6.739	131.9	16.4	24.4	40.8
800	4.191	326.2	55.1	32.8	88.0	800	6.886	147.7	18.3	28.3	46.6
900	4.250	363.9	61.5	37.9	99.4	900	6.997	163.4	20.3	32.1	52.4
1000	4.297	400.1	67.6	42.8	110.4	1000	7.081	179.1	22.2	35.8	58.0
1100	4.334	434.8	73.5	47.4	120.9	1100	7.147	194.9	24.2	39.5	63.7
1200	4.364	468.2	79.1	51.9	131.0	1200	7.199	210.9	26.2	43.3	69.4
1300	4.388	500.3	84.6	56.2	140.8	1300	7.240	227.1	28.2	47.0	75.2
1400	4.409	531.4	89.8	60.4	150.2	1400	7.273	243.6	30.2	50.8	81.0
1500	4.426	561.6	94.9	64.4	159.3	1500	7.301	260.4	32.3	54.6	86.9
1600	4.441	590.8	99.9	68.2	168.1	1600	7.324	277.4	34.4	58.4	92.8
1700	4.454	619.2	104.7	72.0	176.7	1700	7.343	294.6	36.5	62.3	98.8
1800	4.466	646.8	109.3	75.6	185.0	1800	7.359	312.0	38.7	66.2	104.9
1900	4.476	673.8	113.9	79.2	193.1	1900	7.373	329.5	40.9	70.1	111.0
2000	4.485	700.1	118.3	82.7	201.0	2000	7.385	347.1	43.0	74.0	117.1
2100	4.493	725.8	122.7	86.1	208.7	2100	7.396	364.8	45.2	78.0	123.2
2200	4.500	750.8	126.9	89.4	216.3	2200	7.405	382.5	47.4	81.9	129.3
2300	4.507	775.4	131.1	92.6	223.7	2300	7.413	400.2	49.6	85.8	135.5
2400	4.513	799.6	135.1	95.8	230.9	2400	7.420	418.0	51.8	89.8	141.6
2500	4.519	823.2	139.1	98.9	238.0	2500	7.426	435.7	54.0	93.7	147.7
2600	4.525	846.3	143.0	101.9	245.0	2600	7.431	453.4	56.2	97.6	153.8
2700	4.530	869.0	146.9	104.9	251.8	2700	7.436	471.1	58.4	101.5	160.0
2800	4.535	891.3	150.6	107.9	258.5	2800	7.441	488.8	60.6	105.4	166.0
2900	4.539	913.2	154.4	110.8	265.2	2900	7.445	506.5	62.8	109.3	172.1
3000	4.544	934.8	158.0	113.7	271.7	3000	7.448	523.9	65.0	113.2	178.1
3100	4.548	956.1	161.6	116.5	278.1	3100	7.451	541.2	67.1	117.0	184.1
3200	4.552	977.2	165.2	119.3	284.5	3200	7.454	558.4	69.3	120.8	190.0
3300	4.556	998.0	168.7	122.1	290.8	3300	7.457	575.7	71.4	124.6	196.0
3400	4.560	1018.5	172.1	124.8	297.0	3400	7.459	592.8	73.5	128.3	201.9
3500	4.564	1038.8	175.6	127.5	303.1	3500	7.462	609.9	75.6	132.1	207.8
3600	4.567	1058.8	179.0	130.2	309.2	3600	7.464	627.0	77.8	135.9	213.6
3700	4.571	1078.7	182.3	132.9	315.2	3700	7.466	643.9	79.9	139.6	219.4
3800	4.574	1098.3	185.6	135.5	321.2	3800	7.467	660.7	81.9	143.3	225.2
3900	4.577	1117.7	188.9	138.1	327.1	3900	7.469	677.4	84.0	146.9	231.0
4000	4.581	1136.9	192.2	140.7	332.9	4000	7.471	694.0	86.1	150.6	236.7
4100	4.584	1155.9	195.4	143.3	338.7	4100	7.472	710.5	88.1	154.2	242.3
4200	4.587	1174.7	198.6	145.9	344.4	4200	7.473	726.8	90.1	157.8	247.9
4300	4.590	1193.4	201.7	148.4	350.1	4300	7.475	743.0	92.2	161.4	253.5
4400	4.593	1211.8	204.8	150.9	355.7	4400	7.476	759.1	94.1	164.9	259.0
4500	4.596	1230.0	207.9	153.4	361.3	4500	7.477	775.1	96.1	168.4	264.5
4600	4.599	1248.1	211.0	155.9	366.8	4600	7.478	790.9	98.1	171.9	270.0
4700	4.602	1266.0	214.0	158.3	372.3	4700	7.479	806.7	100.0	175.3	275.4
4800	4.605	1283.7	217.0	160.8	377.8	4800	7.480	822.2	102.0	178.7	280.7
4900	4.608	1301.3	219.9	163.2	383.1	4900	7.480	837.7	103.9	182.1	286.0
5000	4.611	1318.7	222.9	165.6	388.5	5000	7.481	853.0	105.8	185.5	291.3

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

SiS						Si_2					
$M = 60.16$, $\sigma = 3.900$, $\epsilon/k = 1432$						$M = 56.18$, $\sigma = 3.280$, $\epsilon/k = 3036$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	3.503	----	---	---	----	100	3.539	-----	----	----	----
200	3.639	----	---	---	----	200	3.878	-----	----	----	----
300	3.886	74.9	9.3	4.5	13.8	300	4.141	-----	----	----	----
400	4.077	95.4	11.8	6.6	18.4	400	4.284	-----	----	----	----
500	4.204	115.8	14.3	8.6	22.9	500	4.365	-----	----	----	----
600	4.287	136.5	16.9	10.6	27.5	600	4.415	142.3	18.9	12.7	31.6
700	4.344	157.9	19.6	12.7	32.3	700	4.448	161.3	21.4	14.7	36.1
800	4.385	179.9	22.3	14.8	37.1	800	4.472	180.6	24.0	16.6	40.6
900	4.414	202.5	25.1	16.9	42.0	900	4.490	199.7	26.5	18.6	45.1
1000	4.437	225.3	27.9	19.0	46.9	1000	4.505	218.8	29.0	20.5	49.5
1100	4.455	248.3	30.8	21.2	51.9	1100	4.517	238.0	31.6	22.4	54.0
1200	4.469	271.4	33.6	23.3	56.9	1200	4.527	257.4	34.1	24.4	58.5
1300	4.481	294.3	36.5	25.4	61.9	1300	4.536	277.1	36.8	26.3	63.1
1400	4.492	317.3	39.3	27.6	66.9	1400	4.545	297.0	39.4	28.4	67.8
1500	4.500	339.8	42.1	29.6	71.7	1500	4.552	317.3	42.1	30.4	72.5
1600	4.508	362.2	44.9	31.7	76.6	1600	4.559	337.9	44.8	32.5	77.3
1700	4.515	384.4	47.6	33.8	81.4	1700	4.566	358.8	47.6	34.6	82.2
1800	4.521	406.4	50.3	35.8	86.2	1800	4.573	379.8	50.4	36.8	87.1
1900	4.527	428.2	53.0	37.8	90.9	1900	4.579	401.1	53.2	38.9	92.1
2000	4.532	449.6	55.7	39.8	95.5	2000	4.585	422.5	56.0	41.1	97.2
2100	4.537	470.7	58.3	41.8	100.1	2100	4.590	443.9	58.9	43.3	102.2
2200	4.542	491.4	60.9	43.8	104.6	2200	4.596	465.5	61.7	45.6	107.3
2300	4.547	511.8	63.4	45.7	109.1	2300	4.602	487.1	64.6	47.8	112.4
2400	4.551	531.9	65.9	47.6	113.5	2400	4.607	508.7	67.5	50.0	117.5
2500	4.555	551.6	68.3	49.4	117.8	2500	4.612	530.3	70.3	52.3	122.6
2600	4.559	571.0	70.7	51.3	122.0	2600	4.618	551.9	73.2	54.6	127.8
2700	4.563	590.1	73.1	53.1	126.2	2700	4.623	573.4	76.1	56.8	132.9
2800	4.567	608.9	75.4	54.9	130.3	2800	4.628	595.0	78.9	59.1	138.0
2900	4.570	627.5	77.7	56.6	134.4	2900	4.633	616.5	81.8	61.4	143.2
3000	4.574	645.7	80.0	58.4	138.4	3000	4.638	638.0	84.6	63.7	148.3
3100	4.577	663.7	82.2	60.1	142.3	3100	4.644	659.1	87.4	66.0	153.4
3200	4.581	681.4	84.4	61.8	146.2	3200	4.649	680.2	90.2	68.2	158.5
3300	4.584	698.9	86.6	63.5	150.1	3300	4.654	701.2	93.0	70.5	163.5
3400	4.587	716.1	88.7	65.2	153.9	3400	4.659	722.1	95.8	72.8	168.6
3500	4.591	733.1	90.8	66.8	157.6	3500	4.664	743.0	98.6	75.1	173.6
3600	4.594	749.9	92.9	68.5	161.4	3600	4.669	763.9	101.3	77.3	178.7
3700	4.597	766.5	95.0	70.1	165.0	3700	4.674	784.6	104.1	79.6	183.7
3800	4.600	782.9	97.0	71.7	168.7	3800	4.679	805.2	106.8	81.9	188.7
3900	4.603	799.1	99.0	73.3	172.3	3900	4.683	825.7	109.5	84.2	193.7
4000	4.607	815.1	101.0	74.9	175.8	4000	4.688	846.0	112.2	86.4	198.7
4100	4.610	831.0	102.9	76.4	179.4	4100	4.693	866.3	114.9	88.7	203.6
4200	4.613	846.6	104.9	78.0	182.9	4200	4.698	886.3	117.6	91.0	208.5
4300	4.616	862.1	106.8	79.5	186.3	4300	4.703	906.3	120.2	93.2	213.4
4400	4.619	877.4	108.7	81.1	189.8	4400	4.708	926.0	122.8	95.5	218.3
4500	4.622	892.6	110.6	82.6	193.2	4500	4.713	945.7	125.4	97.7	223.1
4600	4.625	907.6	112.4	84.1	196.5	4600	4.718	965.1	128.0	99.9	228.0
4700	4.628	922.5	114.3	85.6	199.9	4700	4.723	984.5	130.6	102.2	232.8
4800	4.631	937.2	116.1	87.1	203.2	4800	4.727	1003.6	133.1	104.4	237.5
4900	4.634	951.8	117.9	88.6	206.5	4900	4.732	1022.7	135.7	106.6	242.2
5000	4.637	966.2	119.7	90.0	209.7	5000	4.737	1041.5	138.2	108.8	247.0

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TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

$SnBr_4$						$SnCl_4$					
$M = 438.36$, $\sigma = 6.388$, $\epsilon/k = 563.7$						$M = 260.53$, $\sigma = 6.202$, $\epsilon/k = 420$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	9.860	----	---	---	---	100	8.338	37.1	1.1	2.2	3.2
200	11.849	74.1	1.3	4.1	5.4	200	10.821	68.6	2.0	5.7	7.7
300	12.442	108.3	1.8	6.4	8.3	300	11.854	102.8	2.9	9.7	12.6
400	12.676	144.6	2.5	8.8	11.3	400	12.312	137.7	3.9	13.6	17.5
500	12.790	181.5	3.1	11.2	14.3	500	12.546	171.8	4.9	17.4	22.3
600	12.853	217.9	3.7	13.5	17.2	600	12.679	204.7	5.9	21.0	26.8
700	12.891	253.6	4.3	15.8	20.1	700	12.762	235.9	6.7	24.4	31.1
800	12.916	288.1	4.9	18.0	22.9	800	12.816	265.3	7.6	27.6	35.1
900	12.934	321.3	5.5	20.1	25.5	900	12.854	293.3	8.4	30.6	39.0
1000	12.946	353.2	6.0	22.1	28.1	1000	12.882	319.9	9.1	33.4	42.6
1100	12.956	383.7	6.5	24.0	30.5	1100	12.902	345.3	9.9	36.2	46.0
1200	12.963	413.1	7.0	25.9	32.9	1200	12.917	369.7	10.6	38.8	49.4
1300	12.968	441.4	7.5	27.7	35.2	1300	12.929	393.2	11.2	41.3	52.5
1400	12.973	468.8	8.0	29.4	37.3	1400	12.939	415.9	11.9	43.7	55.6
1500	12.976	495.3	8.4	31.1	39.5	1500	12.947	437.9	12.5	46.1	58.6
1600	12.979	521.0	8.9	32.7	41.5	1600	12.953	459.1	13.1	48.3	61.5
1700	12.981	546.0	9.3	34.2	43.5	1700	12.959	479.8	13.7	50.5	64.2
1800	12.983	570.4	9.7	35.8	45.5	1800	12.963	499.9	14.3	52.7	67.0
1900	12.985	594.1	10.1	37.3	47.4	1900	12.967	519.4	14.9	54.7	69.6
2000	12.987	617.2	10.5	38.7	49.2	2000	12.970	538.4	15.4	56.8	72.2
2100	12.988	639.8	10.9	40.2	51.0	2100	12.973	557.0	15.9	58.7	74.7
2200	12.989	661.8	11.3	41.5	52.8	2200	12.975	575.2	16.5	60.7	77.1
2300	12.990	683.5	11.6	42.9	54.5	2300	12.977	593.1	17.0	62.6	79.5
2400	12.991	704.8	12.0	44.2	56.2	2400	12.979	610.6	17.5	64.4	81.9
2500	12.991	725.5	12.3	45.5	57.9	2500	12.981	627.9	18.0	66.3	84.2
2600	12.992	745.9	12.7	46.8	59.5	2600	12.982	644.9	18.4	68.1	86.5
2700	12.993	765.8	13.0	48.1	61.1	2700	12.984	661.6	18.9	69.8	88.8
2800	12.993	785.4	13.4	49.3	62.7	2800	12.985	678.1	19.4	71.6	91.0
2900	12.994	804.7	13.7	50.5	64.2	2900	12.986	694.3	19.9	73.3	93.2
3000	12.994	823.8	14.0	51.7	65.7	3000	12.987	710.3	20.3	75.0	95.3
3100	12.994	842.5	14.3	52.9	67.2	3100	12.988	726.1	20.8	76.7	97.4
3200	12.995	861.1	14.6	54.1	68.7	3200	12.988	741.6	21.2	78.3	99.5
3300	12.995	879.4	14.9	55.2	70.2	3300	12.989	757.0	21.7	79.9	101.6
3400	12.995	897.4	15.3	56.4	71.6	3400	12.990	772.1	22.1	81.6	103.6
3500	12.996	915.3	15.6	57.5	73.0	3500	12.990	787.1	22.5	83.1	105.6
3600	12.996	933.0	15.9	58.6	74.5	3600	12.991	801.8	22.9	84.7	107.6
3700	12.996	950.4	16.2	59.7	75.9	3700	12.991	816.4	23.4	86.2	109.6
3800	12.996	967.7	16.5	60.8	77.2	3800	12.992	830.8	23.8	87.8	111.5
3900	12.996	984.8	16.7	61.9	78.6	3900	12.992	845.0	24.2	89.3	113.4
4000	12.997	1001.7	17.0	62.9	79.9	4000	12.992	859.1	24.6	90.8	115.3
4100	12.997	1018.4	17.3	64.0	81.3	4100	12.993	873.0	25.0	92.2	117.2
4200	12.997	1035.0	17.6	65.0	82.6	4200	12.993	886.7	25.4	93.7	119.0
4300	12.997	1051.4	17.9	66.0	83.9	4300	12.994	900.3	25.8	95.1	120.9
4400	12.997	1067.6	18.1	67.1	85.2	4400	12.994	913.8	26.1	96.5	122.7
4500	12.997	1083.7	18.4	68.1	86.5	4500	12.994	927.1	26.5	98.0	124.5
4600	12.997	1099.6	18.7	69.1	87.8	4600	12.994	940.3	26.9	99.4	126.2
4700	12.998	1115.3	19.0	70.1	89.0	4700	12.995	953.4	27.3	100.7	128.0
4800	12.998	1130.9	19.2	71.0	90.3	4800	12.995	966.3	27.6	102.1	129.7
4900	12.998	1146.4	19.5	72.0	91.5	4900	12.995	979.2	28.0	103.5	131.5
5000	12.998	1161.7	19.7	73.0	92.7	5000	12.995	991.9	28.4	104.8	133.2

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Xe						Zn					
M = 131.30, σ = 4.047, ϵ/k = 231.0						M = 65.38, σ = 2.284, ϵ/k = 1393					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	77.5	4.4	0.0	4.4	100	2.500	441.1	50.3	0.0	50.3
200	2.500	154.6	8.8	0.0	8.8	200	2.500	180.0	20.5	0.0	20.5
300	2.500	231.1	13.1	0.0	13.1	300	2.500	229.7	26.2	0.0	26.2
400	2.500	301.8	17.1	0.0	17.1	400	2.500	292.9	33.4	0.0	33.4
500	2.500	365.7	20.8	0.0	20.8	500	2.500	355.7	40.5	0.0	40.5
600	2.500	424.1	24.1	0.0	24.1	600	2.500	419.8	47.9	0.0	47.9
700	2.500	478.4	27.2	0.0	27.2	700	2.500	486.1	55.4	0.0	55.4
800	2.500	529.2	30.0	0.0	30.0	800	2.500	554.4	63.2	0.0	63.2
900	2.500	577.0	32.7	0.0	32.7	900	2.500	624.2	71.1	0.0	71.1
1000	2.500	622.5	35.3	0.0	35.3	1000	2.500	694.8	79.2	0.0	79.2
1100	2.500	665.8	37.8	0.0	37.8	1100	2.500	765.7	87.3	0.0	87.3
1200	2.500	707.2	40.1	0.0	40.1	1200	2.500	836.7	95.4	0.0	95.4
1300	2.500	747.2	42.4	0.0	42.4	1300	2.500	907.4	103.4	0.0	103.4
1400	2.500	785.9	44.6	0.0	44.6	1400	2.500	977.9	111.5	0.0	111.5
1500	2.500	823.6	46.7	0.0	46.7	1500	2.500	1046.9	119.3	0.0	119.3
1600	2.500	860.3	48.8	0.0	48.8	1600	2.500	1115.7	127.2	0.0	127.2
1700	2.500	896.0	50.9	0.0	50.9	1700	2.500	1184.0	135.0	0.0	135.0
1800	2.500	930.8	52.8	0.0	52.8	1800	2.500	1251.4	142.6	0.0	142.6
1900	2.500	964.8	54.8	0.0	54.8	1900	2.500	1317.9	150.2	0.0	150.2
2000	2.500	998.0	56.6	0.0	56.6	2000	2.500	1383.3	157.7	0.0	157.7
2100	2.500	1030.5	58.5	0.0	58.5	2100	2.500	1447.7	165.0	0.0	165.0
2200	2.500	1062.2	60.3	0.0	60.3	2200	2.500	1511.0	172.2	0.0	172.2
2300	2.500	1093.3	62.1	0.0	62.1	2300	2.500	1573.2	179.3	0.0	179.3
2400	2.500	1123.8	63.8	0.0	63.8	2400	2.500	1634.4	186.3	0.0	186.3
2500	2.500	1153.7	65.5	0.0	65.5	2500	2.500	1694.5	193.1	0.0	193.1
2600	2.500	1183.2	67.2	0.0	67.2	2600	2.500	1753.7	199.9	0.0	199.9
2700	2.500	1212.2	68.8	0.0	68.8	2700	2.500	1811.9	206.5	0.0	206.5
2800	2.500	1240.7	70.4	0.0	70.4	2800	2.500	1869.1	213.0	0.0	213.1
2900	2.500	1268.9	72.0	0.0	72.0	2900	2.500	1925.5	219.5	0.0	219.5
3000	2.500	1296.9	73.6	0.0	73.6	3000	2.500	1981.0	225.8	0.0	225.8
3100	2.500	1324.5	75.2	0.0	75.2	3100	2.501	2035.8	232.0	0.0	232.1
3200	2.500	1352.0	76.7	0.0	76.7	3200	2.501	2089.7	238.2	0.1	238.3
3300	2.500	1379.3	78.3	0.0	78.3	3300	2.501	2142.9	244.3	0.1	244.4
3400	2.500	1406.5	79.8	0.0	79.8	3400	2.502	2195.4	250.2	0.1	250.4
3500	2.500	1433.6	81.4	0.0	81.4	3500	2.502	2247.2	256.1	0.2	256.4
3600	2.500	1460.7	82.9	0.0	82.9	3600	2.503	2298.3	262.0	0.3	262.3
3700	2.500	1487.8	84.4	0.0	84.4	3700	2.504	2348.8	267.7	0.4	268.1
3800	2.500	1514.1	85.9	0.0	85.9	3800	2.506	2398.7	273.4	0.6	274.0
3900	2.500	1540.0	87.4	0.0	87.4	3900	2.508	2448.0	279.0	0.7	279.8
4000	2.500	1565.8	88.9	0.0	88.9	4000	2.510	2496.8	284.6	1.0	285.6
4100	2.500	1591.2	90.3	0.0	90.3	4100	2.512	2545.0	290.1	1.3	291.4
4200	2.500	1616.5	91.7	0.0	91.7	4200	2.516	2592.6	295.5	1.6	297.1
4300	2.500	1641.5	93.2	0.0	93.2	4300	2.519	2639.8	300.9	2.0	302.9
4400	2.500	1666.3	94.6	0.0	94.6	4400	2.524	2686.4	306.2	2.5	308.8
4500	2.500	1690.8	96.0	0.0	96.0	4500	2.529	2732.5	311.5	3.1	314.6
4600	2.500	1715.2	97.3	0.0	97.3	4600	2.534	2778.2	316.7	3.8	320.5
4700	2.500	1739.4	98.7	0.0	98.7	4700	2.541	2823.4	321.8	4.7	326.5
4800	2.500	1763.4	100.1	0.0	100.1	4800	2.549	2868.2	326.9	5.6	332.5
4900	2.500	1787.1	101.4	0.0	101.4	4900	2.557	2912.5	332.0	6.7	338.6
5000	2.500	1810.8	102.8	0.0	102.8	5000	2.567	2956.4	337.0	7.9	344.9

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Ar						He					
$M = 39.944$, $\sigma = 3.408$, $\epsilon/k = 119.9$						$M = 4.003$, $\sigma = 2.608$, $\epsilon/k = 10.22$					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	83.4	15.6	0.0	15.6	100	2.500	95.6	178.0	0.0	178.0
200	2.500	163.5	30.5	0.0	30.5	200	2.500	150.0	279.2	0.0	279.2
300	2.500	230.7	43.0	0.0	43.0	300	2.500	195.1	363.2	0.0	363.2
400	2.500	288.4	53.8	0.0	53.8	400	2.500	234.9	437.3	0.0	437.3
500	2.500	339.6	63.4	0.0	63.4	500	2.500	271.2	505.0	0.0	505.0
600	2.500	386.2	72.0	0.0	72.0	600	2.500	305.1	568.0	0.0	568.0
700	2.500	429.3	80.1	0.0	80.1	700	2.500	337.0	627.3	0.0	627.3
800	2.500	470.1	87.7	0.0	87.7	800	2.500	367.3	683.7	0.0	683.7
900	2.500	508.8	94.9	0.0	94.9	900	2.500	396.3	737.7	0.0	737.7
1000	2.500	545.6	101.8	0.0	101.8	1000	2.500	424.1	789.6	0.0	789.6
1100	2.500	580.9	108.4	0.0	108.4	1100	2.500	451.0	839.7	0.0	839.7
1200	2.500	614.7	114.7	0.0	114.7	1200	2.500	477.1	888.1	0.0	888.1
1300	2.500	647.3	120.8	0.0	120.8	1300	2.500	502.4	935.2	0.0	935.2
1400	2.500	678.8	126.6	0.0	126.6	1400	2.500	527.0	981.0	0.0	981.0
1500	2.500	709.5	132.4	0.0	132.4	1500	2.500	550.9	1025.7	0.0	1025.7
1600	2.500	739.5	138.0	0.0	138.0	1600	2.500	574.4	1069.3	0.0	1069.3
1700	2.500	769.1	143.5	0.0	143.5	1700	2.500	597.3	1111.9	0.0	1111.9
1800	2.500	798.5	149.0	0.0	149.0	1800	2.500	619.7	1153.7	0.0	1153.7
1900	2.500	827.7	154.4	0.0	154.4	1900	2.500	641.7	1194.6	0.0	1194.6
2000	2.500	856.2	159.7	0.0	159.7	2000	2.500	663.3	1234.8	0.0	1234.8
2100	2.500	883.9	164.9	0.0	164.9	2100	2.500	684.5	1274.3	0.0	1274.3
2200	2.500	911.2	170.0	0.0	170.0	2200	2.500	705.3	1313.1	0.0	1313.1
2300	2.500	938.0	175.0	0.0	175.0	2300	2.500	725.8	1351.3	0.0	1351.3
2400	2.500	964.4	179.9	0.0	179.9	2400	2.500	746.0	1388.9	0.0	1388.9
2500	2.500	990.3	184.8	0.0	184.8	2500	2.500	765.9	1425.9	0.0	1425.9
2600	2.500	1015.9	189.5	0.0	189.5	2600	2.500	785.5	1462.4	0.0	1462.4
2700	2.500	1041.1	194.2	0.0	194.2	2700	2.500	804.9	1498.5	0.0	1498.5
2800	2.500	1065.9	198.9	0.0	198.9	2800	2.500	824.0	1534.0	0.0	1534.0
2900	2.500	1090.5	203.4	0.0	203.4	2900	2.500	842.9	1569.1	0.0	1569.1
3000	2.500	1114.7	208.0	0.0	208.0	3000	2.500	861.5	1603.8	0.0	1603.8
3100	2.500	1138.6	212.4	0.0	212.4	3100	2.500	879.9	1638.1	0.0	1638.1
3200	2.500	1162.2	216.8	0.0	216.8	3200	2.500	898.1	1671.9	0.0	1671.9
3300	2.500	1185.6	221.2	0.0	221.2	3300	2.500	916.1	1705.5	0.0	1705.5
3400	2.500	1208.7	225.5	0.0	225.5	3400	2.500	933.9	1738.6	0.0	1738.6
3500	2.500	1231.6	229.8	0.0	229.8	3500	2.500	951.5	1771.4	0.0	1771.4
3600	2.500	1254.2	234.0	0.0	234.0	3600	2.500	969.0	1803.9	0.0	1803.9
3700	2.500	1276.6	238.2	0.0	238.2	3700	2.500	986.2	1836.0	0.0	1836.0
3800	2.500	1298.8	242.3	0.0	242.3	3800	2.500	1003.3	1867.9	0.0	1867.9
3900	2.500	1320.8	246.4	0.0	246.4	3900	2.500	1020.3	1899.4	0.0	1899.4
4000	2.500	1342.5	250.5	0.0	250.5	4000	2.500	1037.1	1930.7	0.0	1930.7
4100	2.500	1364.1	254.5	0.0	254.5	4100	2.500	1053.7	1961.7	0.0	1961.7
4200	2.500	1385.5	258.5	0.0	258.5	4200	2.500	1070.3	1992.4	0.0	1992.4
4300	2.500	1406.7	262.4	0.0	262.4	4300	2.500	1086.6	2022.9	0.0	2022.9
4400	2.500	1427.7	266.4	0.0	266.4	4400	2.500	1102.9	2053.1	0.0	2053.1
4500	2.500	1448.6	270.3	0.0	270.3	4500	2.500	1119.0	2083.1	0.0	2083.1
4600	2.500	1469.3	274.1	0.0	274.1	4600	2.500	1134.9	2112.9	0.0	2112.9
4700	2.500	1489.8	277.9	0.0	277.9	4700	2.500	1150.8	2142.4	0.0	2142.4
4800	2.500	1510.2	281.7	0.0	281.7	4800	2.500	1166.5	2171.7	0.0	2171.7
4900	2.500	1530.4	285.5	0.0	285.5	4900	2.500	1182.2	2200.8	0.0	2200.8
5000	2.500	1550.5	289.3	0.0	289.3	5000	2.500	1197.7	2229.7	0.0	2229.7

TABLE III.—Continued. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Kr						Ne					
M = 83.80, σ = 3.690, ϵ/k = 164.7						M = 20.183, σ = 2.764, ϵ/k = 40.2					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$	T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	87.4	7.8	0.0	7.8	100	2.500	143.7	53.0	0.0	53.0
200	2.500	175.7	15.6	0.0	15.6	200	2.500	240.7	88.9	0.0	88.9
300	2.500	256.0	22.8	0.0	22.8	300	2.500	317.1	117.1	0.0	117.1
400	2.500	326.1	29.0	0.0	29.0	400	2.500	383.2	141.5	0.0	141.5
500	2.500	388.7	34.6	0.0	34.6	500	2.500	442.3	163.3	0.0	163.3
600	2.500	445.8	39.6	0.0	39.6	600	2.500	497.7	183.8	0.0	183.8
700	2.500	498.6	44.3	0.0	44.3	700	2.500	551.0	203.5	0.0	203.5
800	2.500	547.7	48.7	0.0	48.7	800	2.500	601.2	222.0	0.0	222.0
900	2.500	594.1	52.8	0.0	52.8	900	2.500	649.0	239.6	0.0	239.6
1000	2.500	638.5	56.8	0.0	56.8	1000	2.500	694.9	256.6	0.0	256.6
1100	2.500	681.1	60.6	0.0	60.6	1100	2.500	739.1	272.9	0.0	272.9
1200	2.500	722.2	64.2	0.0	64.2	1200	2.500	781.9	288.7	0.0	288.7
1300	2.500	761.8	67.7	0.0	67.7	1300	2.500	823.4	304.0	0.0	304.0
1400	2.500	800.1	71.1	0.0	71.1	1400	2.500	863.7	318.9	0.0	318.9
1500	2.500	837.1	74.4	0.0	74.4	1500	2.500	903.0	333.4	0.0	333.4
1600	2.500	873.1	77.6	0.0	77.6	1600	2.500	941.4	347.6	0.0	347.6
1700	2.500	908.0	80.8	0.0	80.8	1700	2.500	979.0	361.5	0.0	361.5
1800	2.500	942.1	83.8	0.0	83.8	1800	2.500	1015.7	375.0	0.0	375.0
1900	2.500	975.3	86.7	0.0	86.7	1900	2.500	1051.8	388.4	0.0	388.4
2000	2.500	1007.9	89.6	0.0	89.6	2000	2.500	1087.2	401.4	0.0	401.4
2100	2.500	1039.9	92.5	0.0	92.5	2100	2.500	1121.9	414.2	0.0	414.2
2200	2.500	1071.5	95.3	0.0	95.3	2200	2.500	1156.1	426.9	0.0	426.9
2300	2.500	1102.8	98.1	0.0	98.1	2300	2.500	1189.7	439.3	0.0	439.3
2400	2.500	1133.8	100.8	0.0	100.8	2400	2.500	1222.8	451.5	0.0	451.5
2500	2.500	1164.7	103.6	0.0	103.6	2500	2.500	1255.4	463.5	0.0	463.5
2600	2.500	1195.5	106.3	0.0	106.3	2600	2.500	1287.6	475.4	0.0	475.4
2700	2.500	1225.8	109.0	0.0	109.0	2700	2.500	1319.3	487.1	0.0	487.1
2800	2.500	1255.3	111.6	0.0	111.6	2800	2.500	1350.6	498.7	0.0	498.7
2900	2.500	1284.4	114.2	0.0	114.2	2900	2.500	1381.5	510.1	0.0	510.1
3000	2.500	1313.2	116.8	0.0	116.8	3000	2.500	1412.0	521.4	0.0	521.4
3100	2.500	1341.6	119.3	0.0	119.3	3100	2.500	1442.2	532.5	0.0	532.5
3200	2.500	1369.6	121.8	0.0	121.8	3200	2.500	1472.0	543.5	0.0	543.5
3300	2.500	1397.3	124.3	0.0	124.3	3300	2.500	1501.5	554.4	0.0	554.4
3400	2.500	1424.7	126.7	0.0	126.7	3400	2.500	1530.7	565.2	0.0	565.2
3500	2.500	1451.8	129.1	0.0	129.1	3500	2.500	1559.6	575.9	0.0	575.9
3600	2.500	1478.6	131.5	0.0	131.5	3600	2.500	1588.2	586.4	0.0	586.4
3700	2.500	1505.2	133.9	0.0	133.9	3700	2.500	1616.5	596.9	0.0	596.9
3800	2.500	1531.5	136.2	0.0	136.2	3800	2.500	1644.6	607.2	0.0	607.2
3900	2.500	1557.5	138.5	0.0	138.5	3900	2.500	1672.4	617.5	0.0	617.5
4000	2.500	1583.2	140.8	0.0	140.8	4000	2.500	1699.9	627.7	0.0	627.7
4100	2.500	1608.8	143.1	0.0	143.1	4100	2.500	1727.2	637.7	0.0	637.7
4200	2.500	1634.1	145.3	0.0	145.3	4200	2.500	1754.3	647.7	0.0	647.7
4300	2.500	1659.2	147.5	0.0	147.5	4300	2.500	1781.1	657.6	0.0	657.6
4400	2.500	1684.0	149.8	0.0	149.8	4400	2.500	1807.7	667.5	0.0	667.5
4500	2.500	1708.7	152.0	0.0	152.0	4500	2.500	1834.1	677.2	0.0	677.2
4600	2.500	1733.2	154.1	0.0	154.1	4600	2.500	1860.3	686.9	0.0	686.9
4700	2.500	1757.4	156.3	0.0	156.3	4700	2.500	1886.3	696.5	0.0	696.5
4800	2.500	1781.5	158.4	0.0	158.4	4800	2.500	1912.1	706.0	0.0	706.0
4900	2.500	1805.4	160.6	0.0	160.6	4900	2.500	1937.7	715.5	0.0	715.5
5000	2.500	1829.2	162.7	0.0	162.7	5000	2.500	1963.1	724.8	0.0	724.8

TABLE III.—Concluded. IDEAL HEAT CAPACITY AND LOW-PRESSURE TRANSPORT PROPERTIES AS A FUNCTION OF TEMPERATURE

[T, temperature (°K); C_p/R, heat capacity; η, viscosity (poises); λ', translational thermal conductivity (g-cal/(cm)(sec)(°K)); λ'', internal thermal conductivity (g-cal/(cm)(sec)(°K)); λ, total thermal conductivity (g-cal/(cm)(sec)(°K)).]

Xe					
M = 131.30, σ = 4.082, ϵ/k = 206.9					
T, °K	C_p/R	$\eta \times 10^6$	$\lambda' \times 10^6$	$\lambda'' \times 10^6$	$\lambda \times 10^6$
100	2.500	80.1	4.5	0.0	4.5
200	2.500	160.8	9.1	0.0	9.1
300	2.500	238.7	13.5	0.0	13.5
400	2.500	309.1	17.5	0.0	17.5
500	2.500	372.4	21.1	0.0	21.1
600	2.500	430.2	24.4	0.0	24.4
700	2.500	483.8	27.5	0.0	27.5
800	2.500	533.8	30.3	0.0	30.3
900	2.500	581.1	33.0	0.0	33.0
1000	2.500	625.8	35.5	0.0	35.5
1100	2.500	668.4	37.9	0.0	37.9
1200	2.500	709.5	40.3	0.0	40.3
1300	2.500	749.2	42.5	0.0	42.5
1400	2.500	787.8	44.7	0.0	44.7
1500	2.500	825.2	46.8	0.0	46.8
1600	2.500	861.5	48.9	0.0	48.9
1700	2.500	896.9	50.9	0.0	50.9
1800	2.500	931.4	52.9	0.0	52.9
1900	2.500	964.9	54.8	0.0	54.8
2000	2.500	997.7	56.6	0.0	56.6
2100	2.500	1029.8	58.4	0.0	58.4
2200	2.500	1061.1	60.2	0.0	60.2
2300	2.500	1091.9	62.0	0.0	62.0
2400	2.500	1122.1	63.7	0.0	63.7
2500	2.500	1151.8	65.4	0.0	65.4
2600	2.500	1181.2	67.0	0.0	67.0
2700	2.500	1210.1	68.7	0.0	68.7
2800	2.500	1238.8	70.3	0.0	70.3
2900	2.500	1267.3	71.9	0.0	71.9
3000	2.500	1295.6	73.5	0.0	73.5
3100	2.500	1323.8	75.1	0.0	75.1
3200	2.500	1352.0	76.7	0.0	76.7
3300	2.500	1380.1	78.3	0.0	78.3
3400	2.500	1407.5	79.9	0.0	79.9
3500	2.500	1434.4	81.4	0.0	81.4
3600	2.500	1461.1	82.9	0.0	82.9
3700	2.500	1487.5	84.4	0.0	84.4
3800	2.500	1513.6	85.9	0.0	85.9
3900	2.500	1539.5	87.4	0.0	87.4
4000	2.500	1565.1	88.8	0.0	88.8
4100	2.500	1590.5	90.3	0.0	90.3
4200	2.500	1615.6	91.7	0.0	91.7
4300	2.500	1640.5	93.1	0.0	93.1
4400	2.500	1665.2	94.5	0.0	94.5
4500	2.500	1689.7	95.9	0.0	95.9
4600	2.500	1714.0	97.3	0.0	97.3
4700	2.500	1738.1	98.6	0.0	98.6
4800	2.500	1762.0	100.0	0.0	100.0
4900	2.500	1785.7	101.4	0.0	101.4
5000	2.500	1809.3	102.7	0.0	102.7

TABLE IV.—VISCOSITY AT LOW PRESSURE AS A FUNCTION OF TEMPERATURE

[η, viscosity (poises).]

Molecule	Air	BI_3	$B(OCH_3)_3$	$BeBr_2$	BeI_2	Be_2	BrF_3	BrO
M	28.97	391.55	103.92	168.84	262.83	18.03	136.92	95.92
σ	3.711	5.906	5.503	4.235	4.955	2.891	4.366	3.882
ϵ/k	78.6	570.2	396.7	936	1019	3603	481.7	233
T, °K	$\eta \times 10^6$							
100	73.8	46.1	30.4	----	----	-----	51.9	71.7
200	136.0	81.6	56.5	87.5	77.7	-----	94.5	143.0
300	185.2	119.0	84.9	123.4	109.0	-----	140.1	213.8
400	227.2	158.9	113.7	159.7	140.4	-----	187.7	279.4
500	264.7	199.5	141.6	197.7	173.1	-----	235.1	338.7
600	299.2	239.6	168.3	237.3	207.1	-----	281.3	393.0
700	331.3	278.8	193.5	277.6	242.1	111.6	325.8	443.4
800	361.4	317.0	217.2	318.0	277.4	124.2	368.3	490.5
900	389.8	353.6	239.7	358.3	312.7	137.1	408.8	534.9
1000	417.1	388.8	261.1	398.0	347.9	150.0	447.4	577.2
1100	443.5	422.5	281.6	437.2	382.4	162.8	484.3	617.4
1200	469.5	455.0	301.2	475.8	416.6	175.5	519.8	655.8
1300	495.1	486.3	320.1	513.7	450.4	188.4	553.9	692.9
1400	519.7	516.5	338.4	550.6	483.5	201.3	586.9	728.9
1500	543.6	545.8	356.0	586.7	515.9	214.4	618.9	763.9
1600	567.0	574.2	373.1	621.8	547.6	227.7	649.9	797.9
1700	589.8	601.9	389.7	656.1	578.6	241.2	679.9	831.1
1800	612.1	628.8	405.8	689.5	608.8	254.8	709.2	863.4
1900	633.9	655.0	421.5	722.2	638.4	268.6	737.6	895.0
2000	655.3	680.5	436.8	754.1	667.3	282.5	765.5	925.8
2100	676.3	705.5	451.7	785.3	695.6	296.6	792.7	956.0
2200	697.0	729.9	466.4	815.8	723.3	310.8	819.2	985.4
2300	717.3	753.8	480.8	845.7	750.5	325.1	845.1	1014.3
2400	737.3	777.3	495.0	875.1	777.1	339.4	870.5	1042.6
2500	757.0	800.3	508.9	903.9	803.2	353.8	895.4	1070.4
2600	776.5	822.7	522.6	932.2	828.9	368.2	919.9	1097.7
2700	795.6	844.8	536.1	960.0	854.2	382.7	944.1	1124.6
2800	814.5	866.5	549.4	987.4	879.0	397.1	967.8	1151.1
2900	833.2	887.8	562.4	1014.3	903.4	411.6	991.3	1177.3
3000	851.6	908.8	575.3	1040.7	927.5	426.0	1014.4	1203.2
3100	869.8	929.6	588.0	1066.8	951.2	440.5	1037.2	1228.9
3200	887.8	950.0	600.6	1092.5	974.5	454.9	1059.7	1254.3
3300	905.6	970.2	612.9	1117.8	997.5	469.3	1081.9	1279.6
3400	923.2	990.2	625.1	1142.7	1020.2	483.7	1103.9	1304.8
3500	940.6	1009.9	637.1	1167.3	1042.5	498.1	1125.6	1329.9
3600	957.9	1029.4	649.0	1191.5	1064.6	512.5	1147.0	1355.0
3700	974.9	1048.7	660.7	1215.4	1086.4	526.6	1168.2	1380.0
3800	991.8	1067.8	672.3	1239.2	1107.9	540.6	1189.1	1404.6
3900	1008.6	1086.7	683.7	1262.7	1129.1	554.7	1209.8	1428.7
4000	1025.2	1105.4	695.0	1285.8	1150.0	568.8	1230.2	1452.5
4100	1041.6	1123.8	706.2	1308.6	1170.8	582.8	1250.4	1476.2
4200	1058.0	1142.1	717.3	1331.1	1191.4	596.7	1270.4	1499.6
4300	1074.1	1160.2	728.2	1353.3	1211.7	610.7	1290.2	1522.8
4400	1090.2	1178.2	739.0	1375.3	1231.8	624.5	1309.7	1545.8
4500	1106.1	1195.9	749.8	1397.0	1251.6	638.3	1329.1	1568.6
4600	1121.9	1213.5	760.4	1418.6	1271.2	652.0	1348.2	1591.2
4700	1137.5	1230.9	771.0	1439.9	1290.6	665.7	1367.2	1613.6
4800	1153.1	1248.1	781.4	1461.0	1309.7	679.3	1386.0	1635.9
4900	1168.5	1265.2	791.8	1481.9	1328.7	692.8	1404.6	1658.0
5000	1183.8	1282.1	802.2	1502.7	1347.5	706.2	1423.0	1679.9

TABLE IV.—Continued. VISCOSITY AT LOW PRESSURE AS A FUNCTION OF TEMPERATURE

[η, viscosity (poises).]

Molecule	CCl_2	CCl_3	CHBrClF	C_2H_5Cl	C_2H_5OH	n-C_3H_7OH	CH_3COCH_3	CH_3COOCH_3
M	82.92	118.38	147.39	64.52	46.07	60.10	58.08	74.08
σ	4.692	5.320	5.13	4.898	4.530	4.549	4.600	4.936
ϵ/k	213	268	345	300	362.6	576.7	560.2	469.8
T, °K	$\eta \times 10^6$							
100	47.5	40.1	43.7	33.4	30.8	----	----	30.1
200	95.3	78.6	82.9	64.6	58.0	53.7	52.2	55.0
300	141.8	118.3	125.1	97.5	87.4	78.2	76.2	81.6
400	184.0	156.0	166.8	129.3	116.7	104.3	101.8	109.4
500	222.0	190.7	206.7	159.0	145.0	131.0	127.8	137.0
600	256.7	222.6	244.1	186.6	171.6	157.4	153.4	163.8
700	288.9	252.1	279.1	212.2	196.6	183.2	178.5	189.5
800	319.0	279.9	311.9	236.2	220.1	208.3	202.8	214.1
900	347.4	306.1	343.0	258.9	242.3	232.4	226.2	237.4
1000	374.2	330.9	372.5	280.5	263.4	255.6	248.5	259.7
1100	399.8	354.6	400.7	301.0	283.6	277.9	270.0	280.9
1200	424.5	377.4	427.8	320.7	303.0	299.3	290.6	301.4
1300	448.3	399.1	453.8	339.8	321.6	320.0	310.5	321.1
1400	471.4	420.2	478.9	358.0	339.5	339.9	329.7	340.1
1500	493.9	440.6	503.2	375.6	356.9	359.3	348.3	358.5
1600	515.7	460.4	526.6	392.7	373.8	378.0	366.4	376.3
1700	536.9	479.8	549.4	409.4	390.1	396.2	383.9	393.6
1800	557.6	498.7	571.6	425.7	405.9	414.0	401.0	410.5
1900	577.8	517.2	593.2	441.6	421.4	431.3	417.7	426.9
2000	597.5	535.3	614.4	457.2	436.5	448.2	433.9	443.0
2100	616.8	553.0	635.2	472.5	451.3	464.7	449.8	458.6
2200	635.6	570.3	655.6	487.5	465.9	480.8	465.2	473.8
2300	654.1	587.3	675.6	502.2	480.1	496.5	480.5	488.7
2400	672.2	603.9	695.2	516.6	494.2	512.1	495.4	503.4
2500	690.0	620.2	714.6	530.8	508.0	527.2	509.9	517.7
2600	707.6	636.3	733.6	544.6	521.5	542.1	524.2	531.9
2700	724.9	652.0	752.3	558.3	534.9	556.6	538.2	545.8
2800	742.0	667.5	770.6	571.7	548.0	570.9	552.0	559.5
2900	759.0	682.8	788.7	584.9	561.0	585.0	565.6	573.0
3000	775.9	697.8	806.5	597.9	573.7	598.9	578.9	586.4
3100	792.6	712.6	824.1	610.7	586.3	612.6	592.1	599.5
3200	809.3	727.3	841.3	623.4	598.6	626.1	605.1	612.5
3300	826.0	741.8	858.4	635.8	610.8	639.4	618.0	625.3
3400	842.7	756.1	875.2	648.1	622.8	652.6	630.7	638.0
3500	858.9	770.3	891.8	660.3	634.7	665.6	643.2	650.5
3600	874.9	784.4	908.1	672.3	646.4	678.4	655.6	662.9
3700	890.7	798.4	924.3	684.2	658.0	691.2	667.9	675.0
3800	906.4	812.4	940.3	696.0	669.4	703.8	680.0	687.1
3900	921.9	826.3	956.1	707.7	680.7	716.2	692.0	699.0
4000	937.3	840.1	971.7	719.3	691.8	728.5	703.9	710.8
4100	952.5	853.9	987.2	730.9	702.9	740.7	715.6	722.4
4200	967.5	867.8	1002.6	742.4	713.8	752.8	727.3	733.9
4300	982.5	881.6	1017.8	753.9	724.7	764.7	738.8	745.3
4400	997.3	894.9	1032.9	765.3	735.4	776.6	750.2	756.6
4500	1011.9	908.2	1048.0	776.7	746.1	788.3	761.5	767.8
4600	1026.5	921.4	1062.9	788.1	756.7	799.9	772.6	778.8
4700	1040.9	934.4	1077.7	799.4	767.2	811.4	783.7	789.7
4800	1055.3	947.4	1092.5	810.8	777.7	822.7	794.6	800.5
4900	1069.5	960.2	1107.3	821.9	788.1	834.0	805.5	811.3
5000	1083.6	972.9	1122.0	832.8	798.4	845.2	816.2	821.9

TABLE IV.—Continued. VISCOSITY AT LOW PRESSURE AS A FUNCTION OF TEMPERATURE

[η, viscosity (poises).]

Molecule	n-C_4H_{10}	iso-C_4H_{10}	$C_2H_5OC_2H_5$	$CH_3COOC_2H_5$	n-C_5H_{12}	$C(CH_3)_4$	C_6H_{12}	n-C_6H_{14}
M	58.12	58.12	74.12	88.11	72.15	72.15	84.16	86.18
σ	4.687	5.278	5.678	5.205	5.784	6.464	6.182	5.949
ϵ/k	531.4	330.1	313.8	521.3	341.1	193.4	297.1	399.3
T, °K	$\eta \times 10^6$							
100	28.6	26.4	26.2	28.7	24.2	24.4	24.0	23.6
200	51.3	50.3	50.3	51.6	45.9	49.2	46.5	43.9
300	75.4	75.9	76.0	76.0	69.3	72.6	70.3	65.9
400	100.8	101.1	101.0	101.7	92.3	93.6	93.1	88.3
500	126.5	125.0	124.6	127.6	114.3	112.4	114.5	110.0
600	151.7	147.3	146.4	152.9	134.9	129.5	134.2	130.8
700	176.3	168.1	166.8	177.5	154.2	145.4	152.6	150.4
800	199.9	187.6	185.9	201.2	172.3	160.2	169.8	168.9
900	222.6	206.1	204.0	223.9	189.4	174.2	186.1	186.4
1000	244.2	223.6	221.1	245.6	205.7	187.4	201.6	203.1
1100	265.0	240.4	237.5	266.3	221.2	200.1	216.3	219.0
1200	284.9	256.5	253.2	286.2	236.1	212.3	230.5	234.3
1300	304.2	271.9	268.4	305.4	250.4	224.1	244.1	249.0
1400	322.7	286.9	282.9	324.0	264.2	235.6	257.2	263.3
1500	340.7	301.3	297.0	342.0	277.6	246.7	269.8	277.0
1600	358.1	315.2	310.6	359.4	290.5	257.5	282.1	290.3
1700	375.1	328.7	323.8	376.3	303.0	268.0	294.1	303.2
1800	391.6	341.9	336.8	392.8	315.3	278.2	305.7	315.8
1900	407.7	354.8	349.4	408.9	327.2	288.2	317.2	328.0
2000	423.3	367.4	361.8	424.5	338.9	297.9	328.4	339.9
2100	438.6	379.8	373.9	439.8	350.3	307.4	339.3	351.6
2200	453.6	391.9	385.8	454.8	361.5	316.7	350.1	363.0
2300	468.3	403.9	397.5	469.4	372.6	325.9	360.6	374.2
2400	482.6	415.6	409.0	483.7	383.4	334.9	371.0	385.2
2500	496.6	427.1	420.2	497.7	394.0	343.8	381.1	396.1
2600	510.4	438.4	431.3	511.5	404.5	352.6	391.1	406.7
2700	523.9	449.5	442.2	525.0	414.8	361.3	400.9	417.2
2800	537.3	460.4	452.9	538.3	424.9	369.9	410.5	427.6
2900	550.4	471.2	463.4	551.5	434.9	378.6	420.0	437.8
3000	563.3	481.8	473.7	564.4	444.7	387.2	429.3	447.8
3100	576.1	492.2	483.9	577.2	454.3	395.8	438.5	457.7
3200	588.7	502.5	494.0	589.8	463.9	404.1	447.6	467.5
3300	601.2	512.6	503.9	602.2	473.2	412.3	456.5	477.1
3400	613.5	522.6	513.6	614.5	482.5	420.4	465.3	486.6
3500	625.6	532.4	523.3	626.7	491.6	428.5	474.0	496.0
3600	637.6	542.2	532.8	638.7	500.6	436.4	482.7	505.2
3700	649.5	551.8	542.3	650.6	509.5	444.3	491.2	514.3
3800	661.2	561.3	551.6	662.3	518.3	452.1	499.7	523.4
3900	672.9	570.7	560.9	673.9	527.1	459.8	508.1	532.3
4000	684.3	580.1	570.1	685.4	535.7	467.4	516.5	541.1
4100	695.7	589.3	579.2	696.8	544.2	475.0	524.8	549.8
4200	706.9	598.5	588.2	708.0	552.7	482.5	533.1	558.4
4300	718.1	607.6	597.2	719.1	561.1	489.9	541.3	566.9
4400	729.1	616.7	606.2	730.1	569.4	497.3	549.5	575.3
4500	740.0	625.7	615.1	741.0	577.7	504.6	557.7	583.7
4600	750.8	634.6	624.0	751.8	586.0	511.8	565.9	592.0
4700	761.4	643.6	632.9	762.5	594.2	519.0	574.1	600.2
4800	772.0	652.5	641.8	773.1	602.3	526.1	582.2	608.4
4900	782.5	661.4	650.7	783.5	610.5	533.2	590.1	616.4
5000	792.9	670.2	659.6	793.9	618.6	540.2	598.0	624.5

TABLE IV.—Concluded. VISCOSITY AT LOW PRESSURE AS A FUNCTION OF TEMPERATURE

[η, viscosity (poises).]

Molecule	LiCN	Mg_2	NaCN	Na_2O	PCl	S_2F_2	SiF_2Cl_2	UF_6
M	32.96	48.64	49.01	61.98	66.43	102.13	137.00	352.07
σ	3.996	3.301	4.395	4.358	4.552	4.702	5.270	5.967
ϵ/k	569.1	1614	2088	1827	454	205.6	277	236.8
T, °K	$\eta \times 10^6$							
100	----	-----	----	----	33.9	53.4	43.3	57.8
200	51.8	-----	----	----	62.1	107.2	84.7	115.0
300	75.5	-----	----	----	92.5	159.1	127.7	172.1
400	100.8	114.8	----	71.3	124.0	205.9	168.6	225.1
500	126.6	139.0	71.8	86.1	155.1	248.0	206.5	273.1
600	152.0	163.1	83.9	100.7	185.3	286.4	241.4	317.1
700	176.9	187.8	95.9	115.5	214.1	322.1	273.7	357.9
800	201.1	213.2	108.0	130.6	241.6	355.3	304.1	396.2
900	224.3	239.3	120.3	146.0	267.6	386.8	332.8	432.2
1000	246.6	265.9	132.9	161.9	292.4	416.5	360.0	466.4
1100	268.0	292.9	145.7	178.0	316.2	444.8	385.9	499.0
1200	288.6	320.1	158.8	194.4	339.0	472.2	410.9	530.2
1300	308.4	347.3	172.1	210.9	360.9	498.6	434.7	560.2
1400	327.6	374.5	185.6	227.5	382.1	524.2	457.7	589.3
1500	346.1	401.6	199.1	244.0	402.7	549.1	480.0	617.6
1600	364.1	428.7	212.6	260.6	422.5	573.3	501.7	645.2
1700	381.6	455.3	226.1	277.1	441.8	596.8	522.9	672.1
1800	398.7	481.7	239.7	293.6	460.6	619.7	543.5	698.3
1900	415.3	508.0	253.2	309.8	479.0	642.0	563.8	723.8
2000	431.5	534.1	266.7	325.9	496.8	663.8	583.5	748.8
2100	447.3	559.9	280.1	342.0	514.2	685.1	602.9	773.2
2200	462.8	585.4	293.3	357.9	531.2	706.0	621.8	797.1
2300	478.0	610.5	306.5	373.7	547.8	726.4	640.4	820.5
2400	492.9	635.3	319.6	389.4	564.1	746.5	658.7	843.5
2500	507.4	659.8	332.7	404.9	580.2	766.3	676.5	866.0
2600	521.6	683.8	345.6	420.2	596.0	785.8	694.1	888.1
2700	535.6	707.5	358.5	435.3	611.5	805.1	711.3	909.9
2800	549.4	730.9	371.2	450.2	626.9	824.2	728.3	931.3
2900	562.9	754.0	383.8	464.9	642.0	843.2	745.0	952.5
3000	576.2	776.7	396.3	479.4	656.9	862.0	761.4	973.4
3100	589.3	799.0	408.6	493.8	671.6	880.8	777.6	994.1
3200	602.3	821.1	420.8	508.0	686.1	899.6	793.6	1014.7
3300	615.1	842.9	432.8	521.9	700.4	918.3	809.4	1035.1
3400	627.8	864.4	444.8	535.7	714.5	936.5	825.0	1055.4
3500	640.3	885.6	456.5	549.4	728.5	954.4	840.5	1075.6
3600	652.7	906.6	468.2	562.8	742.2	972.1	855.9	1095.8
3700	664.9	927.3	479.7	576.1	755.9	989.7	871.1	1116.0
3800	677.0	947.7	491.1	589.3	769.3	1007.1	886.2	1136.1
3900	688.9	967.9	502.3	602.3	782.6	1024.3	901.3	1155.6
4000	700.8	987.9	513.5	615.1	795.7	1041.3	916.3	1174.9
4100	712.5	1007.6	524.5	627.8	808.7	1058.2	931.2	1194.0
4200	724.1	1027.2	535.4	640.4	821.5	1074.9	946.1	1213.0
4300	735.6	1046.5	546.2	652.8	834.2	1091.5	961.0	1231.8
4400	746.9	1065.6	556.9	665.2	846.8	1107.9	976.0	1250.4
4500	758.2	1084.6	567.5	677.3	859.2	1124.2	990.6	1268.8
4600	769.3	1103.3	577.9	689.4	871.5	1140.4	1004.9	1287.1
4700	780.3	1121.9	588.3	701.4	883.7	1156.4	1019.2	1305.3
4800	791.3	1140.3	598.6	713.2	895.8	1172.3	1033.3	1323.3
4900	802.1	1158.5	608.8	724.9	907.8	1188.1	1047.3	1341.2
5000	812.8	1176.5	618.9	736.5	919.6	1203.7	1061.2	1358.9

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