Report of Investigations 7639

Compressibility Data for Helium, Nitrogen, and Helium-Nitrogen Mixtures at 0°, 25°, and 50° C and at Pressures to 1,000 Atmospheres

By Ted C. Briggs and Alvin R. Howard
Formerly With Helium Research Center, Amarillo, Tex.

UNITED STATES DEPARTMENT OF THE INTERIOR
Rogers C. B. Morton, Secretary

BUREAU OF MINES
Elburt F. Osborn, Director

This publication has been cataloged as follows:

Briggs, Tedford C

Compressibility data for helium, nitrogen, and helium-nitrogen mixtures at 0°, 25°, and 50° C and at pressures to 1,000 atmospheres, by Ted C. Briggs and Alvin R. Howard. [Washington] U.S. Dept. of the Interior, Bureau of Mines [1972]

194 p. illus., tables. (U.S. Bureau of Mines. Report of investigations 7639)

Includes bibliography.

1. Helium. 2. Nitrogen. 3. Gases, Compressed. I. Howard, Alvin R. II. Title. III. Title: Helium-nitrogen mixtures ... (Series)

TN23.U7 no. 7639 622.06173

U.S. Dept. of the Int. Library

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $2
Catalog No. I28.23:7639
Stock Number 2404-1103

CONTENTS

ILLUSTRATIONS

TABLES

CONTENTS--Continued

COMPRESSIBILITY DATA FOR HELIUM, NITROGEN, AND HELIUM-NITROGEN MIXTURES AT 0°, 25°, AND 50° C AND AT PRESSURES TO 1,000 ATMOSPHERES

by

Ted C. Briggs[1] and Alvin R. Howard[2]

ABSTRACT

A special high-pressure Burnett-type compressibility apparatus was constructed and used to determine compressibility factors for pure helium, pure nitrogen, and nine helium-nitrogen mixtures containing 89.47, 79.04, 69.69, 60.09, 49.24, 41.02, 30.99, 20.53, and 10.67 mole-percent helium. A total of 161 runs were made consisting of 2,355 observed pressures. Data were obtained at 0°, 25°, and 50° C and at pressures to 1,000 atmospheres.

A power series in the reciprocal volume, commonly called a Leiden series, is used to represent the compressibility factors. Three parameters in the series are required to represent helium, five parameters to represent nitrogen, and from three to five parameters to represent the mixtures. Compressibility factors are believed to be accurate to better than 0.1 percent over the entire pressure, temperature, and composition range.

INTRODUCTION

Accurate experimental compressibility data for helium and helium-containing mixtures are of importance to the Bureau of Mines. These data are needed to accurately calculate the amount of helium transported through the various pipelines, the amount stored in the conservation fields, and the amount ultimately delivered to the user. Thermodynamic properties, computed from the compressibility data, can be used to design improved process and separation cycles for extracting, concentrating, and purifying helium. Extensive and accurate compressibility data over wide temperature and pressure ranges are required to develop an accurate equation of state. These data will contribute toward planning and coordinating the utilization of the Nation's helium resources and will aid in the future development of new uses for helium.

The data were obtained by use of a Burnett (9)[3] compressibility apparatus.

---

[1]Formerly research chemist (presently with the Division of Nonmetallic Minerals, Washington, D.C.).

[2]Formerly research chemist (presently with the American Smelting & Refining Co., Amarillo, Tex.).

[3]Underlined numbers in parentheses refer to items in the list of references at the end of this report.

Few experimental data are available in the published literature on helium, nitrogen, and helium-nitrogen mixtures over the temperature, pressure, and composition range of this work. Only Wiebe, Gaddy, and Heins (16) have published accurate data on helium at pressures to 1,000 atmospheres. Michels, Wouters, and de Boer (14) and Bartlett (3) have published data on nitrogen at pressures to 1,000 atmospheres. These investigators used an experimental procedure different from the Burnett method. There were no accurate 1,000 atmosphere data on helium-nitrogen mixtures. Wood, Boone, Marshall, and Baer (17) have developed an equation of state for helium-nitrogen mixtures at pressures to 300 atmospheres. Also, they present a survey of the published helium-nitrogen data.

The major accomplishment of our work is the extension of the pressure range of accurate data on helium, nitrogen, and helium-nitrogen mixtures. Data must be taken at many more isotherms to allow the development of a wide-range high-pressure equation of state.

EXPERIMENTAL APPARATUS

Many parts of the experimental apparatus are the same as those used in our previous work (4-5); however, a number of significant changes, additions, and recalibrations have been made. The description contained herein concentrates on the ways in which this experimental apparatus differs from the one used previously.

The volume ratio, $(V_1+V_2)/V_1$, is about 1.5 which gives more data per run and a better distribution of the pressure measurements for nitrogen and helium-nitrogen mixtures than did the previously used volume ratio of about 2.0.

Pressure vessels were purchased from Pressure Products Industries, Inc.[4] The pressure vessels have a working pressure of 1,020 atmospheres with a calculated safety factor of about 7.5. Drawings of the vessels and their relative positions in the constant temperature bath are contained in a previous report (6) and are also included here as figures 1, 2, and 3. The vessels are placed horizontally in the bath and the vertical centers of both of the vessels are in the same horizontal plane as the reference planes of the piston gages, the diaphragm of the differential pressure cell, and the zero mark of the oil manometer. Thus, oil and gas head corrections are eliminated from the pressure measurements. Previous work (5, pp. 8-9) showed that any errors in our pressure measurements due to density gradients in vertically displaced tubing lines in inhomogeneous temperature environments are completely negligible.

Tubing used throughout the high-pressure system is 1/4-inch outside diameter with coned-and-threaded ends. This type tubing end preparation with associated fittings and valves was designed and described in 1929 by Dilley

[4]Manufacturers are identified to allow the reader to obtain detailed information about commercially available items. This identification should not be construed as Bureau of Mines endorsement or recommendation of any particular product or manufacturer.

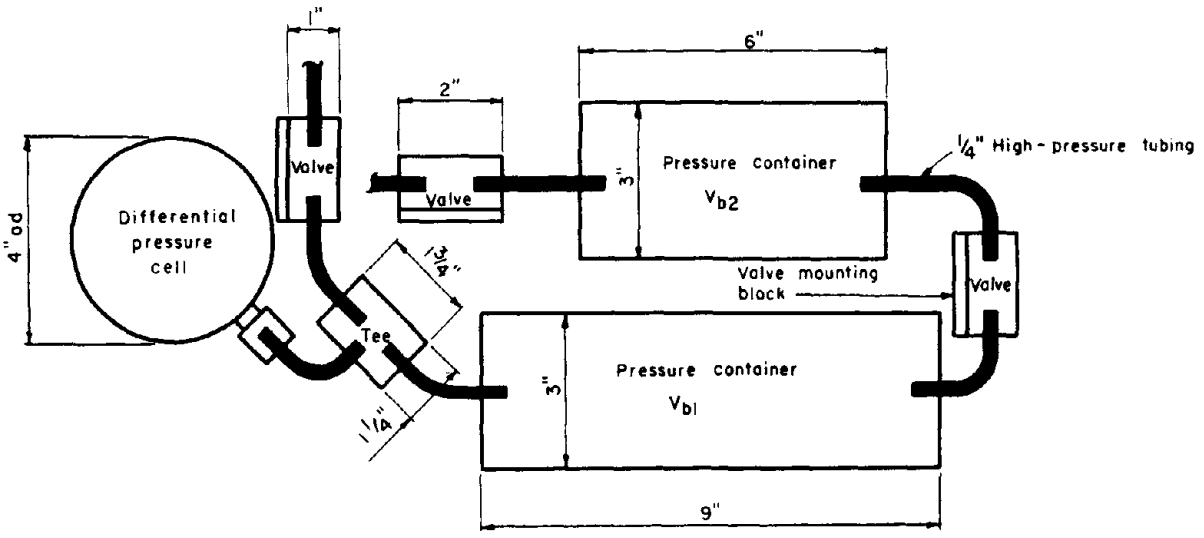

FIGURE 1. - Pressure Containers, Valves, and Fittings of a Burnett-Type Compressibility Apparatus.

and Edwards (13) of the U.S. Department of Agriculture. Pressure Products Industries, Inc., American Instrument Company, Inc., Autoclave Engineers, Inc., and High Pressure Equipment Co., Inc., all offer complete lines of high-pressure equipment which utilize many of the design concepts introduced by Dilley and Edwards.

Tubing used in the constant temperature bath and in the oil pressure lines is 1/4-inch outside diameter by 0.083-inch inside diameter type 304 cold drawn stainless steel. High-pressure tubing in the gas lines from the discharge side of the compressor to the inlet valve to the pressure vessels is 1/4-inch outside diameter by 1/16-inch inside diameter type 304 cold drawn stainless steel. All high-pressure valves, tubing, and fittings have a minimum manufacturer's working pressure rating of 2,041 atmospheres. This working pressure rating normally means a minimum burst pressure of 8,163 atmospheres. Since we limit our measurements to about 1,020 atmospheres, we operate with a fairly large factor of safety.

Two piston gages are used rather than one as used previously. This arrangement extends our pressure measurement capabilities to 1,020 atmospheres and increases the precision of the low-pressure measurements. A Ruska Instrument Corporation Model No. 2400 piston gage with the low-range piston is used for measurements in the range 0.4 to 163 atmospheres gage pressure. The weight set allows measurements in 1.4×10^{-5} atmosphere increments; however, in practice it is seldom possible to balance a pressure this precisely.

A Ruska Instrument Corporation Model No. 2450 piston gage with the intermediate range piston-cylinder assembly is used to measure the high pressures.

An American Instrument Company, Inc., Model No. 46-13425 motor-driven two-stage diaphragm compressor is used to compress the test gas from cylinder pressure to the desired starting pressure of the experimental run. The

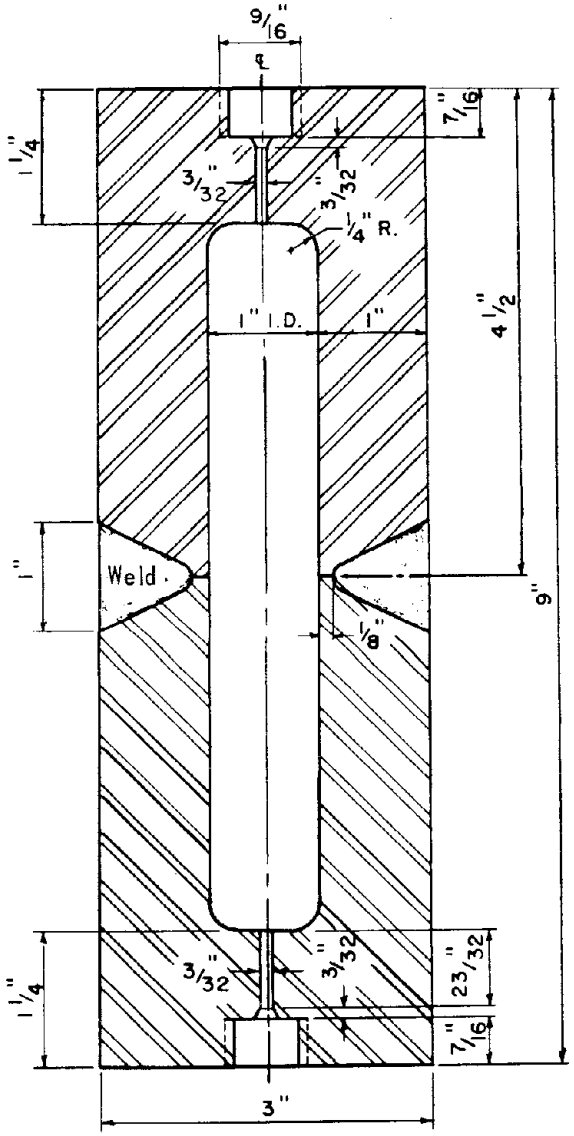

FIGURE 2. - Pressure Container, V_{b1}.

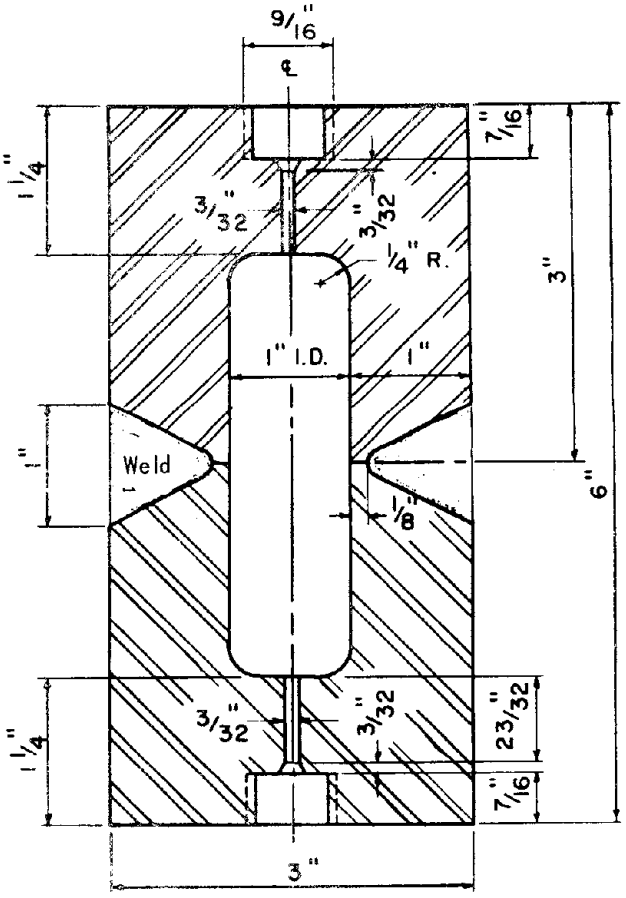

FIGURE 3. - Pressure Container, V_{b2}.

compressor has a maximum working pressure of 1,361 atmospheres with a minimum suction pressure of 23.8 atmospheres. The volumetric displacement is about 2.2 cm^3 per stroke. The compressor output rate is well suited for filling a pressure vessel of the size (82 cm^3) used in this work. About 5 to 10 minutes are required to fill volume V_1 of the compressibility apparatus to the maximum pressure used. The Model No. 46-13425 compressor is somewhat difficult to purge with the test gas. Lines can be evacuated with vacuum pumps to the discharge check valve or to the inlet check valve. Vacuums applied to the outlet or inlet apparently do not evacuate the line connecting the two stages or the spaces between the diaphragms and compressor heads; thus it seems that the only way to purge this compressor is a series of pressure purges.

The Mueller bridge null detector used previously was replaced with a Keithley Instruments, Inc., Model No. 147 nanovolt null detector. It has

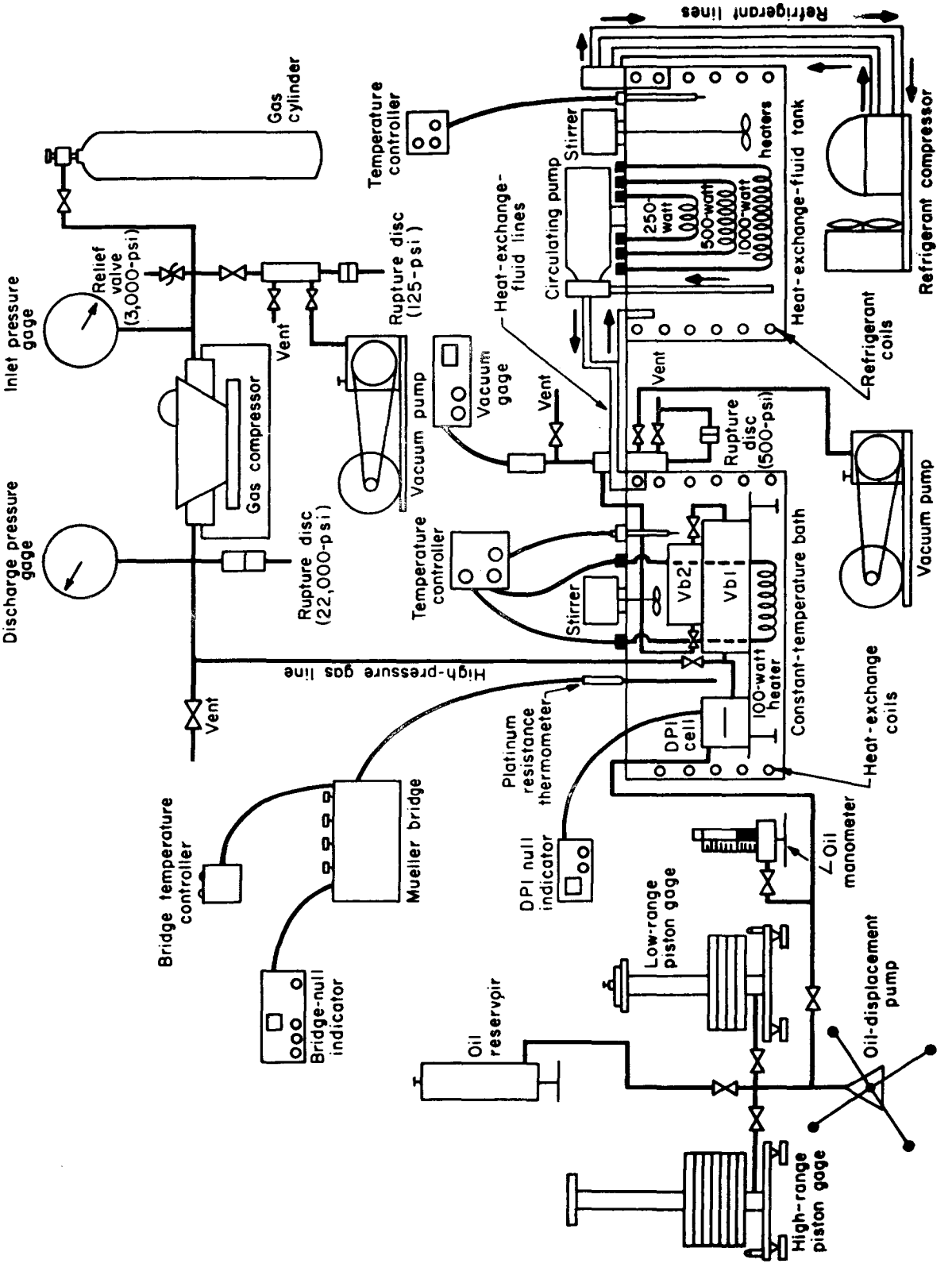

FIGURE 4. - Compressibility Apparatus.

16 overlapping ranges from 30 nanovolts full scale to 100 millivolts. The builtin battery pack permits complete isolation from ac powerlines. A zero suppression circuit of up to 100 microvolts permits compensation for thermal emf's. High resolution and stability of the Model No. 147 null detector made possible the recalibration of the G-2 Mueller bridge and a more accurate determination of the ice point resistance of the platinum resistance thermometer.

Other equipment was essentially the same as that used previously (5). A line drawing of the 1,000 atmosphere compressibility apparatus is included as figure 4.

INSTRUMENT CALIBRATIONS

The accuracy of any physical measurement is dependent upon the accuracy of the calibrations of the instruments used to determine the property. Calibration data are included because of their direct bearing on the final accuracy of the compressibility data and because the information is of value to those scientists and engineers who critically evaluate data subsequent to its original publication.

The piston gage used for the high-pressure measurements was Ruska Instrument Corporation (RIC) gage Model No. 2450.2, serial No. 14860. The gage was calibrated at the National Bureau of Standards (NBS) under identification Nos. P-7188 B and G-38657, dated July 23, 1968. Piston-cylinder number is HC-400. Reference temperature is 25.0° C and the reference level is 14.4 inches above the base plate.

Values for the piston gage calibration constants reported by NBS are:

A_o = effective area at atmospheric pressure,

= 0.0260400 in^2 with 31 ppm random error and 40 ppm systematic error for a total uncertainty of 71 ppm;

b = pressure coefficient of area,

= -1.65×10^{-8} psi^{-1} with a random error of 0.18×10^{-8} psi^{-1} and 0.20×10^{-8} psi^{-1} systematic error for a total uncertainty of 0.38×10^{-8} psi^{-1}.

The following statement is quoted from the report of calibration for this gage:

> "Ten observations were obtained at seven pressures throughout the pressure range. The coefficients A_o and b were determined by fitting a quadratic equation in pressure to the calibration data by the method of least squares. The uncertainty from random sources is taken as three times the standard deviation of the coefficients, as determined by statistical analysis of the data. The uncertainty from systematic sources represents our estimate of the bounds of errors systematic to this calibration.

"The standard deviation of an individual observation about the quadratic equation was computed to be the pressure equivalent of 0.10 psia. This precision is a measure of the performance of both the standard instrument and the test instrument under the conditions of this particular calibration. The user of this instrument must make his own determination of precision of calibrations performed in his own laboratory."

The piston gage used for the low-pressure, below 163 atmospheres, measurements was Ruska Instrument Corporation gage Model No. 2400.26, serial No. 13920. The gage was calibrated at RIC under job No. A-8593/C-8331 dated June 18, 1968. Reference temperature is 23° C and reference level is 7.90 inches below the top loading edge of the weight table.

Values reported by RIC are:

$A_o = 0.130211$ in^2 and

$b = -8.3 \times 10^{-9}$ psi^{-1}.

Pistons and cylinders for both gages are of tungsten carbide with:

a = temperature coefficient of area = 9.1×10^{-6} °C^{-1}.

The weight set for piston gage serial No. 14860 is designated as serial No. 14899. The weight set was calibrated at the NBS under test No. 212.31/G38736 dated April 26, 1968, and the material contained in the report of calibration is recorded in table 1.

TABLE 1. - Piston gage weight set calibration data

Designation	Mass, pounds	Uncertainty, pound	Assumed density, grams cm^{-3}
SET SERIAL NO. 14899			
Piston HC-400	0.0452685	0.0000014	13.0
Weight table	.7618632	.0000014	7.9
Weight A	26.036227	.000025	7.8
Weight B	26.036043	.000050	7.8
Weight C	26.036278	.000050	7.8
Weight D	26.035740	.000050	7.8
Weight E	26.036132	.000050	7.8
Weight F	26.036132	.000050	7.8
Weight G	26.036246	.000050	7.8
Weight H	26.036335	.000050	7.8
Weight I	26.036043	.000050	7.8
Weight J	26.035759	.000050	7.8
Weight K	26.036119	.000050	7.8
Weight L	26.036144	.000050	7.8
Weight M	26.036018	.000050	7.8
Weight N	26.035752	.000050	7.8
Weight O	26.036277	.000050	7.8

TABLE 1. - Piston gage weight set calibration data--Continued

Designation	Mass, pounds	Uncertainty, pound	Assumed density, grams cm^{-3}
SET SERIAL NO. 14899--Continued			
Weight P	26.036094	0.000050	7.8
Weight Q	26.035979	.000050	7.8
Weight R	26.036049	.000050	7.8
Weight S	26.036138	.000050	7.8
Weight T	13.018159	.000025	7.8
Weight U	5.2072248	.0000073	7.8
Weight V	5.2071828	.0000073	7.8
Weight W	2.6036816	.0000073	7.8
Weight X	1.3017546	.0000073	7.8
Weight Y	.5206955	.0000014	7.8
Weight Z	.5206921	.0000014	7.8
Weight A′	.2603715	.0000014	7.8
Weight B′	.1301890	.0000014	7.8
Weight C′	.0520978	.0000014	7.8
Weight D′	.0520981	.0000014	7.8
Weight E′	.0260469	.0000014	7.8
Weight F′	.0130251	.0000014	7.8
Weight $\bar{A}$	.0052064	.0000014	7.8
Weight $\bar{A}$′	.0052088	.0000014	7.8
Weight $\bar{B}$	.0026128	.0000014	7.8
Weight $\bar{C}$	.0013047	.0000014	7.8
Weight $\bar{D}$	.00052251	.00000095	7.8
Weight $\bar{D}$′	.00052252	.00000095	7.8
Weight $\bar{E}$	.00025890	.00000095	7.8
Weight $\bar{F}$	.00013507	.00000095	7.8
Weight $\bar{G}$	.00005284	.00000034	7.8
Weight $\bar{G}$′	.00005249	.00000034	7.8
Weight $\bar{H}$	.00002649	.00000034	7.8
SET SERIAL NO. 16369[1]			
Piston LC-347	0.2107048	-	15.0
Weight table	.5703663	-	7.8
Weight A	26.036256	-	7.8

[1]Weights B through H of weight set serial No. 16369 are the same as those of weight set serial No. 14899.

The following statement is quoted from the NBS report of calibration for weight set No. 14899:

> "The uncertainty figure is an expression of the overall uncertainty using three standard deviations as a limit to the effect of random errors of measurement, plus the systematic errors, assuming the density is correct within 1%. Test condition: mass computed using air density 1.16 mg cm^{-3}.

"The National Bureau of Standards uses the following relationship between the metric unit of mass and the U.S. customary unit of mass: one pound (avoirdupois) equals 0.45359237 kilogram."

The weight set used with piston gage serial No. 13920 is designated as serial No. 16369. Weights B through $\bar{H}$ of weight set serial No. 16369 are the same as those of weight set serial No. 14899. Other weights in the set were calibrated at RIC and are listed in table 1. Weights were given by RIC as mass in air against brass standards and were adjusted to values closer to their true masses before recording in table 1 by assuming a density closer to their true density and then using the relationship:

$$M_m = M_a \left(\frac{1 - \frac{\rho_a}{\rho_b}}{1 - \frac{\rho_a}{\rho_m}} \right), \qquad (1)$$

where M_m = true mass of weights;

M_a = apparent mass of weights in air against brass standards;

ρ_a = 0.0012 gram cm^{-3} = density of air under "normal conditions;"

ρ_b = 8.4 grams cm^{-3} = density of "normal brass;"

and ρ_m = true density of weights, grams cm^{-3}.

A Leeds & Northrup Company (L&N) G-2 Mueller bridge, serial No. 1603629, is used to measure the resistance of L&N platinum resistance thermometer (PRT), serial No. 1586182, in the determination of temperature in the constant temperature bath. The bridge was recalibrated at the Helium Research Center (7). For the recalibration, and L&N type 8070-B, serial No. 1192371, standard resistor was sent to the NBS for calibration. The NBS provided a value of 10.00965 legal ohms for the resistance at 25.0° C with a resistance uncertainty of 0.0004 percent.[5] The standard resistor was connected to the bridge with No. 10 gage copper wire in the manner used for a four lead platinum resistance thermometer (PRT).

Resistance of the standard was measured by setting the 1-ohm decade in the 10 ohm (X) position and adjusting the lower decades to balance the null detector. The Mueller bridge decades were intercompared as outlined in the manufacturer's directions. Corrections to be applied at each dial reading were computed from the intercomparison data and the value measured at the X position of the 1-ohm decade as determined with the standard resistor.

Dial reading corrections are listed in table 2. The corrections are added algebraically to the dial readings to obtain the true resistance in legal ohms. The 0.0001-ohm decade was checked by deflections of the null detector and no corrections were indicated.

---

[5]National Bureau of Standards. Report of Calibration. Test No. 211.01/G-39946, Reference PO491399, Dec. 3, 1968.

TABLE 2. - Mueller bridge, serial No. 1603629, dial reading corrections

Reading	Correction	Reading	Correction	Reading	Correction
10 dial		1 dial		0.1 dial	
10	-0.00020	1	+0.00001	0.1	-0.00001
20	-.00033	2	+.00001	.2	-.00001
30	-.00054	3	+.00001	.3	.00000
40	-.00065	4	+.00001	.4	.00000
50	-.00076	5	+.00001	.5	.00000
60	-.00084	6	+.00001	.6	.00000
70	-.00099	7	+.00001	.7	.00000
80	-.00113	8	+.00001	.8	-.00001
90	-.00134	9	+.00001	.9	-.00001
X0	-.00155	X	+.00001	.X	-.00001
0.01 dial		0.001 dial		0.0001 dial	
0.01	0.00000	0.001	0.00000	0.0001	0.00000
.02	.00000	.002	+.00001	.0002	.00000
.03	+.00001	.003	+.00001	.0003	.00000
.04	+.00001	.004	+.00001	.0004	.00000
.05	+.00001	.005	+.00001	.0005	.00000
.06	+.00001	.006	+.00001	.0006	.00000
.07	+.00001	.007	.00000	.0007	.00000
.08	+.00001	.008	.00000	.0008	.00000
.09	+.00001	.009	.00000	.0009	.00000
.0X	+.00001	.00X	.00000	.000X	.00000

Platinum resistance thermometer serial No. 1586182 was calibrated at the National Bureau of Standards under test No. G39579, reference No. 221.11/G-39579 dated September 1968. Calibration was in terms of the 1948 International Practical Temperature Scale (IPTS-48) for the temperature range -183° to 500° C; therefore, temperatures determined with this PRT are in terms of the IPTS-48. A thermometer current of 1 milliampere was used in the calibration, and parameters as measured at the NBS are:

$$\alpha = 3.9260713 \times 10^{-3} \qquad \beta = 0.1105405$$

$$\delta = 1.4917859 \qquad R_o = 25.5450$$

The interpolation table supplied with the calibration is not included here because of the length of the document and because it can be reproduced with the parameters listed above and equation 2 for temperatures above 0° C and equation 3 for temperatures below 0° C.

$$R_t = R_o \left[1 + \alpha t - \alpha\delta \left(\frac{t}{100} - 1 \right) \frac{t}{100} \right] \tag{2}$$

and

$$R_t = R_o \left[1 + \alpha t - \alpha\delta \left(\frac{t}{100} - 1 \right) \frac{t}{100} - \alpha\beta \left(\frac{t}{100} - 1 \right) \left(\frac{t}{100} \right)^3 \right], \tag{3}$$

where α, δ, and β = calibration constants;

R_o = PRT resistance at 0° C;

R_t = PRT resistance at temperature t;

and t = temperature IPTS-48, ° C.

For maximum accuracy, the PRT resistance at 0° C, R_o, should be measured with the bridge used in the temperature determinations.

A commercially available (Trans-Sonics, Inc.) triple point of water cell was used to determine the resistance of PRT, serial No. 1586182 at the triple point of water (7). The manufacturer claims that the triple point of water cell (TPWC) establishes a defining point of the International Practical Temperature Scale with an accuracy of better than 0.0005° C.

An ice mantle was frozen around the TPWC thermometer well with dry ice in accordance with the manufacturer's instructions, alcohol was placed in the thermometer well, the cell was placed in its insulating jacket, and the triple point of water resistance of the PRT was measured with the bridge commutator in the N and then the R positions. Resistance measurements were made about every 10 minutes until the ice mantle began to float. A constant current of 1 milliampere was supplied through the thermometer for the triple point measurements, and time was allowed for the reading to become constant before the resistances were recorded. A total of 44 triple point determinations were made during 3 days and the average value is:

$$R_T = 25.54593 \pm 0.000004 \text{ legal ohms},$$

where R_T = PRT resistance at the triple point of water.

By definition, the ice point of water is 0.01 degree below the triple point; therefore, to obtain the ice point resistance we take:

$$R_o = \frac{R_T}{1.00003984} = 25.54491 \pm 0.000004 \text{ legal ohms}.$$

The number 1.00003984 is obtained from the interpolation table supplied in conjunction with the NBS calibration for PRT serial No. 1586182.

The same barometer (Henry J. Green Instruments, Inc., serial No. 13346) was used in this work as was used previously (4-5), and the May 12, 1964, NBS calibration of this barometer is applicable.

A Ruska Instrument Corporation Model No. 2416.1, serial No. 9032, differential pressure cell and indicator were used to separate the oil of the pressure measuring system from the sample gas in the compressibility apparatus, and to indicate when the sample pressure on the lower side of the diaphragm was balanced by oil pressure. Unfortunately, the zero of the instrument changes with increasing pressure and a null indication of the electronic meter does not indicate true equality of pressure on both sides of the diaphragm.

The zero shifts in a systematic way and the manufacturer provides a calibration to correct pressure measurements for the effect. Details of the calibration procedure are available from RIC.

Differential pressure cell and indicator serial No. 9032 were last calibrated on September 15, 1967, at ambient temperature. A linear least squares fit of the calibration data gives:

$$C_d = (1.121 \pm 0.035) \times 10^{-6},$$

where C_d = differential pressure cell pressure coefficient.

REDUCTION OF EXPERIMENTAL OBSERVATIONS

Pressure:

A computer program was developed to carry out the many calculations and corrections required to obtain absolute pressure from the experimental observations.

The equation:

$$P_t = \frac{P_p}{k} + H_{fp} + P_a + P_d \qquad (4)$$

is used to calculate the total pressure at a particular level in the system

where P_t = total pressure at a selected level in the system, atmospheres;

P_p = piston gage pressure at the reference level of the piston gage, psig;

k = factor to convert pressure in psig to gage pressure in atmospheres, dependent upon the definition of the pound and inch = 14.69594876 for these data;

H_{fp} = pressure exerted by the head of pressure transmitting fluid, atmospheres;

$$H_{fp} = -\rho_{fp} \cdot h_{fp} \cdot \frac{g_l}{g_s}; \qquad (5)$$

ρ_{fp} = the density of the pressure fluid at pressure P_t;

h_{fp} = the height of the column of fluid of density ρ_{fp}, measured from the reference level of the piston gage and the reference level of the pressure system to be measured. Measurements up from the gage reference level are positive and down from the gage reference level are negative; = 0 for the data contained herein.

P_a = atmospheric pressure at the reference level of the piston gage, atmospheres;

P_d = differential pressure cell correction, atmospheres;

$$P_d = \frac{C_d P_p}{k} ;$$

where C_d = differential pressure cell coefficient = 1.121×10^{-6} for the DPC used in this work.

Atmospheric pressures (P_a) are calculated as outlined below:

R_s = uncorrected barometer scale reading, mm;

t_b = barometer temperature, ° C;

R_t = barometer reading corrected for temperature effects;

R_g = barometer reading corrected for gravity effects;

R_c = barometer reading corrected for temperature, gravity, and NBS calibration.

$$R_t = R_s + C_t ;$$

C_t = temperature correction;

$$C_t = \frac{(s-m)t_b R_s}{1+mt_b} ; \qquad (6)$$

s = linear coefficient of thermal expansion of the barometer scale, $°C^{-1}$;

$s = 18.4 \times 10^{-6}$ $°C^{-1}$ (8);

m = mean coefficient of thermal expansion of mercury, $°C^{-1}$;

$$m \times 10^8 = 18144.01 + 0.7016\ t_b + 0.0028625\ t_b^2 + 0.000002617\ t_b^3 \text{ (8)}. \qquad (7)$$

$$R_g = R_t + C_g ;$$

C_g = gravity correction to barometer reading;

$$C_g = \frac{g_l - g_s}{g_s} R_t ; \qquad (8)$$

g_l = local acceleration due to gravity, 979.4091 cm sec^{-2} (11) at the present location of the PVT laboratory;

g_s = standard acceleration due to gravity, 980.665 cm sec^{-2}.

R_c = corrected barometer reading, mm;

$R_c = R_s + C_t + C_g + 0.06$.[6]

$P_a = \frac{R_c}{760}$ = atmospheric pressure, normal atmospheres.

The basic piston gage pressure equation is:

$$P_p = \frac{\left[M_m \left(1 - \frac{\rho_a}{\rho_m} \right) + M_{fa} \left(1 - \frac{\rho_a}{\rho_{fa}} \right) \right] \frac{g_l}{g_s} + \gamma C}{A_o [1 + a(t_g - t_s)](1 + bP_p)} \quad (10), \qquad (9)$$

where P_p = piston gage pressure psig;

M_m = mass of the weights including the piston assembly, pounds;

A_o = effective area of the piston and cylinder at atmospheric pressure and at temperature t_s, in^2;

ρ_a = mean density of the air displaced by the load, grams cm^{-3};

ρ_m = density of the weights, grams cm^{-3};

ρ_{fa} = density of the pressure fluid at atmospheric pressure, grams cm^{-3};

M_{fa} = mass of the pressure fluid at atmospheric pressure contributing to the load, pounds;

γ = surface tension of the pressure fluid, pounds force per inch; = 0.000224409 pound force per inch for the Humble Oil & Refining Company "Univis 40" oil used in this work;

C = circumference of the piston assembly in inches at the surface; = 0.571 inch for piston gage serial No. 14860, piston assembly No. HC-400; = 1.279 inches for piston gage serial No. 13920, piston assembly No. LC-347;

a = fractional change in effective area per unit change in temperature;

b = fractional change in effective area with unit change in pressure;

---

[6] National Bureau of Standards calibration correction for barometer serial No. 13346, May 12, 1964. NBS identification No. P7068. Numerical value of correction is applicable only to barometer serial No. 13346.

g_l = local acceleration due to gravity;

g_s = standard acceleration due to gravity;

t_g = temperature of the piston and cylinder;

t_s = reference temperature of the piston and cylinder.

The density of air is calculated as follows (2):

$$\rho_a = \rho_o \cdot \frac{T_o}{T} \cdot P_a \, (1 - 0.37807\, y) \, \frac{Z_o}{Z}; \tag{10}$$

$\rho_o = 1.2932$ grams liter^{-1};

$T_o = 273.15$;

$T = 273.15 + t_b$;

$$\frac{Z_o}{Z} = 1 - 0.000602\,(P_a - 1) + (0.00254\, y + 0.0758\, y^2)\, P_a - (0.0000105) + 0.0000131\, y + 0.00131\, y^2)\, t_b\, P_a. \tag{11}$$

Assume

$$y = \frac{P_s \times H}{P_a}, \tag{12}$$

P_s = vapor pressure of liquid water;

H = relative humidity expressed as a decimal fraction.

P_s is calculated from the equation

$$\log_{10} P_s = -3.142305 \left(\frac{10^3}{T'} - \frac{10^3}{373.16} \right) + 8.2 \log_{10} \left(\frac{373.16}{T'} \right) - 0.0024804\,(373.16 - T') \quad (15), \tag{13}$$

where $T' = 273.16 + t_b$.

The density of air calculated with equations 10, 11, 12, and 13 is in grams liter^{-1} and is divided by 1.000028×10^3 to convert from grams liter^{-1} to grams cm^{-3}.

Approximate piston gage pressures are computed with equation 9 by setting b equal to zero. Then the approximate piston gage pressure is substituted back into equation 9 and a new piston gage pressure is calculated while using the correct value of b. The iteration procedure is continued until the change of P_p is less than 6.8×10^{-9} atmosphere.

Substituting the experimental observations, along with the calibration data for the piston gage and weight set used, into the above equations ultimately gives the absolute pressures for a compressibility run.

Temperature:

Temperatures are calculated from the measured resistance of the platinum resistance thermometer by use of the interpolation table supplied with the instrument calibration.

Temperatures of the isotherms are the reported nominal temperatures to ±0.005° C in terms of the 1948 International Practical Temperature Scale. Corrections of -0.008° and -0.010° C are applied to the 25° and 50° C temperatures, respectively, to convert to the International Practical Temperature Scale of 1968 (1). The number 273.15 is added to obtain the temperature on the Thermodynamic Temperature Scale (TTS) in Kelvins.

INTERCOMPARISONS OF PISTON GAGES

It is of obvious interest to know if pressures measured with piston gage serial No. 14860 are the same as those measured with piston gage serial No. 13920. To answer this question the piston gages were compared in two different ways. First the gages were cross-floated. Cross-floating is a rather tedious procedure as both piston gages are directly connected with oil lines and the weights on one of the gages must be adjusted until both gages are sinking at their normal rate. All indications of balance are visual. After cross-floating, the gages were intercompared over their overlapping pressure range by filling volume V_1 of the compressibility apparatus to some gas pressure, controlling the bath temperature and measuring the pressure of the confined gas with both piston gages. This method of intercomparison takes advantage of the sensitivity of the differential pressure indicator in the determination of pressure balance.

Results of the intercomparisons are contained in tables 3 and 4. Pressures recorded are gage pressures in atmospheres. Material contained in table 3 is plotted as figure 5. Examination of the tabular material and the illustration shows that pressures measured with the two piston gages agree quite well at the maximum pressures, the differences being less than 0.001 percent. Pressure differences are less than 0.01 percent down to less than 30 atmospheres. Floating the gages together, and measuring the same pressure with the gages gave essentially the same results, as can be established by an examination of the tabular material.

TABLE 3. - Comparison of gas pressures measured with piston gage serial No. 14860 and piston gage serial No. 13920

Gage No. 14860 pressure, atm	Gage No. 13920 pressure, atm	ΔP, atm (13920-14860)	$\frac{\Delta P}{P} \times 100$
COMPARISON NO. 1			
163.95485	163.95374	-0.00111	-0.00068
130.34854	130.34917	+.00063	+.00048
108.13003	108.13119	+.00116	+.0011
69.13154	69.13323	+.00169	+.0024
31.37824	31.38030	+.00206	+.0066
3.13967	3.14112	+.00145	+.046
COMPARISON NO. 2			
166.01864	166.01728	-0.00136	-0.00082
	136.45344		
100.02286	100.02443	+.00157	+.0016
69.83067	69.83197	+.00130	+.0019
35.99861	36.00125	+.00264	+.0073
2.36340	2.36457	+.00117	+.049
COMPARISON NO. 3			
166.16694	166.16591	-0.00103	-0.00062
137.96555	137.96654	+.00099	+.00072
100.91412	100.91628	+.00216	+.0021
67.22437	67.22648	+.00211	+.0031
35.37064	35.37347	+.00283	+.0080
4.38163	4.38303	+.00140	+.032
COMPARISON NO. 4			
167.17398	167.17341	-0.00057	-0.00034
134.57913	134.57927	+.00014	+.00010
101.45246	101.45446	+.00200	+.0020
69.09556	69.09722	+.00166	+.0024
33.94689	33.94922	+.00233	+.0069
3.22010	3.22137	+.00127	+.039

Some investigators have made a practice of discarding all pressures measured below some arbitrarily established minimum pressures. The reasons, if given, for discarding the pressures are generally vague. The following work was done to provide some indication of the reliability of low pressures measured with an oil-lubricated piston gage.

TABLE 4. - Piston gage serial No. 14860 floated against piston gage serial No. 13920

Gage No. 14860 pressure, atm	Gage No. 13920 pressure, atm	ΔP, atm (13920-14860)	$\frac{\Delta P}{P} \times 100$
COMPARISON NO. 1			
165.16888	165.16746	-0.0014	-0.00086
137.99110	137.99120	+.00010	+.000072
104.02434	104.02542	+.0011	+.0010
70.04796	70.05056	+.0026	+.0037
36.08162	36.08374	+.0021	+.0059
2.10648	2.10732	+.00084	+.040
COMPARISON NO. 2			
165.17093	165.17043	-0.00050	-0.00030
137.99187	137.99252	+.00065	+.00047
104.02437	104.02594	+.0016	+.0015
70.04810	70.05040	+.0023	+.0033
36.08152	36.08363	+.0021	+.0058
2.10646	2.10771	+.0013	+.059
COMPARISON NO. 3			
165.16888	165.16868	-0.00020	-0.00012
137.99122	137.99132	+.00010	+.000072
104.02452	104.02560	+.0011	+.0010
70.04804	70.05034	+.0023	+.0033
36.08173	36.08386	+.0021	+.0059
2.10649	2.10774	+.0013	+.059
COMPARISON NO. 4			
165.17110	165.17022	-0.00088	-0.00053
137.99213	137.99253	+.00040	+.00029
104.02447	104.02613	+.0017	+.0016
70.04797	70.05020	+.0022	+.0032
36.08155	36.08370	+.0022	+.0060
2.10646	2.10811	+.0017	+.078

We have a Ruska Instrument Corporation Model No. 2465 gas-lubricated piston gage, serial No. 10682. The gage has two piston-cylinder assemblies. The low-range assembly No. L-42 is for the range 0.014 to 1.020 atmospheres gage pressure, and the high-range assembly No. V-38 is for the range 0.136 to 40.8 atmospheres gage pressure. A weight set serial No. 10426 was purchased with the gage. Gage and weight set were calibrated at the NBS under identification numbers P7161 and 212.31/G37822.

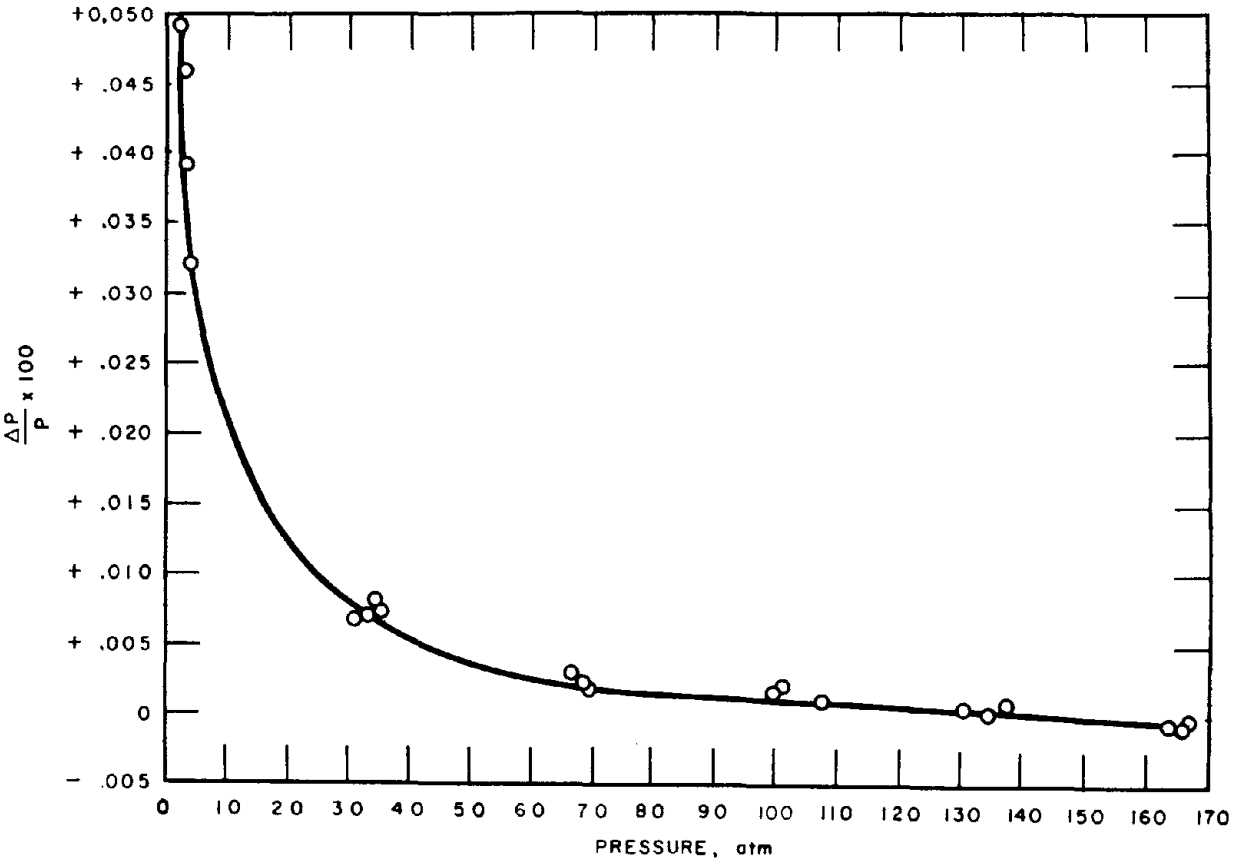

FIGURE 5. - Percentage Pressure Difference Versus Pressure, Piston Gages Serial Numbers 14860 and 13920, $\Delta P = P_{13920} - P_{14860}$.

Gas-lubricated piston gage serial No. 10682 was compared with oil-lubricated piston gages serial Nos. 14860 and 13920 over their overlapping pressure ranges. For the comparison, the gas gage was connected on the gas side of the thermostated differential pressure cell and the oil gages were connected to the oil side of the cell. The differential pressure cell pressure correction is applied and the results recorded in tables 5 and 6. Results are plotted as figures 6 and 7. A study of tables 5 and 6 and figures 6 and 7 indicates no reason to discard any of the low pressures measured with piston gage serial No. 13920 except perhaps those below 1 atmosphere gage pressure. There is an obvious systematic difference in the calibration of gage 13920 and that of 10682.

TABLE 5. - Gas piston gage serial No. 10682 versus oil piston gage serial No. 14860, $\Delta P = P_{10682} - P_{14860}$

Nominal gage P, atm	$\frac{\Delta P}{P} \times 100$						
	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Comp. 5	Comp. 6	Average
40.8	+0.0168	+0.0165	+0.0170	+0.0181	+0.0172	+0.0186	+0.0174
37.4	+.0164	+.0174	+.0160	+.0176	+.0174	+.0191	+.0173
34.0	+.0180	+.0195	+.0178	+.0186	+.0185	+.0203	+.0188
30.6	+.0181	+.0207	+.0182	+.0193	+.0196	+.0207	+.0194
27.2	+.0191	+.0219	+.0197	+.0216	+.0204	+.0216	+.0207
23.7	+.0193	+.0234	+.0194	+.0212	+.0207	+.0231	+.0212
20.4	+.0203	+.0215	+.0202	+.0218	+.0226	+.0231	+.0216
17.0	+.0204	+.0271	+.0213	+.0246	+.0241	+.0268	+.0241
13.6	+.0231	+.0270	+.0244	+.0282	+.0268	+.0328	+.0271
11.9	+.0222	+.0281	+.0256	+.0286	+.0280	+.0309	+.0272
10.2	+.0267	+.0353	+.0284	+.0318	+.0297	+.0289	+.0301
8.5	+.0320	+.0405	+.0337	+.0389	+.0347	+.0410	+.0368
6.8	+.0374	+.0448	+.0391	+.0455	+.0388	+.0441	+.0416
6.1	+.0419	+.0512	+.0427	+.0465	+.0435	+.0492	+.0458
5.4	+.0420	+.0524	+.0453	+.0490	+.0422	+.0493	+.0467
4.8	+.0488	+.0576	+.0494	+.0535	+.0426	+.0499	+.0503
4.1	+.0583	+.0708	+.0581	+.0628	+.0629	+.0548	+.0613
3.4	+.0671	+.0757	+.0683	+.0669	+.0665	+.0602	+.0675
2.7	+.0843	+.0918	+.0873	+.0835	+.0797	+.0798	+.0844
2.2	+.1082	+.1122	+.1027	+.1061	+.0947	+.0885	+.1021

TABLE 6. - Gas piston gage serial No. 10682 versus oil piston gage serial No. 13920, $\Delta P = P_{10682} - P_{13920}$

Nominal gage P, atm	$\frac{\Delta P}{P} \times 100$				
	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Average
40.8	+0.0114	+0.0131	+0.0115	+0.0110	+0.0118
37.4	+.0104	+.0127	+.0107	+.0113	+.0113
34.0	+.0106	+.0129	+.0108	+.0110	+.0113
30.6	+.0102	+.0129	+.0106	+.0108	+.0111
27.2	+.0109	+.0125	+.0102	+.0113	+.0112
23.7	+.0098	+.0122	+.0102	+.0105	+.0107
20.4	+.0102	+.0126	+.0094	+.0107	+.0107
17.0	+.0087	+.0113	+.0094	+.0096	+.0098
13.6	+.0100	+.0134	+.0105	+.0122	+.0115
11.9	+.0102	+.0118	+.0110	+.0132	+.0116
10.2	+.0099	+.0107	+.0110	+.0103	+.0105
8.5	+.0111	+.0125	+.0128	+.0112	+.0119
6.8	+.0079	+.0095	+.0141	+.0125	+.0110
6.1	+.0077	+.0158	+.0122	+.0112	+.0117
5.4	+.0081	+.0123	+.0122	+.0121	+.0112
4.8	+.0015	+.0125	+.0133	+.0130	+.0101
4.1	+.0059	+.0184	+.0182	+.0148	+.0143
3.4	+.0009	+.0163	+.0186	+.0147	+.0126
2.7	-.0044	+.0208	+.0158	+.0186	+.0127
2.0	+.0019	+.0187	+.0093	+.0261	+.0140
1.4	+.0062	+.0211	+.0168	+.0315	+.0189
.7	-.0054	+.0459	+.0473	+.0566	+.0361

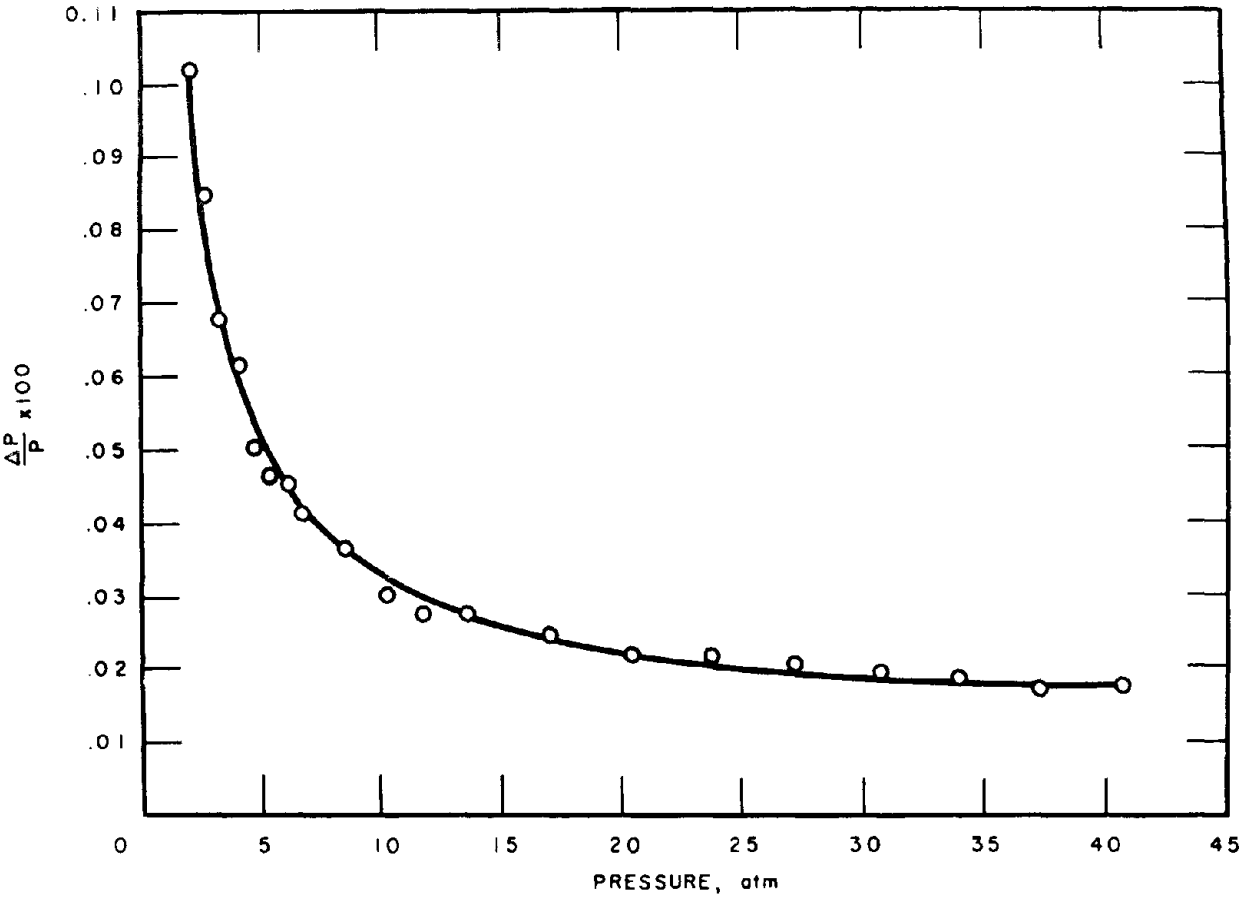

FIGURE 6. - Percentage Pressure Difference Versus Pressure, Piston Gages Serial Numbers 14860 and 10682, $\Delta P = P_{10682} - P_{14860}$.

EXPERIMENTAL PROCEDURE

The temperature of the fluid in the heat-exchange fluid tank was adjusted and the temperature controllers were set so that the temperature in the constant temperature bath was controlled at the desired value.

The valve between V_1 and V_2 and the vent valves from V_2 were opened so that the gas side of the differential pressure cell (DPC) was open to atmospheric pressure. Valves to the oil manometer were opened and the level of the oil in the manometer was set at the zero of the manometer scale which corresponds to the reference planes of both piston gages, the level of the diaphragm of the DPC, and the vertical centers of vessels V_{b_1} and V_{b_2}. The electronic meter of the DPC was set to read zero while atmospheric pressure was applied to both sides of the diaphragm.

A cylinder containing the gas to be investigated was attached to the inlet of the gas compressor. Lines between the cylinder valve and the compressor inlet check valve were evacuated and purged several times with

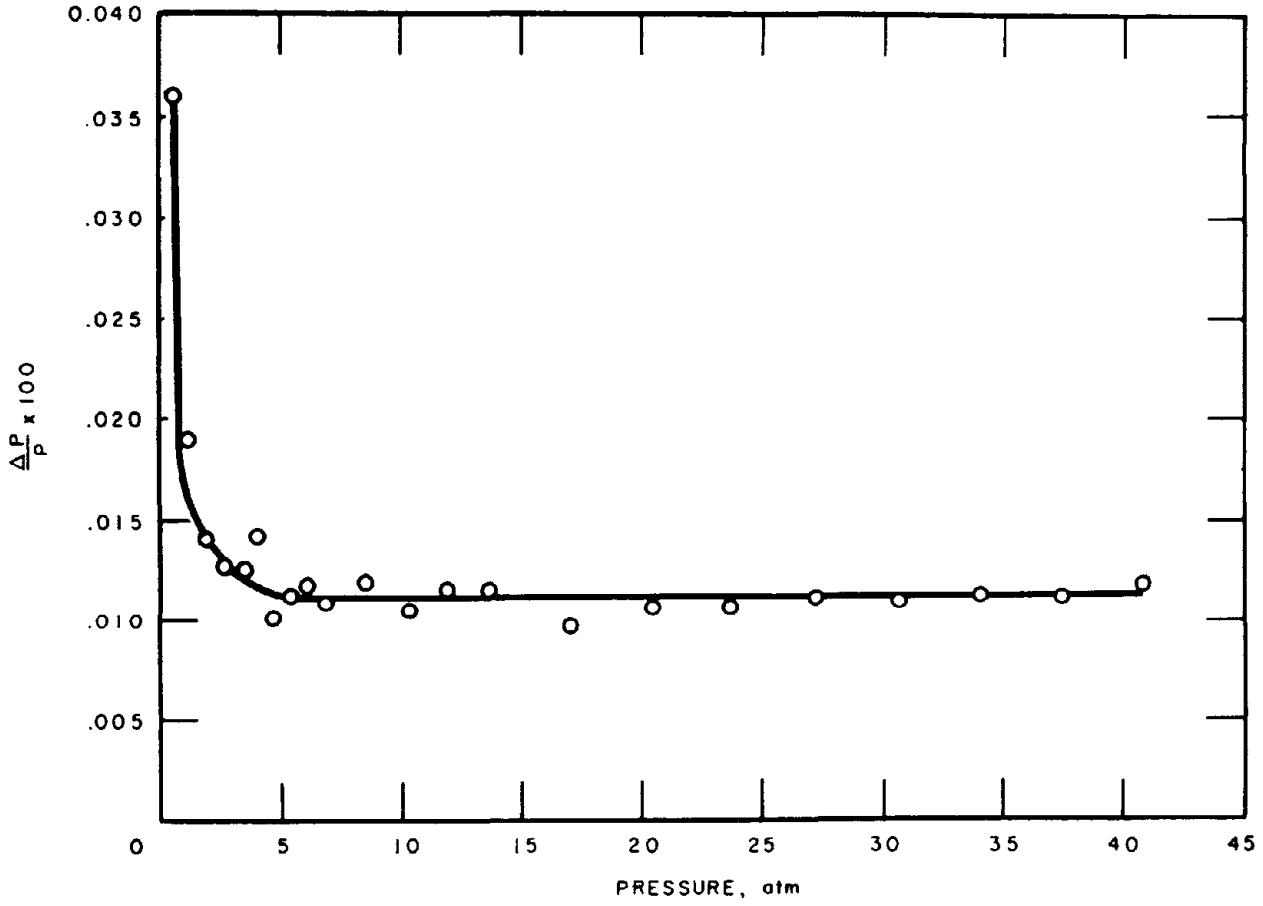

FIGURE 7. - Percentage Pressure Difference Versus Pressure, Piston Gages Serial Numbers 13920 and 10682, $\Delta P = P_{10682} - P_{13920}$.

cylinder gas. Gas volumes V_1 and V_2 and the lines to the discharge check valve of the compressor were evacuated and purged several times. The compressor was operated during the pressure purges.

Volume V_1 was filled with gas to the maximum desired pressure while maintaining overpressure on the oil side of the DPC with the oil displacement pump. Volume V_2 was evacuated. Time was allowed for the gas in V_1 to reach temperature equilibrium. Then the pressure was measured by use of the high-range piston gage. Weights on the piston gage, piston gage temperature, barometer temperature and reading, relative humidity, and the resistance of the PRT were observed and recorded.

Gas in V_1 was expanded into an evacuated V_2. Pressure on the oil side of the DPC was adjusted during the expansion, maintaining a small overpressure on the oil side. Time was allowed for gas in V_1 and V_2 to reach temperature equilibrium. Next, the expansion valve between V_1 and V_2 was slowly closed while maintaining the zero indication of the DPC meter by adjusting the oil pressure with the oil displacement pump. Gas in V_2 was vented, and V_2 was

evacuated. Pressure in V_1 (which was the same in V_2 before the gas was vented) was remeasured with the high-range gage if the pressure was above 163 atmospheres or with the low-range gage if the pressure was about 163 atmospheres or below. All of the necessary data were recorded, and the expansion and measuring sequence was continued until the lowest pressure that could be measured with the low-range piston gage was reached.

The same procedure was followed for subsequent runs except that evacuation and purging of the gaslines to the inlet valve to volume V_1 was not required until data were to be taken on a gas of different composition.

COMPOSITION OF GASES USED

All composition analyses were performed by the Unit of Technical Services of the Division of Helium, U.S. Bureau of Mines, Amarillo, Tex.

One cylinder containing helium, one cylinder containing nitrogen, and nine cylinders containing helium-nitrogen mixtures were used in this experimental work. Analyses of the contents of the cylinders are reported in table 7.

TABLE 7. - Analyses of gases used

HELIUM[1]

Cylinder No.	Lab No.	H_2	CH_4	H_2O	Ne	N_2	O_2	Ar	CO_2	Total
H-1094211	LT-5462	0.12	0.00	1.1	0.26	0.16	0.05	0.00	0.01	1.7

NITROGEN[2]

Cylinder No.	Lab No.	He	Ne	H_2	O_2	Ar	Total
H-319252	-	0	0	0	0	40	40

HELIUM-NITROGEN MIXTURES

Cylinder No.	Lab No.	He[3]	N_2[3]	Ar[4]	O_2[4]
H-36959	L-6214	89.47±0.03	10.53	5	<3
709127	L-6215	79.04 ±.03	20.96	5	<3
H-143178	L-6216	69.69 ±.04	30.31	10	<3
AEC-103032	L-6217	60.09 ±.03	39.91	20	<3
H-284948	L-6218	49.24 ±.02	50.76	20	<3
J-34806	L-6219	41.02 ±.01	58.98	25	<3
H-285519	L-6220	30.99 ±.01	69.01	50	<3
J-26547	L-6221	20.53 ±.01	79.47	35	<3
H-286439	L-6222	10.67 ±.01	89.33	65	5

HELIUM[1] USED IN PREPARATION OF MIXTURES

Cylinder No.	Lab No.	H_2	CH_4	H_2O	Ne	N_2	O_2	Ar	CO_2	Total
BM-101308	LT-6123	0.01	-	1.2	0.94	0.16	0.07	<0.005	0.01	2.4
J-210201	LT-6125	.07	-	1.0	.74	.13	.06	<.005	.02	2.0
J-217228	LT-6127	.07	-	1.1	.77	.10	.05	<.005	.04	2.1
H-2424507	LT-6129	.03	-	1.4	.65	.09	.06	<.005	.04	2.3
AEC-108127	LT-6136	.03	-	1.4	.64	.08	.03	<.005	.04	2.2

NITROGEN USED IN PREPARATION OF MIXTURES

The impurities in the nitrogen used in the mixtures were below the detectable limit of the chromatograph. The detectable limits are as follows: O_2 - 15 ppm, He - 2.5 ppm, Ne - 6 ppm, and H_2 - 2 ppm.

[1] Parts per million mole-fraction impurities in helium.
[2] Parts per million mole-fraction impurities in nitrogen.
[3] Mole-percent.
[4] Parts per million mole-fraction impurities.

TREATMENT OF THE EXPERIMENTAL DATA

A general computer program (12) is available for use in the reduction of Burnett compressibility data. This program was used to treat all of the data contained herein. The data treatment used differs in at least one significant way from our previously published work (4-5). The calculated initial pressure, P_o, for each run is evaluated as an additional parameter, while previously P_o was assumed to agree exactly with the observed initial pressure. Assuming P_o exact neglected any random error associated with P_o and resulted in somewhat lower computed random errors than were justified by the precision of the measurements.

Essentially the same method was used to select a weighting factor for the pressures as was used previously (5). Ten runs were made with pure helium under replicate conditions. Results from the first two runs were inconsistent with the other eight runs. Data from the first two runs were summarily rejected. The remaining eight runs were treated simultaneously while using various weighting factors. Standard errors were fitted to the equation:

$$W_r(\delta P_r)^2 = a + bP_r, \tag{14}$$

where W_r = weighting factor;

δP_r = standard error of a single pressure residual;

a = intercept;

b = slope;

by using a least-squares method.

We assume that the correct weighting factor is that which gives a statistically insignificant slope (b). The weighting factor $P_r^{-2.45}$ meets this criterion when the eight pure helium replicate runs at 0° C are treated simultaneously. This same weighting factor is used in the data treatment for all of the other runs including the mixtures and pure nitrogen. It is used for all of the isotherms, as the weighting factor should be independent of composition and independent of temperature, provided the performance of the differential pressure indicator is not significantly temperature dependent.

The weighting factor of $P_r^{-2.45}$ differs from our previously determined (5) weighting factor because two new and different piston gages were used and because the initial pressure (P_o) of each run is not now assumed to be exact.

We found in treating the 0° C helium data that a three-parameter Leiden series gives statistically the same results in the compressibility factors as a four-parameter Berlin series. The Leiden series is preferable because it gives smaller computed standard errors in the compressibility factors, fewer parameters are required to represent the data, and the Leiden series gives a better fit of the data for pure nitrogen and helium-nitrogen mixtures than does the Berlin expansion; therefore, all data are represented as a power series in the reciprocal volume.

The criteria used to select the functional forms to represent nitrogen and helium-nitrogen mixtures were as follows. Parameters were added to the Leiden series to represent the compressibility factors for pure nitrogen at 0° C until the computed standard error in the parameter was larger than the last parameter in the series. When this occurred, the Leiden series containing one less parameter was selected.

Functional forms for the mixtures and for all of the other runs at the other temperatures were selected in the same way; except that we assume the maximum number of parameters are required to represent nitrogen at the lowest temperature of the data, and that the number of paramaters required would decrease as the helium content of the mixtures and the temperature increased. Also, in deciding the functional form to represent the mixtures, consideration was given to trends in the data set as a whole to prevent selecting an inconsistent functional form due to unusually large random errors in a particular run.

Parameters for the Leiden expansion,

$$Z_r = \frac{Z_o}{P_o} f_r N^r P_r = 1 + B\bar{V}_r^{1} + C\bar{V}_r^{2} + D\bar{V}_r^{3} + E\bar{V}_r^{4} + F\bar{V}_r^{5} + \ldots, \qquad (15)$$

are tabulated,

where Z_r = compressibility factor at P_r;

Z_o = compressibility factor at P_o;

P_o = the initial or first pressure measurement of a compressibility run, atmospheres;

P_r = pressure after the rth expansion, atmospheres;

r = expansion number;

N = isothermal zero pressure volume ratio;

f_r = factor to correct for elastic pressure distortion of the pressure vessels;

V_r = volume, cm^3/gram mole;

B = parameter evaluated from the experimental pressures, (cm^3/gram mole);

C = parameter evaluated from the experimental pressures, (cm^3/gram mole)^2;

D = parameter evaluated from the experimental pressures, (cm^3/gram mole)^3;

E = parameter evaluated from the experimental pressures, $(cm^3/gram\ mole)^4$;

F = parameter evaluated from the experimental pressures, $(cm^3/gram\ mole)^5$.

The distortion factor is:

$$f_r = f_{r-1} \frac{1 + \alpha P_r + \alpha' P_{jr}}{1 + \beta P_{r-1} + \beta' P_{jr-1}} \quad (12). \tag{16}$$

From our previous work (6),

$\alpha_0 = 1.4163 \times 10^{-6}$, atm^{-1} $\quad \alpha_0' = -2.0524 \times 10^{-6}$, atm^{-1}

$\alpha_{25} = 1.4135 \times 10^{-6}$, atm^{-1} $\quad \alpha_{25}' = -2.0482 \times 10^{-6}$, atm^{-1}

$\alpha_{50} = 1.4227 \times 10^{-6}$, atm^{-1} $\quad \alpha_{50}' = -2.0615 \times 10^{-6}$, atm^{-1}

$\beta_0 = 1.4297 \times 10^{-6}$, atm^{-1} $\quad \beta_0' = -2.0714 \times 10^{-6}$, atm^{-1}

$\beta_{25} = 1.4305 \times 10^{-6}$, atm^{-1} $\quad \beta_{25}' = -2.0726 \times 10^{-6}$, atm^{-1}

$\beta_{50} = 1.4319 \times 10^{-6}$, atm^{-1} $\quad \beta_{50}' = -2.0746 \times 10^{-6}$, atm^{-1}.

The external pressures (P_{jr} and P_{jr-1}) are the atmospheric pressures and are taken as zero for the distortion factor without introducing any significant error. The coefficients α and β are temperature dependent; therefore, the subscripts denote the temperature in ° C for which a particular coefficient is applicable. The coefficients are unique for a particular apparatus and any extensive modifications or changes in the pressure containing components could change the coefficients significantly.

EXPERIMENTAL RESULTS

Experimental pressures, calculated pressures, parameters, standard errors, variances, and covariances are recorded in tables 8, 11, and 14 for the 0°, 25°, and 50° C isotherms, respectively. Variances and covariances for integral pressures are listed in tables 9, 12, and 15. Compressibility factors and standard errors of the compressibility factors for integral pressures are contained in tables 10, 13, and 16. Results recorded in tables 8 through 16 are computer-printed in D format. The number to the left of D is to be multiplied by 10 to the exponent given to the right of D.

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. HE-0-25		
0	9.6549557D 02	9.6546972D 02	2.5855OD-02	2.67790D-05
1	5.4877525D 02	5.4874919D 02	2.6058 9D-02	4.74855D-05
2	3.2862024D 02	3.2862002D 02	2.225 97D-04	6.773 68D-07
3	2.0319391D 02	2.0320032D 02	-6.416 19D-03	-3.157 67D-05
4	1.2817067D 02	1.2817549D 02	-4.823 33D-03	-3.763 21D-05
5	8.1871596D 01	8.1874235D 01	-2.638 69D-03	-3.222 96D-05
6	5.2718977D 01	5.2720379D 01	-1.402 18D-03	-2.659 72D-05
7	3.4122803D 01	3.4123732D 01	-9.295 61D-04	-2.724 16D-05
8	2.2159632D 01	2.2160977D 01	-1.344 78D-03	-6.068 62D-05
9	1.4421884D 01	1.4423341D 01	-1.457 61D-03	-1.010 69D-04
10	9.3996731D 00	9.4006465D 00	-9.733 67D-04	-1.035 53D-04
11	6.1319156D 00	6.1326806D 00	-7.650 30D-04	-1.247 62D-04
12	4.0029842D 00	4.0031737D 00	-1.895 07D-04	-4.734 14D-05
13	2.6148052D 00	2.6141423D 00	2.629 61D-04	1.005 82D-04
14	1.7077718D 00	1.7075187D 00	2.531 40D-04	1.482 29D-04
		RUN NO. HE-0-26		
0	1.0300746D 03	1.0300169D 03	5.770 51D-02	5.602 03D-05
1	5.8128806D 02	5.8120054D 02	4.751 51D-02	8.174 68D-05
2	3.4652903D 02	3.4651251D 02	1.651 90D-02	4.766 99D-05
3	2.1368380D 02	2.1367843D 02	5.371 40D-03	2.513 73D-05
4	1.3455800D 02	1.3455391D 02	4.088 74D-03	3.038 64D-05
5	8.5857805D 01	8.5854930D 01	2.875 20D-03	3.348 79D-05
6	5.5247110D 01	5.5244976D 01	2.133 83D-03	3.862 33D-05
7	3.5742852D 01	3.5741655D 01	1.197 37D-03	3.349 96D-05
8	2.3205379D 01	2.3204906D 01	4.724 42D-04	2.035 92D-05
9	1.5100567D 01	1.5099900D 01	6.667 69D-04	4.415 52D-05
10	9.8401567D 00	9.8403838D 00	-2.271 44D-04	-2.308 34D-05
11	6.4186596D 00	6.4190317D 00	-3.720 93D-04	-5.797 05D-05
12	4.1896133D 00	4.1898713D 00	-2.579 50D-04	-6.156 89D-05
13	2.7359493D 00	2.7359647D 00	-1.539 28D-05	-5.626 12D-06
14	1.7870828D 00	1.7870510D 00	3.179 62D-05	1.779 23D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. HE-0-27		
0	1.03112430 03	1.03081130 03	3.13001D-01	3.03553D-04
1	5.81688360 02	5.81597510 02	9.08470D-02	1.56178D-04
2	3.46768350 02	3.46730510 02	3.78351D-02	1.09108D-04
3	2.13822030 02	2.13805760 02	1.62713D-02	7.60972D-05
4	1.34638980 02	1.34631290 02	7.69000D-03	5.71157D-05
5	8.59076100 01	8.59031720 01	4.43790D-03	5.16590D-05
6	5.52788640 01	5.52755510 01	3.31366D-03	5.99444D-05
7	3.57636550 01	3.57612400 01	2.41535D-03	6.75364D-05
8	2.32185650 01	2.32175390 01	1.02548D-03	4.41664D-05
9	1.51082830 01	1.51080860 01	1.97377D-04	1.30641D-05
10	9.84535630 00	9.84570370 00	-3.47319D-04	-3.52775D-05
11	6.42218890 00	6.42249560 00	-3.06720D-04	-4.77594D-05
12	4.19197500 00	4.19212960 00	-1.54573D-04	-3.68736D-05
13	2.73734540 00	2.73743820 00	-9.27609D-05	-3.38872D-05
14	1.78795390 00	1.78801300 00	-5.90411D-05	-3.30216D-05
		RUN NO. HE-0-28		
0	1.02866510 03	1.02860170 03	6.33145D-02	6.15502D-05
1	5.80540800 02	5.80493190 02	4.76063D-02	8.20034D-05
2	3.46142880 02	3.46124010 02	1.88700D-02	5.45151D-05
3	2.13455760 02	2.13451480 02	4.27838D-03	2.00434D-05
4	1.34417760 02	1.34415980 02	1.77244D-03	1.31860D-05
5	8.57708540 01	8.57689410 01	1.91262D-03	2.22991D-05
6	5.51922870 01	5.51904780 01	1.80925D-03	3.27809D-05
7	3.57094700 01	3.57067440 01	2.72597D-03	7.63374D-05
8	2.31835960 01	2.31823870 01	1.20921D-03	5.21582D-05
9	1.50857120 01	1.50853090 01	4.03758D-04	2.67642D-05
10	9.83100950 00	9.83090100 00	1.08564D-04	1.10430D-05
11	6.41270860 00	6.41285710 00	-1.48445D-04	-2.31486D-05
12	4.18582740 00	4.18584570 00	-1.83031D-05	-4.37265D-06
13	2.73328690 00	2.73333800 00	-5.10933D-05	-1.86930D-05
14	1.78523740 00	1.78533620 00	-9.88377D-05	-5.53639D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. HE-0-29		
0	1.03152740 03	1.03154490 03	-1.751510-02	-1.697970-05
1	5.81977780 02	5.81964090 02	1.368360-02	2.351230-05
2	3.46932610 02	3.46931800 02	8.045280-04	2.318980-06
3	2.13919340 02	2.13923330 02	-3.987800-03	-1.864160-05
4	1.34700040 02	1.34702740 02	-2.702570-03	-2.006360-05
5	8.59478220 01	8.59477120 01	1.101040-04	1.281060-06
6	5.53045490 01	5.53037780 01	7.702300-04	1.392710-05
7	3.57799820 01	3.57793210 01	6.605860-04	1.846240-05
8	2.32296220 01	2.32292030 01	4.196970-04	1.806730-05
9	1.51157640 01	1.51156440 01	1.206560-04	7.982140-06
10	9.85096920 00	9.85061500 00	3.541540-04	3.595120-05
11	6.42585430 00	6.42569360 00	1.606660-04	2.500300-05
12	4.19422450 00	4.19421450 00	1.000700-05	2.385900-06
13	2.73880870 00	2.73879860 00	1.007260-05	3.677720-06
14	1.78881500 00	1.78890110 00	-8.610580-05	-4.813570-05
		RUN NO. HE-0-30		
0	1.03286120 03	1.03295120 03	-8.993520-02	-8.707390-05
1	5.82649500 02	5.82666620 02	-1.711520-02	-2.937480-05
2	3.47303930 02	3.47317510 02	-1.358790-02	-3.912410-05
3	2.14139000 02	2.14148590 02	-9.583090-03	-4.475170-05
4	1.34835160 02	1.34839620 02	-4.462420-03	-3.309540-05
5	8.60333480 01	8.60330440 01	3.041970-04	3.535800-06
6	5.53588390 01	5.53578570 01	9.822860-04	1.774400-05
7	3.58148500 01	3.58139620 01	8.885140-04	2.480850-05
8	2.32520940 01	2.32515470 01	5.473840-04	2.354130-05
9	1.51302060 01	1.51301210 01	8.458910-05	5.590740-06
10	9.86033200 00	9.86002390 00	3.081110-04	3.124760-05
11	6.43176770 00	6.43182000 00	-5.229690-05	-8.131040-06
12	4.19823990 00	4.19820860 00	3.123400-05	7.439770-06
13	2.74135970 00	2.74140470 00	-4.501410-05	-1.642030-05
14	1.79060740 00	1.79060250 00	4.891210-06	2.731590-06

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. HE-0-31		
0	1.0342159D 03	1.0343993D 03	-1.8337 9D-01	-1.773120-04
1	5.8333275D 02	5.8338987D 02	-5.711480-02	-9.791130-05
2	3.4768142D 02	3.4771453D 02	-3.310940-02	-9.522900-05
3	2.1436140D 02	2.1438043D 02	-1.902270-02	-8.874130-05
4	1.3497047D 02	1.3498050D 02	-1.002810-02	-7.429860-05
5	8.6117812D 01	8.6120857D 01	-3.044 0D-03	-3.535620-05
6	5.5412972D 01	5.5413506D 01	-5.342 3D-04	-9.641670-06
7	3.5849617D 01	3.5849608D 01	8.792 8D-06	2.452540-07
8	2.3274629D 01	2.3274539D 01	9.026 6D-05	3.878410-06
9	1.5145783D 01	1.5145019D 01	7.631 1D-04	5.038500-05
10	9.8697897D 00	9.8697057D 00	8.401 7D-05	8.512000-06
11	6.4382370D 00	6.4381241D 00	1.128 6D-04	1.753360-05
12	4.2024027D 00	4.2023186D 00	8.409 5D-05	2.001180-05
13	2.7440261D 00	2.7440864D 00	-6.028 4D-05	-2.196860-05
14	1.7924167D 00	1.7923532D 00	6.348 1D-05	3.542040-05
		RUN NO. HE-0-32		
0	1.0324736D 03	1.0326865D 03	-2.129 5D-01	-2.062180-04
1	5.8246843D 02	5.8253440D 02	-6.597 0D-02	-1.132590-04
2	3.4720758D 02	3.4724493D 02	-3.735 1D-02	-1.075760-04
3	2.1408481D 02	2.1410620D 02	-2.138 5D-02	-9.987850-05
4	1.3480330D 02	1.3481387D 02	-1.056 7D-02	-7.837110-05
5	8.6013744D 01	8.6016986D 01	-3.242 2D-03	-3.769890-05
6	5.5347117D 01	5.5347681D 01	-5.639 6D-04	-1.018940-05
7	3.5807784D 01	3.5807443D 01	3.408 4D-04	9.518590-06
8	2.3247656D 01	2.3247342D 01	3.139 2D-04	1.350290-05
9	1.5128176D 01	1.5127397D 01	7.790 7D-04	5.149810-05
10	9.8585760D 00	9.8582535D 00	3.225 6D-04	3.271830-05
11	6.4306293D 00	6.4306672D 00	-3.785 7D-05	-5.887240-06
12	4.1972614D 00	4.1974571D 00	-1.956 8D-04	-4.661570-05
13	2.7410572D 00	2.7409143D 00	1.428 9D-04	5.211090-05
14	1.7903243D 00	1.7902823D 00	4.195 5D-05	2.343350-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 8.66858D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.53021941D 00	S2N	3.46887D-11	SN	5.88971D-06
B	1.20109631D 01	S2B	1.83591D-04	SB	1.35496D-02
C	1.05746769D 02	S2C	1.16218D 00	SC	1.07804D 00
D	9.89068809D 02	S2D	6.40136D 02	SD	2.53009D 01
P1	9.65469719D 02	S2P1	1.84007D-03	SP1	4.28960D-02
P2	1.03001690D 03	S2P2	2.81627D-03	SP2	5.30685D-02
P3	1.03081125D 03	S2P3	2.83287D-03	SP3	5.32247D-02
P4	1.02860174D 03	S2P4	2.78752D-03	SP4	5.27970D-02
P5	1.03154491D 03	S2P5	2.84766D-03	SP5	5.33634D-02
P6	1.03295117D 03	S2P6	2.87695D-03	SP6	5.36372D-02
P7	1.03439928D 03	S2P7	2.90749D-03	SP7	5.39212D-02
P8	1.03268648D 03	S2P8	2.87124D-03	SP8	5.35839D-02

COVARIANCES

S2BC	-1.37111D-02	S2BD	3.00753D-01
S2BP1	-3.06577D-05	S2BP2	9.38977D-05
S2BP3	9.56949D-05	S2BP4	9.07450D-05
S2BP5	9.72983D-05	S2BP6	1.00462D-04
S2BP7	1.03730D-04	S2BP8	9.98521D-05
S2BN	-6.92807D-08	S2CD	-2.68529D 01
S2CP1	3.54396D-04	S2CP2	-1.26287D-02
S2CP3	-1.28140D-02	S2CP4	-1.23038D-02
S2CP5	-1.29799D-02	S2CP6	-1.33059D-02
S2CP7	-1.36428D-02	S2CP8	-1.32432D-02
S2CN	4.49318D-06	S2DP1	1.07655D-01
S2DP2	4.51241D-01	S2DP3	4.56107D-01
S2DP4	4.42712D-01	S2DP5	4.60463D-01
S2DP6	4.69015D-01	S2DP7	4.77855D-01
S2DP8	4.67372D-01	S2DN	-9.52504D-05
S2P1P2	1.83220D-03	S2P1P3	1.83658D-03
S2P1P4	1.82458D-03	S2P1P5	1.84043D-03
S2P1P6	1.84801D-03	S2P1P7	1.85584D-03
S2P1P8	1.84653D-03	S2P1N	1.25163D-08
S2P2P3	2.41964D-03	S2P2P4	2.39811D-03
S2P2P5	2.42657D-03	S2P2P6	2.44022D-03
S2P2P7	2.45431D-03	S2P2P8	2.43757D-03
S2P2N	-2.33730D-08	S2P3P4	2.40587D-03
S2P3P5	2.43451D-03	S2P3P6	2.44824D-03
S2P3P7	2.46241D-03	S2P3P8	2.44557D-03
S2P3N	-2.38921D-08	S2P4P5	2.41273D-03

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

COVARIANCES

S2P4P6	2.42623D-03	S2P4P7	2.44017D-03
S2P4P8	2.42361D-03	S2P4N	-2.24581D-08
S2P5P6	2.45533D-03	S2P5P7	2.46958D-03
S2P5P8	2.45265D-03	S2P5N	-2.43558D-08
S2P6P7	2.48369D-03	S2P6P8	2.46658D-03
S2P6N	-2.52727D-08	S2P7P8	2.48095D-03
S2P7N	-2.62198D-08	S2P8N	-2.50967D-08

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.!	REL. ERROR IN P
		RUN NO. 90HE-10N2-0-1		
0	1.03992340 03	1.03989240 03	3.09906D-02	2.98008D-05
1	5.70064860 02	5.70015040 02	4.98236D-02	8.74000D-05
2	3.35011720 02	3.34993520 02	1.81959D-02	5.43141D-05
3	2.05054570 02	2.05047180 02	7.39149D-03	3.60465D-05
4	1.28606660 02	1.28602500 02	4.15702D-03	3.23236D-05
5	8.18736120 01	8.18716040 01	2.00833D-03	2.45296D-05
6	5.26113080 01	5.26106160 01	6.92048D-04	1.31540D-05
7	3.40088070 01	3.40083020 01	5.05820D-04	1.48732D-05
8	2.20669500 01	2.20669760 01	-2.59818D-05	-1.17741D-06
9	1.43533500 01	1.43536360 01	-2.86017D-04	-1.99268D-05
10	9.35082130 00	9.35121810 00	-3.96771D-04	-4.24317D-05
11	6.09835930 00	6.09846880 00	-1.09507D-04	-1.79568D-05
12	3.97971690 00	3.97982480 00	-1.07845D-04	-2.70988D-05
13	2.59834240 00	2.59834270 00	-2.55146D-07	-9.81958D-08
14	1.69691670 00	1.69688500 00	3.16957D-05	1.86784D-05
		RUN NO. 90HE-10N2-0-2		
0	8.99289580 02	8.99310900 02	-2.13281D-02	-2.37166D-05
1	5.02607130 02	5.02600130 02	7.00101D-03	1.39294D-05
2	2.98706540 02	2.98711370 02	-4.82936D-03	-1.61676D-05
3	1.84057870 02	1.84062040 02	-4.16249D-03	-2.26151D-05
4	1.15909140 02	1.15910290 02	-1.14324D-03	-9.86321D-06
5	7.39775440 01	7.39777450 01	-2.01196D-04	-2.71969D-06
6	4.76132330 01	4.76137740 01	-5.41428D-04	-1.13714D-05
7	3.08094140 01	3.08095630 01	-1.49046D-04	-4.83767D-06
8	2.00040400 01	2.00044850 01	-4.44979D-04	-2.22444D-05
9	1.30185880 01	1.30175750 01	1.01388D-03	7.78795D-05
10	8.48326800 00	8.48311800 00	1.50042D-04	1.76868D-05
11	5.53360520 00	5.53331820 00	1.86973D-04	3.37893D-05
12	3.61140290 00	3.61143070 00	-2.78129D-05	-7.70140D-06
13	2.35802580 00	2.35800490 00	2.09868D-05	8.90017D-06
14	1.53994180 00	1.54000520 00	-6.34057D-05	-4.11741D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.I	REL. ERROR IN P
		RUN NO. 90HE-10N2-0-3		
0	7.59761570 02	7.59809580 02	-4.800670-02	-6.318650-05
1	4.33373340 02	4.33394640 02	-2.129480-02	-4.913730-05
2	2.60650810 02	2.60661830 02	-1.102450-02	-4.229610-05
3	1.61755540 02	1.61761370 02	-5.832450-03	-3.605720-05
4	1.02308040 02	1.02310710 02	-2.669030-03	-2.608820-05
5	6.54753210 01	6.54755500 01	-2.291610-04	-3.499960-06
6	4.22146630 01	4.22140770 01	5.860780-04	1.388330-05
7	2.73460090 01	2.73456280 01	3.809080-04	1.392920-05
8	1.77680060 01	1.77679560 01	4.981490-05	2.803630-06
9	1.15673010 01	1.15674970 01	-1.961600-04	-1.695810-05
10	7.54037860 00	7.54039700 00	-1.838780-05	-2.438580-06
11	4.91928420 00	4.91935930 00	-7.507090-05	-1.526050-05
12	3.21110170 00	3.21112380 00	-2.205160-05	-6.867290-06
13	2.09686030 00	2.09680600 00	5.427640-05	2.588460-05
14	1.36951200 00	1.36949070 00	2.126790-05	1.552960-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 8.730810-09

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.530423420 00	S2N	3.645170-11	SN	6.037520-06
B	1.335518390 01	S2B	4.595680-04	SB	2.143750-02
C	1.776558090 02	S2C	1.140300 01	SC	3.376830 00
D	1.456127200 03	S2D	4.272300 04	SD	2.066960 02
E	1.516515220 04	S2E	1.540770 07	SE	3.925270 03
P1	1.039892420 03	S2P1	4.819190-03	SP1	6.942040-02
P2	8.993109030 02	S2P2	1.417860-03	SP2	3.765450-02
P3	7.598095790 02	S2P3	1.084360-03	SP3	3.292960-02

COVARIANCES

S2BC	-6.841660-02	S2BD	3.873960 00
S2BE	-6.817430 01	S2BP1	-3.214090-04
S2BP2	2.143420-04	S2BP3	2.631910-04
S2BN	-1.145910-07	S2CD	-6.845360 02
S2CE	1.251740 04	S2CP1	7.165190-02
S2CP2	-4.251040-02	S2CP3	-5.778380-02
S2CN	1.508040-05	S2DE	-8.030620 05
S2DP1	-5.516810 00	S2DP2	2.772430 00
S2DP3	4.213430 00	S2DN	-8.158950-04
S2EP1	1.261100 02	S2EP2	-4.929380 01

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

COVARIANCES

S2EP3	-8.56643D 01	S2EN	1.39377D-02
S2P1P2	1.45559D-03	S2P1P3	-2.07054D-05
S2P1N	5.75618D-08	S2P2P3	9.29282D-04
S2P2N	-4.07960D-08	S2P3N	-4.65272D-08

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 80HE-20N2-0-1		
0	1.04420870 03	1.04418210 03	2.66278D-02	2.55005D-05
1	5.56519410 02	5.56518410 02	9.95769D-04	1.78928D-06
2	3.23157980 02	3.23134680 02	2.33038D-02	7.21126D-05
3	1.96806760 02	1.96798900 02	7.85580D-03	3.99163D-05
4	1.23177910 02	1.23174490 02	3.42201D-03	2.77810D-05
5	7.83510500 01	7.83493400 01	1.71018D-03	2.18271D-05
6	5.03305470 01	5.03297370 01	8.09881D-04	1.60912D-05
7	3.25302890 01	3.25294330 01	8.56118D-04	2.63176D-05
8	2.11066930 01	2.11063370 01	3.56104D-04	1.68716D-05
9	1.37286250 01	1.37286110 01	1.36780D-05	9.96314D-07
10	8.94448490 00	8.94405270 00	4.32190D-04	4.83192D-05
11	5.83307120 00	5.83299190 00	7.92954D-05	1.35941D-05
12	3.80662250 00	3.80662560 00	-3.16557D-06	-8.31594D-07
13	2.48519270 00	2.48530010 00	-1.07406D-04	-4.32185D-05
14	1.62302960 00	1.62308500 00	-5.53802D-05	-3.41215D-05
		RUN NO. 80HE-20N2-0-2		
0	1.04246040 03	1.04245840 03	1.94671D-03	1.86742D-06
1	5.55725880 02	5.55749990 02	-2.41105D-02	-4.33857D-05
2	3.22739790 02	3.22736980 02	2.80284D-03	8.68451D-06
3	1.96571250 02	1.96573330 02	-2.08869D-03	-1.06256D-05
4	1.23034440 02	1.23039380 02	-4.93458D-03	-4.01073D-05
5	7.82614290 01	7.82657230 01	-4.29398D-03	-5.48672D-05
6	5.02739880 01	5.02769450 01	-2.95665D-03	-5.88107D-05
7	3.24935070 01	3.24956870 01	-2.18029D-03	-6.70992D-05
8	2.10830780 01	2.10845960 01	-1.51786D-03	-7.19940D-05
9	1.37135890 01	1.37145340 01	-9.45107D-04	-6.89175D-05
10	8.93431010 00	8.93490900 00	-5.98914D-04	-6.70353D-05
11	5.82699300 00	5.82704030 00	-4.72208D-05	-8.10380D-06
12	3.80275520 00	3.80274650 00	8.69818D-06	2.28734D-06
13	2.48289270 00	2.48276950 00	1.23203D-04	4.96207D-05
14	1.62158600 00	1.62143320 00	1.52795D-04	9.42254D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 80HE-20N2-0-3		
0	9.01657100 02	9.00882120 02	7.749870-01	8.595140-04
1	4.91753060 02	4.91425380 02	3.276730-01	6.663360-04
2	2.89205740 02	2.89043020 02	1.627150-01	5.626280-04
3	1.77411010 02	1.77324260 02	8.674980-02	4.889760-04
4	1.11508750 02	1.11459830 02	4.891950-02	4.387050-04
5	7.11099090 01	7.10805870 01	2.932280-02	4.123590-04
6	4.57510900 01	4.57332480 01	1.784250-02	3.899900-04
7	2.95987320 01	2.95882630 01	1.046860-02	3.536850-04
8	1.92165590 01	1.92102730 01	6.285820-03	3.271050-04
9	1.25039520 01	1.25004540 01	3.498240-03	2.797710-04
10	8.14808630 00	8.14608450 00	2.001750-03	2.456720-04
11	5.31316800 00	5.31350140 00	-3.334870-04	-6.276600-05
12	3.46701670 00	3.46799360 00	-9.768930-04	-2.817670-04
13	2.26351710 00	2.26437670 00	-8.596160-04	-3.797700-04
14	1.47832910 00	1.47887610 00	-5.470290-04	-3.700320-04
		RUN NO. 80HE-20N2-0-4		
0	7.49134250 02	7.49321260 02	-1.870090-01	-2.496330-04
1	4.19561900 02	4.19636480 02	-7.458360-02	-1.777650-04
2	2.50411680 02	2.50451910 02	-4.023430-02	-1.606730-04
3	1.54907270 02	1.54934150 02	-2.688610-02	-1.735630-04
4	9.78504260 01	9.78658180 01	-1.539260-02	-1.573080-04
5	6.25891020 01	6.25980150 01	-8.912740-03	-1.424010-04
6	4.03458260 01	4.03504150 01	-4.588630-03	-1.137330-04
7	2.61336570 01	2.61363560 01	-2.698730-03	-1.032670-04
8	1.69805160 01	1.69818400 01	-1.324580-03	-7.800590-05
9	1.10550330 01	1.10557100 01	-6.773970-04	-6.127500-05
10	7.20638590 00	7.20684990 00	-4.639100-04	-6.437480-05
11	4.70188760 00	4.70181410 00	7.345670-05	1.562280-05
12	3.06935080 00	3.06916520 00	1.855920-04	6.046610-05
13	2.00425920 00	2.00413980 00	1.193610-04	5.955360-05
14	1.30919580 00	1.30898740 00	2.083220-04	1.591220-04

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 80HE-20N2-0-5		
0	1.04054660 03	1.04074140 03	-1.947790-01	-1.871890-04
1	5.54875750 02	5.54984220 02	-1.084700-01	-1.954850-04
2	3.22304670 02	3.22340550 02	-3.588410-02	-1.113360-04
3	1.96328140 02	1.96348450 02	-2.030520-02	-1.034250-04
4	1.22892130 02	1.22904660 02	-1.252850-02	-1.019480-04
5	7.81759550 01	7.81823450 01	-6.389680-03	-8.173460-05
6	5.02218560 01	5.02243020 01	-2.445370-03	-4.869140-05
7	3.24611490 01	3.24620350 01	-8.853090-04	-2.727290-05
8	2.10626440 01	2.10629160 01	-2.713590-04	-1.288340-05
9	1.37007770 01	1.37004960 01	2.812860-04	2.053060-05
10	8.92594290 00	8.92579050 00	1.523860-04	1.707230-05
11	5.82146940 00	5.82110500 00	3.643880-04	6.259380-05
12	3.79928780 00	3.79887790 00	4.098950-04	1.078870-04
13	2.48024550 00	2.48024590 00	-3.577540-07	-1.442410-07
14	1.61976920 00	1.61978600 00	-1.677770-05	-1.035810-05
		RUN NO. 80HE-20N2-0-6		
0	9.10002870 02	9.10410530 02	-4.076620-01	-4.479790-04
1	4.95667140 02	4.95833010 02	-1.658750-01	-3.346500-04
2	2.91304140 02	2.91377760 02	-7.362770-02	-2.527520-04
3	1.78622220 02	1.78666980 02	-4.476360-02	-2.506050-04
4	1.12244920 02	1.12270760 02	-2.584520-02	-2.302570-04
5	7.15701560 01	7.15849850 01	-1.482870-02	-2.071910-04
6	4.60443650 01	4.60526890 01	-8.324670-03	-1.807970-04
7	2.97880810 01	2.97928580 01	-4.776640-03	-1.603540-04
8	1.93395910 01	1.93422470 01	-2.655790-03	-1.373240-04
9	1.25845660 01	1.25859710 01	-1.404850-03	-1.116330-04
10	8.20110000 00	8.20166150 00	-5.615180-04	-6.846860-05
11	5.34963280 00	5.34968880 00	-5.593100-05	-1.045510-05
12	3.49165790 00	3.49158490 00	7.299000-05	2.090410-05
13	2.28007270 00	2.27976870 00	3.040020-04	1.333300-04
14	1.48935160 00	1.48892380 00	4.278260-04	2.872570-04

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 7.85069D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.530400060 00	S2N	8.090060-10	SN	2.844300-05
B	1.396357570 01	S2B	1.109320-02	SB	1.053240-01
C	2.486370930 02	S2C	3.048550 02	SC	1.746010 01
D	3.059189220 03	S2D	1.262720 06	SD	1.123710 03
E	2.922738920 04	S2E	4.915310 08	SE	2.217050 04
P1	1.044182100 03	S2P1	7.572640-02	SP1	2.751840-01
P2	1.042458410 03	S2P2	7.427690-02	SP2	2.725380-01
P3	9.008821160 02	S2P3	3.155710-02	SP3	1.776430-01
P4	7.493212630 02	S2P4	2.599910-02	SP4	1.612420-01
P5	1.040741410 03	S2P5	7.286110-02	SP5	2.699280-01
P6	9.104105350 02	S2P6	3.194660-02	SP6	1.787360-01

COVARIANCES

S2BC	-1.740630 00	S2BD	1.041670 02
S2BE	-1.916120 03	S2BP1	-5.152630-03
S2BP2	-4.936820-03	S2BP3	6.114200-03
S2BP4	6.872870-03	S2BP5	-4.723210-03
S2BP6	5.740930-03	S2BN	-2.661340-06
S2CD	-1.927440 04	S2CE	3.675860 05
S2CP1	1.189410 00	S2CP2	1.143070 00
S2CP3	-1.283690 00	S2CP4	-1.555950 00
S2CP5	1.097120 00	S2CP6	-1.197540 00
S2CN	3.700860-04	S2DE	-2.468810 07
S2DP1	-9.557100 01	S2DP2	-9.216340 01
S2DP3	8.981770 01	S2DP4	1.176630 02
S2DP5	-8.878330 01	S2DP6	8.307510 01
S2DN	-2.122140-02	S2EP1	2.284240 03
S2EP2	2.211410 03	S2EP3	-1.741320 03
S2EP4	-2.483040 03	S2EP5	2.139150 03
S2EP6	-1.589820 03	S2EN	3.791130-01
S2P1P2	6.874580-02	S2P1P3	2.350840-02
S2P1P4	3.794770-04	S2P1P5	6.803140-02
S2P1P6	2.574940-02	S2P1N	8.996450-07
S2P2P3	2.363100-02	S2P2P4	7.662670-04
S2P2P5	6.734280-02	S2P2P6	2.583650-02
S2P2N	8.602550-07	S2P3P4	2.127960-02
S2P3P5	2.375120-02	S2P3P6	2.753540-02
S2P3N	-1.116720-06	S2P4P5	1.149500-03
S2P4P6	2.053570-02	S2P4N	-1.183640-06
S2P5P6	2.592130-02	S2P5N	8.214900-07
S2P6N	-1.053080-06		

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 70HE-30N2-0-1		
0	1.04082950 03	1.04075480 03	7.47170D-02	7.17860D-05
1	5.41634890 02	5.41625710 02	9.17748D-03	1.69440D-05
2	3.12031500 02	3.12018320 02	1.31834D-02	4.22502D-05
3	1.89718160 02	1.89716750 02	1.40335D-03	7.39705D-06
4	1.18809520 02	1.18810610 02	-1.09625D-03	-9.22693D-06
5	7.56706360 01	7.56701620 01	4.74243D-04	6.26720D-06
6	4.86792830 01	4.86781860 01	1.09651D-03	2.25253D-05
7	3.15073010 01	3.15061280 01	1.17298D-03	3.72289D-05
8	2.04705490 01	2.04696400 01	9.09537D-04	4.44315D-05
9	1.33319750 01	1.33313430 01	6.32233D-04	4.74223D-05
10	8.69587800 00	8.69579190 00	8.60916D-05	9.90028D-06
11	5.67780770 00	5.67776640 00	4.13077D-05	7.27529D-06
12	3.70944750 00	3.70959610 00	-1.48505D-04	-4.00341D-05
13	2.42473660 00	2.42470130 00	3.53698D-05	1.45871D-05
14	1.58520350 00	1.58529020 00	-8.66572D-05	-5.46663D-05
		RUN NO. 70HE-30N2-0-2		
0	9.14251040 02	9.14321840 02	-7.08076D-02	-7.74488D-05
1	4.87161090 02	4.87161240 02	-1.49186D-04	-3.06235D-07
2	2.84166530 02	2.84166020 02	5.07806D-04	1.78700D-06
3	1.73941910 02	1.73947690 02	-5.77973D-03	-3.32279D-05
4	1.09343250 02	1.09347810 02	-4.56092D-03	-4.17119D-05
5	6.97964920 01	6.97976520 01	-1.15958D-03	-1.66137D-05
6	4.49604710 01	4.49605960 01	-1.25221D-04	-2.78513D-06
7	2.91242360 01	2.91241430 01	9.39792D-05	3.22684D-06
8	1.89320280 01	1.89319630 01	6.48147D-05	3.42355D-06
9	1.23339830 01	1.23340150 01	-3.12099D-05	-2.53040D-06
10	8.04718630 00	8.04698290 00	2.03322D-04	2.52663D-05
11	5.25477000 00	5.25486900 00	-9.90368D-05	-1.88470D-05
12	3.43353070 00	3.43360440 00	-7.36857D-05	-2.14606D-05
13	2.24449760 00	2.24443710 00	6.05123D-05	2.69603D-05
14	1.46750520 00	1.46748820 00	1.69191D-05	1.15292D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 70HE-30N2-0-3		
0	7.68511960 02	7.68539900 02	-2.79384D-02	-3.63539D-05
1	4.21538320 02	4.21523680 02	1.46418D-02	3.47342D-05
2	2.49681570 02	2.49680170 02	1.40019D-03	5.60790D-06
3	1.54112360 02	1.54117620 02	-5.25600D-03	-3.41050D-05
4	9.73396920 01	9.73416530 01	-1.96025D-03	-2.01382D-05
5	6.23072170 01	6.23077490 01	-5.31823D-04	-8.53549D-06
6	4.02045010 01	4.02041850 01	3.15814D-04	7.85518D-06
7	2.60708950 01	2.60706430 01	2.52515D-04	9.68572D-06
8	1.69585370 01	1.69583980 01	1.38618D-04	8.17396D-06
9	1.10532050 01	1.10529840 01	2.21107D-04	2.00039D-05
10	7.21314240 00	7.21319950 00	-5.71860D-05	-7.92803D-06
11	4.71098470 00	4.71123060 00	-2.45821D-04	-5.21804D-05
12	3.07860130 00	3.07874090 00	-1.39642D-04	-4.53589D-05
13	2.01253610 00	2.01262640 00	-9.03755D-05	-4.49063D-05
14	1.31611250 00	1.31598760 00	1.24900D-04	9.49008D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 2.00300D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52871169D 00	S2N	8.47228D-11	SN	9.20450D-06
B	1.37896544D 01	S2B	1.26416D-03	SB	3.55551D-02
C	3.28835519D 02	S2C	3.79172D 01	SC	6.15770D 00
D	4.29204658D 03	S2D	1.73086D 05	SD	4.16036D 02
E	7.32393208D 04	S2E	7.44210D 07	SE	8.62676D 03
P1	1.04075476D 03	S2P1	1.01725D-02	SP1	1.00859D-01
P2	9.14321843D 02	S2P2	3.34320D-03	SP2	5.78204D-02
P3	7.68539896D 02	S2P3	2.51763D-03	SP3	5.01760D-02

COVARIANCES

S2BC	-2.07020D 01	S2BD	1.29757D 01
S2BE	-2.49372D 02	S2BP1	-8.35148D-04
S2BP2	3.79923D-04	S2BP3	7.13634D-04
S2BN	-2.90429D-07	S2CD	-2.51459D 03
S2CE	5.02399D 04	S2CP1	2.00986D-01
S2CP2	-7.89555D-02	S2CP3	-1.66743D-01
S2CN	4.20939D-05	S2DE	-3.55275D 06
S2DP1	-1.67870D 01	S2DP2	5.30515D 00
S2DP3	1.30297D 01	S2DN	-2.52757D-03
S2EP1	4.14354D 02	S2EP2	-9.10793D 01

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

COVARIANCES

S2EP3	-2.833860 02	S2EN	4.705270-02
S2P1P2	3.943090-03	S2P1P3	3.084180-04
S2P1N	1.394580-07	S2P2P3	1.985950-03
S2P2N	-6.833790-08	S2P3N	-1.190440-07

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 60HE-40N2-0-1		
0	1.04240290 03	1.04236420 03	3.869230-02	3.711840-05
1	5.27112800 02	5.27180310 02	-6.751350-02	-1.280820-04
2	3.00933910 02	3.00935930 02	-2.018250-03	-6.706620-06
3	1.82648330 02	1.82654670 02	-6.336240-03	-3.469090-05
4	1.14448720 02	1.14452560 02	-3.841780-03	-3.356770-05
5	7.29714690 01	7.29731880 01	-1.719080-03	-2.355820-05
6	4.69897170 01	4.69902830 01	-5.652800-04	-1.202990-05
7	3.04372430 01	3.04373850 01	-1.422660-04	-4.674080-06
8	1.97866020 01	1.97863960 01	2.067420-04	1.044860-05
9	1.28912530 01	1.28913810 01	-1.280800-04	-9.935420-06
10	8.41086650 00	8.41102350 00	-1.570120-04	-1.866770-05
11	5.49249270 00	5.49279120 00	-2.985220-04	-5.435080-05
12	3.58874630 00	3.58915280 00	-4.065590-04	-1.132870-04
13	2.34627870 00	2.34615020 00	1.285450-04	5.478680-05
14	1.53415960 00	1.53400550 00	1.540510-04	1.004140-04
		RUN NO. 60HE-40N2-0-2		
0	9.07758780 02	9.07851110 02	-9.232770-02	-1.017100-04
1	4.72456120 02	4.72490690 02	-3.457010-02	-7.317110-05
2	2.73669380 02	2.73673240 02	-3.857570-03	-1.409570-05
3	1.67339770 02	1.67349480 02	-9.716710-03	-5.806570-05
4	1.05276050 02	1.05281370 02	-5.315260-03	-5.048880-05
5	6.72728480 01	6.72764580 01	-3.610350-03	-5.366720-05
6	4.33772170 01	4.33788730 01	-1.656420-03	-3.818640-05
7	2.81198090 01	2.81204730 01	-6.642090-04	-2.362070-05
8	1.82885180 01	1.82892460 01	-7.281740-04	-3.981590-05
9	1.19191840 01	1.19196460 01	-4.622700-04	-3.878370-05
10	7.77847480 00	7.77855310 00	-7.825400-05	-1.006030-05
11	5.08038130 00	5.08040600 00	-2.467900-05	-4.857700-06
12	3.31971080 00	3.31996190 00	-2.511370-04	-7.565030-05
13	2.17031710 00	2.17030220 00	1.488620-05	6.840580-06
14	1.41927690 00	1.41907870 00	1.982500-04	1.396840-04

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 60HE-40N2-0-3.		
0	7.6407342D 02	7.6397984D 02	9.35838D-02	1.22480D-04
1	4.1100730D 02	4.1093030D 02	7.70064D-02	1.87360D-04
2	2.4205004D 02	2.4201519D 02	3.48478D-02	1.43969D-04
3	1.4928444D 02	1.4926803D 02	1.64158D-02	1.09963D-04
4	9.4353251D 01	9.4343863D 01	9.38761D-03	9.94943D-05
5	6.0453474D 01	6.0446526D 01	6.94868D-03	1.14943D-04
6	3.9040125D 01	3.9035785D 01	4.34016D-03	1.11172D-04
7	2.5331431D 01	2.5329046D 01	2.38496D-03	9.41504D-05
8	1.6484859D 01	1.6483450D 01	1.40929D-03	8.54901D-05
9	1.0747194D 01	1.0746762D 01	4.32048D-04	4.02010D-05
10	7.0151586D 00	7.0148213D 00	3.37318D-04	4.80842D-05
11	4.5824507D 00	4.5822938D 00	1.56904D-04	3.42401D-05
12	2.9945819D 00	2.9947517D 00	-1.69743D-04	-5.66833D-05
13	1.9577268D 00	1.9578347D 00	-1.07835D-04	-5.50816D-05
14	1.2800211D 00	1.2802081D 00	-1.86918D-04	-1.46027D-04
		RUN NO. 60HE-40N2-0-4.		
0	6.2484997D 02	6.2485546D 02	-5.48407D-03	-8.77662D-06
1	3.4777409D 02	3.4778510D 02	-1.10096D-02	-3.16574D-05
2	2.0838187D 02	2.0839552D 02	-1.36534D-02	-6.55209D-05
3	1.2968653D 02	1.2969690D 02	-1.03673D-02	-7.99410D-05
4	8.2375280D 01	8.2380582D 01	-5.30167D-03	-6.43600D-05
5	5.2928966D 01	5.2931691D 01	-2.72451D-03	-5.14749D-05
6	3.4239777D 01	3.4240637D 01	-8.60719D-04	-2.51380D-05
7	2.2240245D 01	2.2240662D 01	-4.17049D-04	-1.87520D-05
8	1.4483070D 01	1.4482994D 01	7.56815D-05	5.22552D-06
9	9.4465470D 00	9.4464012D 00	1.45788D-04	1.54330D-05
10	6.1677364D 00	6.1676513D 00	8.51892D-05	1.38121D-05
11	4.0295841D 00	4.0295817D 00	2.31796D-06	5.75236D-07
12	2.6339990D 00	2.6338178D 00	1.81227D-04	6.88028D-05
13	1.7219741D 00	1.7219957D 00	-2.16128D-05	-1.25512D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 9.10377D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528718290 00	S2N	2.238370-10	SN	1.496120-05
B	1.280063750 01	S2B	3.424690-03	SB	5.852090-02
C	4.306533380 02	S2C	1.091110 02	SC	1.044560 01
D	5.500213400 03	S2D	5.335170 05	SD	7.304230 02
E	1.507427940 05	S2E	2.458340 08	SE	1.567910 04
P1	1.042364170 03	S2P1	3.340790-02	SP1	1.827780-01
P2	9.078511090 02	S2P2	1.027500-02	SP2	1.013660-01
P3	7.639798370 02	S2P3	6.172410-03	SP3	7.856470-02
P4	6.248554570 02	S2P4	3.759740-03	SP4	6.131670-02

COVARIANCES

S2BC	-5.783700-01	S2BD	3.753160 01
S2BE	-7.430760 02	S2BP1	-2.445910-03
S2BP2	7.449080-04	S2BP3	1.673690-03
S2BP4	1.130970-03	S2BN	-7.780020-07
S2CD	-7.487940 03	S2CE	1.544300 05
S2CP1	6.150470-01	S2CP2	-1.478700-01
S2CP3	-3.995620-01	S2CP4	-2.891860-01
S2CN	1.163920-04	S2DE	-1.132260 07
S2DP1	-5.404080 01	S2DP2	8.841310 00
S2DP3	3.185020 01	S2DP4	2.514520 01
S2DN	-7.239390-03	S2EP1	1.405970 03
S2EP2	-1.013970 02	S2EP3	-7.010580 02
S2EP4	-5.975230 02	S2EN	1.384070-01
S2P1P2	1.372110-02	S2P1P3	2.503320-03
S2P1P4	-1.721420-03	S2P1N	4.000730-07
S2P2P3	5.373980-03	S2P2P4	2.433140-03
S2P2N	-1.351300-07	S2P3P4	3.984730-03
S2P3N	-2.740120-07	S2P4N	-1.906320-07

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-0-1		
0	1.04066560 03	1.04045310 03	2.125090-01	2.042050-04
1	5.08052650 02	5.08024230 02	2.841920-02	5.593760-05
2	2.87362440 02	2.87336930 02	2.551430-02	8.878790-05
3	1.74355190 02	1.74351800 02	3.389120-03	1.943800-05
4	1.09480960 02	1.09478060 02	2.901090-03	2.649860-05
5	6.99653810 01	6.99615630 01	3.817370-03	5.456080-05
6	4.51396450 01	4.51361170 01	3.528140-03	7.816050-05
7	2.92790210 01	2.92773800 01	1.641050-03	5.604850-05
8	1.90519080 01	1.90511310 01	7.775190-04	4.081060-05
9	1.24208790 01	1.24207400 01	1.392060-04	1.120740-05
10	8.10740550 00	8.10764430 00	-2.387390-04	-2.944700-05
11	5.29632740 00	5.29627530 00	5.213630-05	9.843870-06
12	3.46123840 00	3.46143600 00	-1.976080-04	-5.709160-05
13	2.26281560 00	2.26296170 00	-1.460990-04	-6.456520-05
14	1.47973650 00	1.47974050 00	-3.945570-06	-2.666400-06
		RUN NO. 50HE-50N2-0-2		
0	9.10001100 02	9.10227930 02	-2.268270-01	-2.492610-04
1	4.58862140 02	4.58918290 02	-5.615340-02	-1.223750-04
2	2.63590370 02	2.63617820 02	-2.745390-02	-1.041540-04
3	1.61126590 02	1.61152320 02	-2.573540-02	-1.597220-04
4	1.01555670 02	1.01568880 02	-1.321000-02	-1.300770-04
5	6.50296940 01	6.50363190 01	-6.625030-03	-1.018770-04
6	4.20010170 01	4.20051210 01	-4.104060-03	-9.771340-05
7	2.72614890 01	2.72640470 01	-2.558360-03	-9.384520-05
8	1.77470320 01	1.77479090 01	-8.775600-04	-4.944830-05
9	1.15732060 01	1.15738450 01	-6.391300-04	-5.522490-05
10	7.55542770 00	7.55596680 00	-5.390930-04	-7.135180-05
11	4.93662440 00	4.93636620 00	2.582070-04	5.230430-05
12	3.22639630 00	3.22641140 00	-1.518550-05	-4.706660-06
13	2.10949740 00	2.10939470 00	1.027790-04	4.872180-05
14	1.37957890 00	1.37935910 00	2.198020-04	1.593260-04

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-0-3		
0	7.5923842D 02	7.5928104D 02	-4.26210D-02	-5.61365D-05
1	3.9858725D 02	3.9856246D 02	2.47923D-02	6.22005D-05
2	2.3340491D 02	2.3340435D 02	5.60405D-04	2.40100D-06
3	1.4401391D 02	1.4401745D 02	-3.54000D-03	-2.45810D-05
4	9.1199470D 01	9.1200432D 01	-9.61555D-04	-1.05434D-05
5	5.8546761D 01	5.8546000D 01	7.60911D-04	1.29966D-05
6	3.7869098D 01	3.7867428D 01	1.67018D-03	4.41041D-05
7	2.4600134D 01	2.4599055D 01	1.07933D-03	4.38750D-05
8	1.6022011D 01	1.6021222D 01	7.89318D-04	4.92646D-05
9	1.0451322D 01	1.0451111D 01	2.10202D-04	2.01125D-05
10	6.8249516D 00	6.8243417D 00	6.09933D-04	8.93681D-05
11	4.4593177D 00	4.4589527D 00	3.65013D-04	8.18540D-05
12	2.9144793D 00	2.9146102D 00	-1.30849D-04	-4.48963D-05
13	1.9054099D 00	1.9056422D 00	-2.32242D-04	-1.21886D-04
		RUN NO. 50HE-50N2-0-4		
0	6.3310651D 02	6.3306920D 02	3.73058D-02	5.89250D-05
1	3.4467076D 02	3.4462321D 02	4.75489D-02	1.37954D-04
2	2.0534551D 02	2.0533747D 02	8.03650D-03	3.91365D-05
3	1.2777564D 02	1.2777445D 02	1.18964D-03	9.31034D-06
4	8.1270537D 01	8.1267860D 01	2.67699D-03	3.29392D-05
5	5.2297212D 01	5.2293601D 01	3.61079D-03	6.90436D-05
6	3.3871486D 01	3.3869044D 01	2.44189D-03	7.20929D-05
7	2.2020283D 01	2.2019206D 01	1.07761D-03	4.89373D-05
8	1.4348276D 01	1.4347936D 01	3.39920D-04	2.36906D-05
9	9.3622981D 00	9.3624015D 00	-1.03400D-04	-1.10443D-05
10	6.1143657D 00	6.1146041D 00	-2.38419D-04	-3.89932D-05
11	3.9956001D 00	3.9957045D 00	-1.04412D-04	-2.61318D-05
12	2.6118716D 00	2.6120113D 00	-1.39797D-04	-5.35236D-05
13	1.7078728D 00	1.7078826D 00	-9.74584D-06	-5.70642D-06

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 8.29438D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528721000 00	S2N	2.372960-10	SN	1.54044D-05
B	1.073293890 01	S2B	3.542420-03	SB	5.95182D-02
C	5.790858650 02	S2C	1.191320 02	SC	1.09148D 01
D	5.436524730 03	S2D	6.24463D 05	SD	7.90230D 02
E	3.332742250 05	S2E	3.06083D 08	SE	1.74952D 04
P1	1.040453090 03	S2P1	2.97273D-02	SP1	1.72416D-01
P2	9.102279270 02	S2P2	9.80979D-03	SP2	9.90444D-02
P3	7.592810400 02	S2P3	5.64412D-03	SP3	7.51273D-02
P4	6.330692010 02	S2P4	3.74110D-03	SP4	6.11645D-02

COVARIANCES

S2BC	-6.152430-01	S2BD	4.13748D 01
S2BE	-8.417200 02	S2BP1	-2.44802D-03
S2BP2	4.332610-04	S2BP3	1.69875D-03
S2BP4	1.247090-03	S2BN	-8.17468D-07
S2CD	-8.466540 03	S2CE	1.79824D 05
S2CP1	6.253650-01	S2CP2	-8.05264D-02
S2CP3	-3.991340-01	S2CP4	-3.20939D-01
S2CN	1.259500-04	S2DE	-1.365960 07
S2DP1	-5.649780 01	S2DP2	3.57401D 00
S2DP3	3.228070 01	S2DP4	2.81951D 01
S2DN	-8.116730-03	S2EP1	1.51103D 03
S2EP2	2.634030 01	S2EP3	-7.220800 02
S2EP4	-6.806780 02	S2EN	1.58659D-01
S2P1P2	1.323620-02	S2P1P3	2.60303D-03
S2P1P4	-1.222590-03	S2P1N	4.13495D-07
S2P2P3	4.726220-03	S2P2P4	2.24547D-03
S2P2N	-7.510800-08	S2P3P4	3.75395D-03
S2P3N	-3.103420-07	S2P4N	-2.10099D-07

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K TTS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.(	REL. ERROR IN P
		RUN NO. 40HE-60N2-0-1		
0	1.0444651D 03	1.0444538D 03	1.12649D-02	1.07853D-05
1	4.9456603D 02	4.9464557D 02	-7.95374D-02	-1.60823D-04
2	2.7771796D 02	2.7774220D 02	-2.42340D-02	-8.72611D-05
3	1.6859263D 02	1.6861634D 02	-2.37160D-02	-1.40670D-04
4	1.0611634D 02	1.0612728D 02	-1.09399D-02	-1.03093D-04
5	6.7976227D 01	6.7980855D 01	-4.62781D-03	-6.80798D-05
6	4.3938241D 01	4.3941267D 01	-3.02610D-03	-6.88716D-05
7	2.8539801D 01	2.8541795D 01	-1.99387D-03	-6.98627D-05
8	1.8589084D 01	1.8590426D 01	-1.34222D-03	-7.22045D-05
9	1.2127477D 01	1.2128332D 01	-8.55439D-04	-7.05372D-05
10	7.9200552D 00	7.9202424D 00	-1.87238D-04	-2.36410D-05
11	5.1756820D 00	5.1753465D 00	3.35469D-04	6.48164D-05
12	3.3831826D 00	3.3830346D 00	1.47942D-04	4.37286D-05
13	2.2120136D 00	2.2119706D 00	4.30006D-05	1.94396D-05
14	1.4466307D 00	1.4465063D 00	1.24347D-04	8.59563D-05
		RUN NO. 40HE-60N2-0-2		
0	8.9933786D 02	8.9919633D 02	1.41530D-01	1.57372D-04
1	4.4315440D 02	4.4306598D 02	8.84161D-02	1.99515D-04
2	2.5347024D 02	2.5343308D 02	3.71545D-02	1.46583D-04
3	1.5517597D 02	1.5516221D 02	1.37600D-02	8.86733D-05
4	9.8065260D 01	9.8053488D 01	1.17720D-02	1.20043D-04
5	6.2946120D 01	6.2936987D 01	9.13335D-03	1.45098D-04
6	4.0730266D 01	4.0725024D 01	5.24175D-03	1.28694D-04
7	2.6471664D 01	2.6468620D 01	3.04342D-03	1.14969D-04
8	1.7247128D 01	1.7246092D 01	1.03534D-03	6.00297D-05
9	1.1253840D 01	1.1253641D 01	1.98921D-04	1.76759D-05
10	7.3497993D 00	7.3499793D 00	-1.79984D-04	-2.44883D-05
11	4.8028731D 00	4.8031036D 00	-2.30531D-04	-4.79986D-05
12	3.1397027D 00	3.1398661D 00	-1.63354D-04	-5.20285D-05
13	2.0529617D 00	2.0530439D 00	-8.22206D-05	-4.00497D-05
14	1.3424867D 00	1.3426055D 00	-1.18732D-04	-8.84421D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K TTS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 40HE-60N2-0-3		
0	7.56277410 02	7.56509280 02	-2.31873D-01	-3.06598D-04
1	3.88961590 02	3.88998750 02	-3.71528D-02	-9.55178D-05
2	2.26872870 02	2.26912220 02	-3.93589D-02	-1.73484D-04
3	1.40152890 02	1.40179460 02	-2.65614D-02	-1.89517D-04
4	8.89576760 01	8.89704780 01	-1.28014D-02	-1.43905D-04
5	5.72278740 01	5.72334830 01	-5.60923D-03	-9.80157D-05
6	3.70749580 01	3.70784300 01	-3.47250D-03	-9.36617D-05
7	2.41125370 01	2.41146360 01	-2.09910D-03	-8.70541D-05
8	1.57171130 01	1.57184220 01	-1.30889D-03	-8.32781D-05
9	1.02584760 01	1.02591870 01	-7.10726D-04	-6.92819D-05
10	6.70136290 00	6.70144930 00	-8.64211D-05	-1.28960D-05
11	4.38018850 00	4.37969640 00	4.92169D-04	1.12363D-04
12	2.86351870 00	2.86324340 00	2.75294D-04	9.61383D-05
13	1.87246310 00	1.87223990 00	2.23222D-04	1.19213D-04
		RUN NO. 40HE-60N2-0-4		
0	6.29813080 02	6.29738530 02	7.45463D-02	1.18363D-04
1	3.37471600 02	3.37402550 02	6.90548D-02	2.04624D-04
2	2.00546490 02	2.00528510 02	1.79877D-02	8.96934D-05
3	1.24967620 02	1.24957560 02	1.00650D-02	8.05411D-05
4	7.96544540 01	7.96458320 01	8.62233D-03	1.08247D-04
5	5.13540300 01	5.13472200 01	6.80990D-03	1.32607D-04
6	3.33083170 01	3.33045180 01	3.79917D-03	1.14061D-04
7	2.16764630 01	2.16747620 01	1.70122D-03	7.84824D-05
8	1.41341340 01	1.41336440 01	4.89444D-04	3.46285D-05
9	9.22696470 00	9.22703440 00	-6.96830D-05	-7.55210D-06
10	6.02802290 00	6.02812720 00	-1.04314D-04	-1.73049D-05
11	3.93983310 00	3.94001910 00	-1.86037D-04	-4.72195D-05
12	2.57579140 00	2.57595660 00	-1.65155D-04	-6.41181D-05
13	1.68431260 00	1.68445130 00	-1.38717D-04	-8.23584D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.21035D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528736840 00	S2N	3.40423D-10	SN	1.84505D-05
B	8.446113860 00	S2B	5.24655D-03	SB	7.24331D-02
C	7.210966680 02	S2C	1.87196D 02	SC	1.368200 01
D	3.894914170 03	S2D	1.03484D 06	SD	1.017270 03
E	5.585092990 05	S2E	5.30614D 08	SE	2.303510 04
P1	1.044453820 03	S2P1	4.40133D-02	SP1	2.097940-01
P2	8.991963270 02	S2P2	1.363260-02	SP2	1.167590-01
P3	7.565092830 02	S2P3	8.025040-03	SP3	8.958260-02
P4	6.297385300 02	S2P4	5.421260-03	SP4	7.36292D-02

COVARIANCES

S2BC	-9.389770-01	S2BD	6.485130 01
S2BE	-1.344500 03	S2BP1	-3.764650-03
S2BP2	6.331580-04	S2BP3	2.396270-03
S2BP4	1.886270-03	S2BN	-1.189930-06
S2CD	-1.366160 04	S2CE	2.962960 05
S2CP1	9.866200-01	S2CP2	-1.224890-01
S2CP3	-5.743560-01	S2CP4	-4.937360-01
S2CN	1.889270-04	S2DE	-2.313650 07
S2DP1	-9.122260 01	S2DP2	5.725300 00
S2DP3	4.726710 01	S2DP4	4.406270 01
S2DN	-1.250130-02	S2EP1	2.490440 03
S2EP2	3.543670 01	S2EP3	-1.069010 03
S2EP4	-1.079830 03	S2EN	2.480230-01
S2P1P2	1.853890-02	S2P1P3	4.308640-03
S2P1P4	-1.585190-03	S2P1N	6.258020-07
S2P2P3	6.908940-03	S2P2P4	3.423690-03
S2P2N	-1.057370-07	S2P3P4	5.296170-03
S2P3N	-4.338360-07	S2P4N	-3.147810-07

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-0-1		
0	1.05081700 03	1.05080200 03	1.49941D-02	1.42690D-05
1	4.77392070 02	4.77518300 02	-1.26227D-01	-2.64410D-04
2	2.65749870 02	2.65778540 02	-2.86743D-02	-1.07900D-04
3	1.61614300 02	1.61633720 02	-1.94212D-02	-1.20170D-04
4	1.02128680 02	1.02139510 02	-1.08264D-02	-1.06007D-04
5	6.56621230 01	6.56677800 01	-5.65637D-03	-8.61436D-05
6	4.25630460 01	4.25656600 01	-2.61444D-03	-6.14251D-05
7	2.77022310 01	2.77035720 01	-1.34033D-03	-4.83833D-05
8	1.80691220 01	1.80692950 01	-1.73321D-04	-9.59211D-06
9	1.17995620 01	1.17993700 01	1.91948D-04	1.62674D-05
10	7.71042660 00	7.71029830 00	1.28282D-04	1.66375D-05
11	5.04051390 00	5.04033340 00	1.80469D-04	3.58036D-05
12	3.29589920 00	3.29575590 00	1.43219D-04	4.34538D-05
13	2.15541460 00	2.15535180 00	6.27823D-05	2.91277D-05
14	1.40973400 00	1.40969140 00	4.26559D-05	3.02581D-05
		RUN NO. 30HE-70N2-0-2		
0	7.55412090 02	7.55298790 02	1.13305D-01	1.49992D-04
1	3.77498140 02	3.77445270 02	5.28679D-02	1.40048D-04
2	2.19164000 02	2.19131140 02	3.28547D-02	1.49909D-04
3	1.35715520 02	1.35701960 02	1.35627D-02	9.99350D-05
4	8.64547240 01	8.64467090 01	8.01551D-03	9.27134D-05
5	5.57943410 01	5.57881550 01	6.18604D-03	1.10872D-04
6	3.62329180 01	3.62287330 01	4.18500D-03	1.15503D-04
7	2.36037440 01	2.36018530 01	1.89129D-03	8.01265D-05
8	1.54028980 01	1.54020430 01	8.54646D-04	5.54860D-05
9	1.00607260 01	1.00606270 01	9.83202D-05	9.77268D-06
10	6.57513870 00	6.57527230 00	-1.33547D-04	-2.03109D-05
11	4.29853220 00	4.29881040 00	-2.78195D-04	-6.47186D-05
12	2.81080010 00	2.81107860 00	-2.78512D-04	-9.90864D-05
13	1.83835140 00	1.83846090 00	-1.09554D-04	-5.95937D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.|	REL. ERROR IN P
		RUN NO. 30HE-70N2-0-3		
0	9.0860125D 02	9.0871915D 02	-1.1789 9D-01	-1.2975 9D-04
1	4.3112429D 02	4.3121628D 02	-9.1997 2D-02	-2.1338 9D-04
2	2.4468971D 02	2.4471511D 02	-2.5397 0D-02	-1.0379 3D-04
3	1.5004901D 02	1.5006887D 02	-1.9862 6D-02	-1.3237 4D-04
4	9.5169976D 01	9.5181877D 01	-1.1900 9D-02	-1.2504 8D-04
5	6.1293162D 01	6.1299532D 01	-6.3700 4D-03	-1.0392 7D-04
6	3.9763640D 01	3.9767505D 01	-3.8643 6D-03	-9.7183 1D-05
7	2.5891226D 01	2.5893597D 01	-2.3711 8D-03	-9.1582 3D-05
8	1.6891541D 01	1.6892717D 01	-1.1752 1D-03	-6.9574 0D-05
9	1.1032002D 01	1.1032521D 01	-5.1901 3D-04	-4.7046 2D-05
10	7.2095995D 00	7.2097642D 00	-1.6470 3D-04	-2.2844 9D-05
11	4.7134119D 00	4.7133507D 00	6.1134 7D-05	1.2970 4D-05
12	3.0822579D 00	3.0820405D 00	2.1737 2D-04	7.0523 7D-05
13	2.0157677D 00	2.0156242D 00	1.4354 5D-04	7.1210 8D-05
14	1.3184346D 00	1.3183193D 00	1.1531 3D-04	8.7462 3D-05
		RUN NO. 30HE-70N2-0-4		
0	6.3315571D 02	6.3307973D 02	7.5977 1D-02	1.1999 7D-04
1	3.3105690D 02	3.3100904D 02	4.7860 6D-02	1.4456 9D-04
2	1.9599403D 02	1.9597468D 02	1.9351 1D-02	9.8732 9D-05
3	1.2240346D 02	1.2239518D 02	8.2805 3D-03	6.7649 5D-05
4	7.8273926D 01	7.8268710D 01	5.2159 9D-03	6.6637 6D-05
5	5.0606282D 01	5.0602264D 01	4.0175 9D-03	7.9389 1D-05
6	3.2893088D 01	3.2890842D 01	2.2458 3D-03	6.8276 5D-05
7	2.1438844D 01	2.1437551D 01	1.2923 8D-03	6.0282 1D-05
8	1.3993477D 01	1.3993356D 01	1.2175 8D-04	8.7010 7D-06
9	9.1416596D 00	9.1418601D 00	-2.0045 7D-04	-2.1927 9D-05
10	5.9752893D 00	5.9753400D 00	-5.0662 0D-05	-8.4785 9D-06
11	3.9068682D 00	3.9068013D 00	6.6962 8D-05	1.7139 8D-05
12	2.5546628D 00	2.5548248D 00	-1.6204 0D-04	-6.3429 2D-05
13	1.6707877D 00	1.6709065D 00	-1.1879 2D-04	-7.1099 6D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-0-5		
0	6.32860800 02	6.32841120 02	1.96797D-02	3.10964D-05
1	3.30947980 02	3.30914670 02	3.33120D-02	1.00656D-04
2	1.95935520 02	1.95926560 02	8.96097D-03	4.57343D-05
3	1.22367170 02	1.22367230 02	-5.84315D-05	-4.77509D-07
4	7.82508660 01	7.82514470 01	-5.81451D-04	-7.43061D-06
5	5.05910960 01	5.05912920 01	-1.95588D-04	-3.86605D-06
6	3.28836620 01	3.28837710 01	-1.09278D-04	-3.32317D-06
7	2.14328640 01	2.14329640 01	-9.97277D-05	-4.65303D-06
8	1.39914190 01	1.39903690 01	1.04984D-03	7.50347D-05
9	9.14018690 00	9.13991180 00	2.75103D-04	3.00982D-05
10	5.97403320 00	5.97406770 00	-3.44377D-05	-5.76456D-06
11	3.90584040 00	3.90596990 00	-1.29437D-04	-3.31394D-05
12	2.55433730 00	2.55428130 00	5.59282D-05	2.18954D-05
13	1.67046250 00	1.67055110 00	-8.85481D-05	-5.30081D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 8.93635D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528678440 00	S2N	2.508990-10	SN	1.583980-05
B	5.306200970 00	S2B	6.518190-03	SB	8.073530-02
C	8.244625450 02	S2C	5.475910 02	SC	2.340070 01
D	1.155043830 04	S2D	8.760640 06	SD	2.959840 03
E	3.974673140 05	S2E	2.421040 10	SE	1.555970 05
F	1.001903920 07	S2F	8.332280 12	SF	2.886570 06
P1	1.050802050 03	S2P1	3.010850-02	SP1	1.735180-01
P2	7.552987880 02	S2P2	5.522210-03	SP2	7.431160-02
P3	9.087191490 02	S2P3	8.754550-03	SP3	9.356580-02
P4	6.330797320 02	S2P4	3.060510-03	SP4	5.532190-02
P5	6.328411170 02	S2P5	3.055780-03	SP5	5.527910-02

COVARIANCES

S2BC	-1.808710 00	S2BD	2.138720 02
S2BE	-1.045520 04	S2BF	1.820550 05
S2BP1	2.404410-03	S2BP2	-1.553560-03
S2BP3	-1.453890-03	S2BP4	-4.474040-04
S2BP5	-4.449460-04	S2BN	-1.164110-06
S2CD	-6.805120 04	S2CE	3.444990 06
S2CF	-6.131670 07	S2CP1	-9.477720-01
S2CP2	6.185160-01	S2CP3	5.072500-01

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

COVARIANCES

S2CP4	2.150410-01	S2CP5	2.141010-01
S2CN	2.931220-04	S2DE	-4.555800 08
S2DF	8.263390 09	S2DP1	1.498690 02
S2DP2	-9.591050 01	S2DP3	-6.968250 01
S2DP4	-3.953640 01	S2DP5	-3.939870 01
S2DN	-3.324770-02	S2EF	-4.462840 11
S2EP1	-9.489310 03	S2EP2	5.808240 03
S2EP3	3.697380 03	S2EP4	2.763360 03
S2EP5	2.755530 03	S2EN	1.579540 00
S2FP1	2.055910 05	S2FP2	-1.166270 05
S2FP3	-6.400160 04	S2FP4	-6.150640 04
S2FP5	-6.135730 04	S2FN	-2.710460 01
S2P1P2	2.603470-04	S2P1P3	1.004280-02
S2P1P4	-1.861290-03	S2P1P5	-1.861900-03
S2P1N	-3.240870-07	S2P2P3	4.438420-03
S2P2P4	3.236590-03	S2P2P5	3.232560-03
S2P2N	1.968710-07	S2P3P4	2.026660-03
S2P3P5	2.022360-03	S2P3N	2.174070-07
S2P4P5	2.646190-03	S2P4N	4.995360-08
S2P5N	4.963240-08		

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-0-1		
0	1.04227500 03	1.0424136D 03	-1.38637D-01	-1.33014D-04
1	4.5312635D 02	4.5323050D 02	-1.04154D-01	-2.29857D-04
2	2.5054602D 02	2.5056766D 02	-2.16360D-02	-8.63554D-05
3	1.5301846D 02	1.5303475D 02	-1.62834D-02	-1.06415D-04
4	9.7263671D 01	9.7275131D 01	-1.14606D-02	-1.17830D-04
5	6.2845903D 01	6.2852065D 01	-6.16148D-03	-9.80411D-05
6	4.0887027D 01	4.0890994D 01	-3.96700D-03	-9.70235D-05
7	2.6680495D 01	2.6682565D 01	-2.06994D-03	-7.75827D-05
8	1.7433589D 01	1.7434153D 01	-5.64357D-04	-3.23718D-05
9	1.1397905D 01	1.1398207D 01	-3.02057D-04	-2.65011D-05
10	7.4543166D 00	7.4541253D 00	1.91276D-04	2.56598D-05
11	4.8757935D 00	4.8754905D 00	3.03007D-04	6.21451D-05
12	3.1890910D 00	3.1891263D 00	-3.52205D-05	-1.10441D-05
13	2.0861909D 00	2.0861345D 00	5.64246D-05	2.70467D-05
14	1.3647958D 00	1.3646542D 00	1.41605D-04	1.03756D-04
		RUN NO. 20HE-80N2-0-2		
0	9.0036283D 02	9.0016702D 02	1.95803D-01	2.17471D-04
1	4.1093745D 02	4.1090127D 02	3.61801D-02	8.80429D-05
2	2.3201572D 02	2.3198885D 02	2.68670D-02	1.15798D-04
3	1.4289327D 02	1.4288319D 02	1.00786D-02	7.05327D-05
4	9.1137899D 01	9.1132554D 01	5.34483D-03	5.86455D-05
5	5.8970637D 01	5.8966928D 01	3.70894D-03	6.28946D-05
6	3.8388589D 01	3.8386700D 01	1.88956D-03	4.92218D-05
7	2.5055561D 01	2.5055135D 01	4.26131D-04	1.70074D-05
8	1.6373101D 01	1.6372784D 01	3.17421D-04	1.93868D-05
9	1.0705274D 01	1.0704904D 01	3.69875D-04	3.45508D-05
10	7.0004910D 00	7.0009157D 00	-4.24773D-04	-6.06776D-05
11	4.5787545D 00	4.5791254D 00	-3.70984D-04	-8.10230D-05
12	2.9951183D 00	2.9952920D 00	-1.73710D-04	-5.79977D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K TTS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-0-3		
0	7.61783260 02	7.61831810 02	-4.85567D-02	-6.37408D-05
1	3.66560860 02	3.66571450 02	-1.05958D-02	-2.89060D-05
2	2.11597760 02	2.11600300 02	-2.53870D-03	-1.19978D-05
3	1.31480010 02	1.31486030 02	-6.01614D-03	-4.57571D-05
4	8.41634150 01	8.41667640 01	-3.34898D-03	-3.97914D-05
5	5.45411570 01	5.45421670 01	-1.00944D-03	-1.85078D-05
6	3.55280510 01	3.55293230 01	-1.27211D-03	-3.58057D-05
7	2.31962690 01	2.31967690 01	-4.99794D-04	-2.15463D-05
8	1.51609750 01	1.51603740 01	6.01642D-04	3.96836D-05
9	9.91315180 00	9.91281050 00	3.41226D-04	3.44216D-05
10	6.48366200 00	6.48308820 00	5.73721D-04	8.84872D-05
11	4.24062510 00	4.24049250 00	1.32526D-04	3.12515D-05
12	2.77362680 00	2.77380870 00	-1.81943D-04	-6.55976D-05
13	1.81447610 00	1.81447470 00	1.39718D-06	7.70017D-07
		RUN NO. 20HE-80N2-0-4		
0	6.23219470 02	6.23185120 02	3.43437D-02	5.51069D-05
1	3.18037530 02	3.18005260 02	3.22732D-02	1.01476D-04
2	1.88066730 02	1.88053150 02	1.35806D-02	7.22114D-05
3	1.17993800 02	1.17989850 02	3.94917D-03	3.34693D-05
4	7.58306350 01	7.58275730 01	3.06179D-03	4.03767D-05
5	4.92226010 01	4.92202360 01	2.36439D-03	4.80345D-05
6	3.20889090 01	3.20856930 01	3.21598D-03	1.00221D-04
7	2.09566070 01	2.09551620 01	1.44489D-03	6.89468D-05
8	1.36976600 01	1.36973660 01	2.93251D-04	2.14089D-05
9	8.95674270 00	8.95682620 00	-8.34641D-05	-9.31858D-06
10	5.85808840 00	5.85806500 00	2.34354D-05	4.00052D-06
11	3.83157220 00	3.83174200 00	-1.69843D-04	-4.43272D-05
12	2.50638510 00	2.50645920 00	-7.40857D-05	-2.95588D-05
13	1.63951140 00	1.63959800 00	-8.65975D-05	-5.28191D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K TTS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 5.66689D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52863782D 00	S2N	3.15282D-10	SN	1.77562D-05
B	9.57807782D-01	S2B	7.55961D-03	SB	8.69460D-02
C	9.99382119D 02	S2C	6.55353D 02	SC	2.55999D 01
D	1.49068209D 04	S2D	1.10134D 07	SD	3.31864D 03
E	4.21731667D 05	S2E	3.23575D 10	SE	1.79882D 05
F	2.26001178D 07	S2F	1.19812D 13	SF	3.46138D 06
P1	1.04241364D 03	S2P1	2.48041D-02	SP1	1.57493D-01
P2	9.00167022D 02	S2P2	7.71512D-03	SP2	8.78358D-02
P3	7.61831813D 02	S2P3	5.94143D-03	SP3	7.70807D-02
P4	6.23185124D 02	S2P4	3.51739D-03	SP4	5.93076D-02

COVARIANCES

S2BC	-2.13361D 00	S2BD	2.58484D 02
S2BE	-1.29890D 04	S2BF	2.34344D 05
S2BP1	2.38923D-03	S2BP2	-9.43703D-04
S2BP3	-1.92511D-03	S2BP4	-8.27823D-04
S2BN	-1.40773D-06	S2CD	-8.34357D 04
S2CE	4.34633D 06	S2CF	-8.01492D 07
S2CP1	-9.95967D-01	S2CP2	3.91630D-01
S2CP3	7.60442D-01	S2CP4	3.60575D-01
S2CN	3.61353D-04	S2DE	-5.90122D 08
S2DF	1.10954D 10	S2DP1	1.63179D 02
S2DP2	-5.89912D 01	S2DP3	-1.19791D 02
S2DP4	-6.34575D 01	S2DN	-4.19932D-02
S2EF	-6.18652D 11	S2EP1	-1.06350D 04
S2EP2	3.37318D 03	S2EP3	7.42738D 03
S2EP4	4.35202D 03	S2EN	2.04855D 00
S2FP1	2.36107D 05	S2FP2	-6.21315D 04
S2FP3	-1.53706D 05	S2FP4	-9.72248D 04
S2FN	-3.64508D 01	S2P1P2	7.86948D-03
S2P1P3	1.02526D-04	S2P1P4	-2.21692D-03
S2P1N	-2.94666D-07	S2P2P3	4.28839D-03
S2P2P4	2.08567D-03	S2P2N	8.60066D-08
S2P3P4	3.69423D-03	S2P3N	2.72172D-07
S2P4N	1.17481D-07		

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.!	REL. ERROR IN P
		RUN NO. 10HE-90N2-0-1		
0	1.04089790 03	1.04098770 03	-8.977780-02	-8.625030-05
1	4.31088570 02	4.31144720 02	-5.614950-02	-1.302500-04
2	2.36759370 02	2.36766530 02	-7.160840-03	-3.024520-05
3	1.45359420 02	1.45368730 02	-9.303900-03	-6.400610-05
4	9.30170650 01	9.30198680 01	-2.802590-03	-3.012990-05
5	6.04326780 01	6.04336600 01	-9.816150-04	-1.624310-05
6	3.94749960 01	3.94758800 01	-8.846480-04	-2.241030-05
7	2.58308840 01	2.58311660 01	-2.819680-04	-1.091590-05
8	1.69104150 01	1.69097570 01	6.575260-04	3.888290-05
9	1.10696020 01	1.10692710 01	3.308070-04	2.988420-05
10	7.24529800 00	7.24500450 00	2.934500-04	4.050210-05
11	4.74159150 00	4.74127150 00	3.200350-04	6.749530-05
12	3.10232170 00	3.10241420 00	-9.245130-05	-2.980070-05
13	2.02981650 00	2.02986480 00	-4.833560-05	-2.381280-05
14	1.32804890 00	1.32803060 00	1.824850-05	1.374080-05
		RUN NO. 10HE-90N2-0-2		
0	9.02701480 02	9.02479280 02	2.222040-01	2.461550-04
1	3.93756320 02	3.93711180 02	4.513940-02	1.146380-04
2	2.21002020 02	2.20978540 02	2.347980-02	1.062430-04
3	1.36795070 02	1.36782670 02	1.239960-02	9.064360-05
4	8.77989670 01	8.77886320 01	1.033500-02	1.177120-04
5	5.71032470 01	5.70970480 01	6.199660-03	1.085690-04
6	3.73151670 01	3.73101410 01	5.025930-03	1.346890-04
7	2.44187640 01	2.44165420 01	2.221900-03	9.099140-05
8	1.59844830 01	1.59838880 01	5.943500-04	3.718290-05
9	1.04627950 01	1.04630210 01	-2.265830-04	-2.165600-05
10	6.84783140 00	6.84806490 00	-2.335610-04	-3.410730-05
11	4.48109860 00	4.48142800 00	-3.293520-04	-7.349810-05
12	2.93209160 00	2.93234880 00	-2.571620-04	-8.770610-05
13	1.91846860 00	1.91857540 00	-1.068660-04	-5.570410-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.(	REL. ERROR IN P
		RUN NO. 10HE-90N2-0-3		
0	7.6098998D 02	7.6117687D 02	-1.86883D-01	-2.45579D-04
1	3.5242496D 02	3.5248433D 02	-5.93703D-02	-1.68462D-04
2	2.0266152D 02	2.0268833D 02	-2.68099D-02	-1.32289D-04
3	1.2657492D 02	1.2659391D 02	-1.89918D-02	-1.50044D-04
4	8.1508174D 01	8.1518986D 01	-1.08118D-02	-1.32647D-04
5	5.3075997D 01	5.3082656D 01	-6.65899D-03	-1.25461D-04
6	3.4695814D 01	3.4700755D 01	-4.94108D-03	-1.42411D-04
7	2.2708415D 01	2.2711314D 01	-2.89839D-03	-1.27635D-04
8	1.4866646D 01	1.4867675D 01	-1.02874D-03	-6.91980D-05
9	9.7318117D 00	9.7321293D 00	-3.17659D-04	-3.26413D-05
10	6.3698458D 00	6.3695295D 00	3.16324D-04	4.96595D-05
11	4.1685868D 00	4.1681801D 00	4.06787D-04	9.75840D-05
12	2.7276093D 00	2.7273360D 00	2.73320D-04	1.00205D-04
13	1.7845897D 00	1.7844193D 00	1.70398D-04	9.54831D-05
		RUN NO. 10HE-90N2-0-4		
0	6.3465513D 02	6.3461962D 02	3.55152D-02	5.59599D-05
1	3.1208773D 02	3.1206891D 02	1.88166D-02	6.02925D-05
2	1.8373720D 02	1.8373508D 02	2.11054D-03	1.14867D-05
3	1.1576453D 02	1.1576326D 02	1.27190D-03	1.09870D-05
4	7.4786653D 01	7.4784749D 01	1.90402D-03	2.54594D-05
5	4.8753609D 01	4.8753491D 01	1.17958D-04	2.41947D-06
6	3.1882032D 01	3.1882645D 01	-6.12825D-04	-1.92217D-05
7	2.0868442D 01	2.0868796D 01	-3.53485D-04	-1.69387D-05
8	1.3661479D 01	1.3661449D 01	3.00405D-05	2.19892D-06
9	8.9423114D 00	8.9422983D 00	1.31025D-05	1.46522D-06
10	5.8527969D 00	5.8524228D 00	3.74024D-04	6.39052D-05
11	3.8296761D 00	3.8296961D 00	-1.99808D-05	-5.21737D-06
12	2.5057349D 00	2.5058135D 00	-7.85732D-05	-3.13574D-05
13	1.6394271D 00	1.6394629D 00	-3.57988D-05	-2.18362D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 10HE-90N2-0-5		
0	5.0495133D 02	5.0489418D 02	5.71512D-02	1.13182D-04
1	2.6591947D 02	2.6589717D 02	2.2299 7D-02	8.38588D-05
2	1.6071435D 02	1.6070824D 02	6.11237D-03	3.80325D-05
3	1.0224626D 02	1.0224045D 02	5.81142D-03	5.68375D-05
4	6.6287325D 01	6.6283771D 01	3.55422D-03	5.36184D-05
5	4.3268891D 01	4.3265615D 01	3.27541D-03	7.56990D-05
6	2.8305864D 01	2.8304876D 01	9.88030D-04	3.49055D-05
7	1.8528326D 01	1.8528480D 01	-1.54376D-04	-8.33187D-06
8	1.2128587D 01	1.2129170D 01	-5.83383D-04	-4.80999D-05
9	7.9389269D 00	7.9389877D 00	-6.07606D-05	-7.65350D-06
10	5.1953156D 00	5.1955812D 00	-2.65637D-04	-5.11302D-05
11	3.3998320D 00	3.3997654D 00	6.66600D-05	1.96068D-05
12	2.2244002D 00	2.2244536D 00	-5.34366D-05	-2.40229D-05
13	1.4553352D 00	1.4553559D 00	-2.07272D-05	-1.42422D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 8.65636D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528666618D 00	S2N	2.66436D-10	SN	1.63229D-05
B	-4.090175680 00	S2B	7.04310D-03	SB	8.39232D-02
C	1.213637310 03	S2C	6.77027D 02	SC	2.60198D 01
D	1.506813200 04	S2D	1.22810D 07	SD	3.50443D 03
E	5.360700610 05	S2E	3.87661D 10	SE	1.96891D 05
F	3.962740230 07	S2F	1.54172D 13	SF	3.92647D 06
P1	1.040987720 03	S2P1	2.71721D-02	SP1	1.64840D-01
P2	9.024792780 02	S2P2	8.75868D-03	SP2	9.35878D-02
P3	7.611768680 02	S2P3	5.90862D-03	SP3	7.68675D-02
P4	6.346196190 02	S2P4	3.88024D-03	SP4	6.22916D-02
P5	5.048941760 02	S2P5	1.57574D-03	SP5	3.96956D-02

COVARIANCES

S2BC	-2.09591D 00	S2BD	2.64219D 02
S2BE	-1.37961D 04	S2BF	2.59099D 05
S2BP1	2.68787D-03	S2BP2	-7.69500D-04
S2BP3	-1.90712D-03	S2BP4	-1.23515D-03
S2BP5	3.41493D-05	S2BN	-1.24861D-06
S2CD	-8.95940D 04	S2CE	4.84485D 06
S2CF	-9.28600D 07	S2CP1	-1.14014D 00
S2CP2	3.02813D-01	S2CP3	7.80215D-01

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

COVARIANCES

S2CP4	5.32747D-01	S2CP5	2.10765D-02
S2CN	3.38626D-04	S2DE	-6.82431D 08
S2DF	1.33194D 10	S2DP1	1.90208D 02
S2DP2	-4.36890D 01	S2DP3	-1.24675D 02
S2DP4	-9.05643D 01	S2DP5	-1.06860D 01
S2DN	-4.09515D-02	S2EF	-7.68518D 11
S2EP1	-1.26678D 04	S2EP2	2.34007D 03
S2EP3	7.81713D 03	S2EP4	6.03831D 03
S2EP5	1.16806D 03	S2EN	2.07583D 00
S2FP1	2.88893D 05	S2FP2	-3.83817D 04
S2FP3	-1.63832D 05	S2FP4	-1.33404D 05
S2FP5	-3.32558D 04	S2FN	-3.84992D 01
S2P1P2	1.01306D-02	S2P1P3	1.31583D-03
S2P1P4	-1.80632D-03	S2P1P5	-1.58047D-03
S2P1N	-3.37619D-07	S2P2P3	4.35513D-03
S2P2P4	2.17962D-03	S2P2P5	5.43721D-04
S2P2N	8.94522D-08	S2P3P4	3.75476D-03
S2P3P5	1.66349D-03	S2P3N	2.50321D-07
S2P4P5	1.82051D-03	S2P4N	1.60947D-07
S2P5N	-6.28024D-09		

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K TTS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-0-1		
0	1.04911800 03	1.04906570 03	5.22221D-02	4.97772D-05
1	4.07646950 02	4.07609020 02	3.79332D-02	9.30541D-05
2	2.21851350 02	2.21838200 02	1.31407D-02	5.92319D-05
3	1.37061180 02	1.37062160 02	-9.73925D-04	-7.10576D-06
4	8.83701380 01	8.83729190 01	-2.78179D-03	-3.14789D-05
5	5.77449780 01	5.77479780 01	-3.00012D-03	-5.19547D-05
6	3.78627050 01	3.78652060 01	-2.50020D-03	-6.60333D-05
7	2.48302730 01	2.48329260 01	-2.65275D-03	-1.06835D-04
8	1.62755160 01	1.62749560 01	5.60049D-04	3.44105D-05
9	1.06577530 01	1.06580280 01	-2.75602D-04	-2.58593D-05
10	6.97507660 00	6.97520190 00	-1.25268D-04	-1.79594D-05
11	4.56244920 00	4.56279930 00	-3.50070D-04	-7.67286D-05
12	2.98380040 00	2.98374430 00	5.61558D-05	1.88202D-05
13	1.95087480 00	1.95071220 00	1.62569D-04	8.33314D-05
		RUN NO. N2-0-2		
0	8.96518130 02	8.96140640 02	3.77497D-01	4.21070D-04
1	3.70769700 02	3.70730090 02	3.96155D-02	1.06847D-04
2	2.07034590 02	2.07015670 02	1.89136D-02	9.13550D-05
3	1.29041860 02	1.29034920 02	6.93699D-03	5.37576D-05
4	8.34369520 01	8.34351360 01	1.81584D-03	2.17630D-05
5	5.45664200 01	5.45658070 01	6.13235D-04	1.12383D-05
6	3.57833000 01	3.57835010 01	-2.00913D-04	-5.61471D-06
7	2.34652790 01	2.34661140 01	-8.35159D-04	-3.55913D-05
8	1.53761390 01	1.53775420 01	-1.40283D-03	-9.12340D-05
9	1.00680770 01	1.00693780 01	-1.30070D-03	-1.29191D-04
10	6.58969900 00	6.58947760 00	2.21424D-04	3.36016D-05
11	4.31026810 00	4.31025550 00	1.26744D-05	2.94051D-06
12	2.81841160 00	2.81849770 00	-8.61017D-05	-3.05497D-05
13	1.84263080 00	1.84263270 00	-1.90119D-06	-1.03178D-06

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.(	REL. ERROR IN P
		RUN NO. N2-0-3		
0	7.5573333D 02	7.5564277D 02	9.05549D-02	1.19824D-04
1	3.3395080D 02	3.3395054D 02	2.62182D-04	7.85091D-07
2	1.9136408D 02	1.9136074D 02	3.34319D-03	1.74703D-05
3	1.2032719D 02	1.2032854D 02	-1.35432D-03	-1.12553D-05
4	7.8024112D 01	7.8025020D 01	-9.07688D-04	-1.16334D-05
5	5.1066852D 01	5.1067260D 01	-4.07981D-04	-7.98916D-06
6	3.3492119D 01	3.3492621D 01	-5.02023D-04	-1.49893D-05
7	2.1962772D 01	2.1961769D 01	1.00378D-03	4.57038D-05
8	1.4389828D 01	1.4389939D 01	-1.10498D-04	-7.67888D-06
9	9.4213797D 00	9.4216706D 00	-2.90972D-04	-3.08842D-05
10	6.1648525D 00	6.1651118D 00	-2.59249D-04	-4.20528D-05
11	4.0323212D 00	4.0324401D 00	-1.18939D-04	-2.94965D-05
12	2.6367190D 00	2.6367284D 00	-9.40082D-06	-3.56535D-06
13	1.7238170D 00	1.7237524D 00	6.45764D-05	3.74613D-05
		RUN NO. N2-0-4		
0	6.2451763D 02	6.2452329D 02	-5.65774D-03	-9.05937D-06
1	2.9613727D 02	2.9614895D 02	-1.16752D-02	-3.94251D-05
2	1.7423640D 02	1.7424088D 02	-4.48417D-03	-2.57361D-05
3	1.1053717D 02	1.1054115D 02	-3.98211D-03	-3.60251D-05
4	7.1877782D 01	7.1880136D 01	-2.35413D-03	-3.27519D-05
5	4.7078896D 01	4.7079967D 01	-1.07058D-03	-2.27402D-05
6	3.0878384D 01	3.0879321D 01	-9.37190D-04	-3.03510D-05
7	2.0244692D 01	2.0245566D 01	-8.74136D-04	-4.31785D-05
8	1.3262305D 01	1.3263427D 01	-1.12141D-03	-8.45564D-05
9	8.6819930D 00	8.6829978D 00	-1.00486D-03	-1.15741D-04
10	5.6812226D 00	5.6812222D 00	3.39040D-07	5.96772D-08
11	3.7157865D 00	3.7156936D 00	9.29162D-05	2.50058D-05
12	2.4296532D 00	2.4295040D 00	1.49205D-04	6.14101D-05
13	1.5883372D 00	1.5882316D 00	1.05540D-04	6.64468D-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K TTS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-0-5		
0	4.89024360 02	4.88928980 02	9.538330-02	1.950480-04
1	2.51970590 02	2.51935620 02	3.496850-02	1.387800-04
2	1.52738770 02	1.52721530 02	1.723920-02	1.128670-04
3	9.78660740 01	9.78561260 01	9.948030-03	1.016490-04
4	6.38333180 01	6.38265850 01	6.732320-03	1.054670-04
5	4.18418970 01	4.18353810 01	6.516170-03	1.557330-04
6	2.74424330 01	2.74389490 01	3.483650-03	1.269440-04
7	1.79882280 01	1.79862110 01	2.016610-03	1.121070-04
8	1.17814380 01	1.17807310 01	7.062320-04	5.994450-05
9	7.71114920 00	7.71100680 00	1.424060-04	1.846760-05
10	5.04427070 00	5.04461650 00	-3.458290-04	-6.855880-05
11	3.29889940 00	3.29904190 00	-1.425210-04	-4.320270-05
12	2.15684050 00	2.15694660 00	-1.061230-04	-4.920310-05
13	1.40982940 00	1.40999660 00	-1.671980-04	-1.185950-04
		RUN NO. N2-0-6		
0	8.93204270 02	8.93398810 02	-1.945390-01	-2.177990-04
1	3.69989290 02	3.70041840 02	-5.255310-02	-1.420400-04
2	2.06716430 02	2.06731070 02	-1.464360-02	-7.083900-05
3	1.28870740 02	1.28878740 02	-8.000090-03	-6.207840-05
4	8.33335350 01	8.33385730 01	-5.038370-03	-6.046030-05
5	5.45008100 01	5.45034690 01	-2.659450-03	-4.879640-05
6	3.57411640 01	3.57427010 01	-1.536070-03	-4.297770-05
7	2.34380770 01	2.34393240 01	-1.246770-03	-5.319410-05
8	1.53587550 01	1.53599530 01	-1.197100-03	-7.794280-05
9	1.00567750 01	1.00578420 01	-1.066770-03	-1.060740-04
10	6.58266850 00	6.58191860 00	7.499380-04	1.139260-04
11	4.30560650 00	4.30530660 00	2.998980-04	6.965290-05
12	2.81541110 00	2.81525960 00	1.514600-04	5.379670-05
13	1.84060600 00	1.84051490 00	9.104110-05	4.946260-05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-0-7		
0	1.03919440 03	1.03928640 03	-9.20058D-02	-8.85357D-05
1	4.05356430 02	4.05331140 02	2.52960D-02	6.24044D-05
2	2.20967510 02	2.20945990 02	2.15162D-02	9.73725D-05
3	1.36594420 02	1.36584910 02	9.50778D-03	6.96059D-05
4	8.80863910 01	8.80807570 01	5.63451D-03	6.39657D-05
5	5.75667880 01	5.75600020 01	6.78590D-03	1.17879D-04
6	3.77465880 01	3.77422940 01	4.29357D-03	1.13747D-04
7	2.47546870 01	2.47522300 01	2.45687D-03	9.92487D-05
8	1.62230270 01	1.62219710 01	1.05639D-03	6.51166D-05
9	1.06233860 01	1.06232710 01	1.15065D-04	1.08313D-05
10	6.95229570 00	6.95242500 00	-1.29367D-04	-1.86079D-05
11	4.54761960 00	4.54788600 00	-2.66477D-04	-5.85971D-05
12	2.97378390 00	2.97398580 00	-2.01927D-04	-6.79025D-05
13	1.94424880 00	1.94432950 00	-8.07585D-05	-4.15371D-05
		RUN NO. N2-0-8		
0	9.02967590 02	9.03027940 02	-6.03491D-02	-6.68342D-05
1	3.72441360 02	3.72454290 02	-1.29270D-02	-3.47088D-05
2	2.07729990 02	2.07727320 02	2.67147D-03	1.28603D-05
3	1.29424590 02	1.29425120 02	-5.34842D-04	-4.13246D-06
4	8.36759800 01	8.36763020 01	-3.22681D-04	-3.85631D-06
5	5.47222180 01	5.47214780 01	7.40367D-04	1.35296D-05
6	3.58862570 01	3.58853840 01	8.72565D-04	2.43147D-05
7	2.35334900 01	2.35330140 01	4.75898D-04	2.02222D-05
8	1.54214530 01	1.54214640 01	-1.10099D-05	-7.13936D-07
9	1.00996300 01	1.00981870 01	1.44346D-03	1.42922D-04
10	6.60887040 00	6.60835380 00	5.16627D-04	7.81717D-05
11	4.32265730 00	4.32261360 00	4.36387D-05	1.00953D-05
12	2.82654400 00	2.82658380 00	-3.97191D-05	-1.40522D-05
13	1.84772680 00	1.84792130 00	-1.94491D-04	-1.05260D-04

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-0-9		
0	7.5512263D 02	7.5533751D 02	-2.14882D-01	-2.84566D-04
1	3.3378867D 02	3.3386689D 02	-7.82201D-02	-2.34340D-04
2	1.9129299D 02	1.9132405D 02	-3.10647D-02	-1.62393D-04
3	1.2028948D 02	1.2030787D 02	-1.83834D-02	-1.52826D-04
4	7.8001056D 01	7.8012107D 01	-1.10504D-02	-1.41670D-04
5	5.1052284D 01	5.1058895D 01	-6.61160D-03	-1.29506D-04
6	3.3482697D 01	3.3487141D 01	-4.44417D-03	-1.32730D-04
7	2.1955023D 01	2.1958170D 01	-3.14694D-03	-1.43336D-04
8	1.4384788D 01	1.4387576D 01	-2.78832D-03	-1.93838D-04
9	9.4177022D 00	9.4201215D 00	-2.41938D-03	-2.56897D-04
10	6.1655865D 00	6.1640969D 00	1.48956D-03	2.41592D-04
11	4.0325246D 00	4.0317758D 00	7.48879D-04	1.85710D-04
12	2.6366145D 00	2.6362937D 00	3.20767D-04	1.21659D-04
13	1.7236216D 00	1.7234682D 00	1.53454D-04	8.90298D-05
		RUN NO. N2-0-10		
0	6.2399152D 02	6.2397051D 02	2.10075D-02	3.36662D-05
1	2.9598371D 02	2.9598064D 02	3.07404D-03	1.03858D-05
2	1.7416687D 02	1.7416213D 02	4.74288D-03	2.72318D-05
3	1.0499916D 02	1.0499549D 02	3.67037D-03	3.32163D-05
4	7.1853787D 01	7.1851324D 01	2.46349D-03	3.42848D-05
5	4.7063559D 01	4.7061240D 01	2.31919D-03	4.92779D-05
6	3.0873644D 01	3.0867042D 01	6.60219D-03	2.13846D-04
7	2.0241165D 01	2.0237502D 01	3.66256D-03	1.80946D-04
8	1.3260062D 01	1.3258134D 01	1.92824D-03	1.45417D-04
9	8.6802444D 00	8.6795277D 00	7.16719D-04	8.25690D-05
10	5.6791288D 00	5.6789492D 00	1.79603D-04	3.16252D-05
11	3.7140311D 00	3.7142058D 00	-1.74634D-04	-4.70202D-05
12	2.4283003D 00	2.4285307D 00	-2.30428D-04	-9.48925D-05
13	1.5873627D 00	1.5875951D 00	-2.32430D-04	-1.46426D-04

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-0-11		
0	4.9073799D 02	4.90795690 02	-5.76958D-02	-1.17569D-04
1	2.5257830D 02	2.52590230 02	-1.19363D-02	-4.72579D-05
2	1.5304574D 02	1.53052760 02	-7.01610D-03	-4.58432D-05
3	9.8051650D 01	9.80544890 01	-2.83903D-03	-2.89544D-05
4	6.3952360D 01	6.39532350 01	-8.74731D-04	-1.36778D-05
5	4.1918192D 01	4.19180020 01	1.89546D-04	4.52180D-06
6	2.7493546D 01	2.74931690 01	3.77063D-04	1.37146D-05
7	1.8021436D 01	1.80218170 01	-3.80340D-04	-2.11049D-05
8	1.1803278D 01	1.18040940 01	-8.16515D-04	-6.91770D-05
9	7.7252959D 00	7.72632030 00	-1.02434D-03	-1.32596D-04
10	5.0548949D 00	5.05464500 00	2.49944D-04	4.94459D-05
11	3.3057158D 00	3.30560490 00	1.10852D-04	3.35336D-05
12	2.1613232D 00	2.16123960 00	8.35974D-05	3.86788D-05
13	1.4128642D 00	1.41280380 00	6.03255D-05	4.26973D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 3.42442D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.5302540ID 00	S2N	2.34485D-10	SN	1.53129D-05
B	-9.990388690 00	S2B	5.94171D-03	SB	7.70825D-02
C	1.3835011 8D 03	S2C	6.02828D 02	SC	2.45526D 01
D	2.43162097D 04	S2D	1.15259D 07	SD	3.39498D 03
E	1.41655539D 05	S2E	3.86412D 10	SE	1.96574D 05
F	7.78247904D 07	S2F	1.64952D 13	SF	4.06143D 06
P1	1.04906575D 03	S2P1	2.50849D-02	SP1	1.58382D-01
P2	8.96140638D 02	S2P2	8.35779D-03	SP2	9.14210D-02
P3	7.55642772D 02	S2P3	5.53863D-03	SP3	7.44220D-02
P4	6.24523288D 02	S2P4	3.72314D-03	SP4	6.10175D-02
P5	4.88928975D 02	S2P5	1.52531D-03	SP5	3.90552D-02
P6	8.93398810D 02	S2P6	8.24249D-03	SP6	9.07882D-02
P7	1.03928637D 03	S2P7	2.31044D-02	SP7	1.52001D-01
P8	9.0302794ID 02	S2P8	8.64982D-03	SP8	9.30044D-02
P9	7.553375120 02	S2P9	5.53436D-03	SP9	7.43933D-02
P10	6.2397051 1D 02	S2P10	3.71378D-03	SP10	6.09408D-02
P11	4.90795690C 02	S2P11	1.54900D-03	SP11	3.93573D-02

COVARIANCES

S2BC	-1.81849D 00	S2BD	2.35286D 02
S2BE	-1.26378D 04	S2BF	2.46180D 05

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

COVARIANCES

S2BP1	2.77969D-03	S2BP2	-5.22320D-04
S2BP3	-1.55179D-03	S2BP4	-1.16861D-03
S2BP5	-1.42813D-04	S2BP6	-5.61166D-04
S2BP7	2.49446D-03	S2BP8	-4.25981D-04
S2BP9	-1.55265D-03	S2BP10	-1.16494D-03
S2BP11	-1.56466D-04	S2BN	-1.07653D-06
S2CD	-8.18850D 04	S2CE	4.55908D 06
S2CF	-9.05903D 07	S2CP1	-1.16949D 00
S2CP2	1.93571D-01	S2CP3	6.41504D-01
S2CP4	5.06741D-01	S2CP5	8.62467D-02
S2CP6	2.09875D-01	S2CP7	-1.05282D 00
S2CP8	1.53086D-01	S2CP9	6.41873D-01
S2CP10	5.05306D-01	S2CP11	9.20850D-02
S2CN	3.00397D-04	S2DE	-6.59856D 08
S2DF	1.33480D 10	S2DP1	1.95834D 02
S2DP2	-2.69315D 01	S2DP3	-1.04206D 02
S2DP4	-8.68097D 01	S2DP5	-1.99527D 01
S2DP6	-2.96455D 01	S2DP7	1.76949D 02
S2DP8	-2.01959D 01	S2DP9	-1.04274D 02
S2DP10	-8.65934D 01	S2DP11	-2.09191D 01
S2DN	-3.71900D-02	S2EF	-7.93825D 11
S2EP1	-1.31654D 04	S2EP2	1.36790D 03
S2EP3	6.67443D 03	S2EP4	5.86466D 03
S2EP5	1.69450D 03	S2EP6	1.54815D 03
S2EP7	-1.19448D 04	S2EP8	9.20940D 02
S2EP9	6.67943D 03	S2EP10	5.85188D 03
S2EP11	1.75704D 03	S2EN	1.93286D 00
S2FP1	3.04721D 05	S2FP2	-1.99717D 04
S2FP3	-1.43694D 05	S2FP4	-1.32346D 05
S2FP5	-4.41558D 04	S2FP6	-2.40606D 04
S2FP7	2.77669D 05	S2FP8	-9.84334D 03
S2FP9	-1.43820D 05	S2FP10	-1.32089D 05
S2FP11	-4.55198D 04	S2FN	-3.71664D 01
S2P1P2	7.58351D-03	S2P1P3	7.76829D-04
S2P1P4	-1.83908D-03	S2P1P5	-1.55252D-03
S2P1P6	7.40240D-03	S2P1P7	1.90365D-02
S2P1P8	8.02462D-03	S2P1P9	7.65171D-04
S2P1P10	-1.84317D-03	S2P1P11	-1.57028D-03
S2P1N	-3.79553D-07	S2P2P3	3.15502D-03
S2P2P4	1.57035D-03	S2P2P5	3.97966D-04
S2P2P6	5.12681D-03	S2P2P7	7.42384D-03
S2P2P8	5.27351D-03	S2P2P9	3.15020D-03
S2P2P10	1.56450D-03	S2P2P11	4.09921D-04

TABLE 8. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

COVARIANCES

S2P2N	7.54556D-08	S2P3P4	2.88346D-03
S2P3P5	1.33927D-03	S2P3P6	3.18000D-03
S2P3P7	9.89048D-04	S2P3P8	3.09050D-03
S2P3P9	3.65285D-03	S2P3P10	2.87823D-03
S2P3P11	1.36178D-03	S2P3N	2.13242D-07
S2P4P5	1.50278D-03	S2P4P6	1.61333D-03
S2P4P7	-1.55730D-03	S2P4P8	1.46270D-03
S2P4P9	2.88443D-03	S2P4P10	2.69409D-03
S2P4P11	1.52257D-03	S2P4N	1.57489D-07
S2P5P6	4.24773D-04	S2P5P7	-1.39888D-03
S2P5P8	3.31313D-04	S2P5P9	1.34040D-03
S2P5P10	1.50215D-03	S2P5P11	1.07843D-03
S2P5N	1.91327D-08	S2P6P7	7.25355D-03
S2P6P8	5.22524D-03	S2P6P9	3.17528D-03
S2P6P10	1.60748D-03	S2P6P11	4.37093D-04
S2P6N	8.07613D-08	S2P7P8	7.83835D-03
S2P7P9	9.77905D-04	S2P7P10	-1.56158D-03
S2P7P11	-1.41415D-03	S2P7N	-3.40019D-07
S2P8P9	3.08543D-03	S2P8P10	1.45687D-03
S2P8P11	3.42356D-04	S2P8N	6.23442D-08
S2P9P10	2.87920D-03	S2P9P11	1.36291D-03
S2P9N	2.13354D-07	S2P10P11	1.52191D-03
S2P10N	1.57006D-07	S2P11N	2.09020D-08

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	3.24368D-10	1.09221D-07	-6.60718D-06
2.0000 00	9.08886D-10	8.71344D-08	-4.85510D-06
5.0000 00	4.89048D-09	-1.50859D-07	1.06359D-05
1.0000 01	2.17208D-08	-6.59193D-07	4.09040D-05
2.5000 01	1.53414D-07	-1.49962D-06	7.02599D-05
5.0000 01	6.61714D-07	3.83935D-07	-1.28223D-04
7.5000 01	1.76548D-06	5.46987D-06	-5.43995D-04
1.0000 02	3.79011D-06	1.23078D-05	-1.05348D-03
1.2500 02	6.88576D-06	1.96251D-05	-1.55301D-03
1.5000 02	1.10002D-05	2.64108D-05	-1.96271D-03
2.0000 02	2.17357D-05	3.55556D-05	-2.29865D-03
2.5000 02	3.59434D-05	3.60560D-05	-1.80170D-03
3.0000 02	5.66377D-05	2.67197D-05	-4.21872D-04
3.5000 02	8.96675D-05	8.05283D-06	1.75081D-03
4.0000 02	1.41478D-04	-1.83259D-05	4.53664D-03
4.5000 02	2.16378D-04	-5.01053D-05	7.70192D-03
5.0000 02	3.14500D-04	-8.45779D-05	1.09839D-02
6.0000 02	5.57507D-04	-1.49969D-04	1.68000D-02
7.0000 02	8.00041D-04	-1.91305D-04	1.98315D-02
8.0000 02	1.00916D-03	-1.86993D-04	1.81112D-02
9.0000 02	1.33556D-03	-1.18125D-04	9.93915D-03
1.0000 03	2.27913D-03	3.12516D-05	-6.10293D-03

PRESSURE, ATM	S2DP
1.0000 00	1.38307D-04
2.0000 00	1.00275D-04
5.0000 00	-2.25857D-04
1.0000 01	-8.48986D-04
2.5000 01	-1.33505D-03
5.0000 01	3.19914D-03
7.5000 01	1.22183D-02
1.0000 02	2.28961D-02
1.2500 02	3.28984D-02
1.5000 02	4.04532D-02
2.0000 02	4.35878D-02
2.5000 02	2.69294D-02
3.0000 02	-1.00730D-02
3.5000 02	-6.47788D-02
4.0000 02	-1.32528D-01
4.5000 02	-2.07467D-01
5.0000 02	-2.83127D-01
6.0000 02	-4.09885D-01
7.0000 02	-4.60789D-01
8.0000 02	-3.88741D-01
9.0000 02	-1.53315D-01
1.0000 03	2.79031D-01

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.451960-10	1.39570D-07	-1.70136D-05
2.0000 00	2.934040-10	7.53331D-08	-7.88106D-06
5.0000 00	1.597000-09	-3.27588D-07	4.34291D-05
1.0000 01	8.312890-09	-9.71738D-07	1.14555D-04
2.5000 01	5.909060-08	-7.53322D-07	-6.73480D-06
5.0000 01	3.482240-07	5.54241D-06	-1.01229D-03
7.5000 01	1.126800-06	1.43248D-05	-2.19507D-03
1.0000 02	2.384770-06	2.12738D-05	-2.88439D-03
1.2500 02	4.026980-06	2.39663D-05	-2.74083D-03
1.5000 02	6.220000-06	2.14584D-05	-1.67318D-03
2.0000 02	1.433000-05	1.91681D-06	2.81419D-03
2.5000 02	3.060730-05	-2.99537D-05	8.94053D-03
3.0000 02	5.477950-05	-6.31059D-05	1.46017D-02
3.5000 02	8.303000-05	-8.71694D-05	1.79477D-02
4.0000 02	1.141950-04	-9.45309D-05	1.77138D-02
4.5000 02	1.551050-04	-8.11060D-05	1.33263D-02
5.0000 02	2.203670-04	-4.63860D-05	4.88817D-03
6.0000 02	4.802580-04	7.31993D-05	-2.08189D-02
7.0000 02	8.831550-04	2.12261D-04	-4.83530D-02
8.0000 02	1.198090-03	2.90916D-04	-6.17477D-02
9.0000 02	1.424380-03	2.15034D-04	-4.26754D-02
1.0000 03	3.010820-03	-1.13924D-04	2.77589D-02

PRESSURE, ATM	S2DP	S2EP
1.0000 00	8.982580-04	-1.50903D-02
2.0000 00	3.964290-04	-6.43083D-03
5.0000 00	-2.324080-03	3.93991D-02
1.0000 01	-5.864270-03	9.63569D-02
2.5000 01	2.447070-03	-6.50222D-02
5.0000 01	5.864030-02	-1.04084D 00
7.5000 01	1.187510-01	-2.01434D 00
1.0000 02	1.446390-01	-2.31579D 00
1.2500 02	1.184210-01	-1.65001D 00
1.5000 02	3.708680-02	6.86158D-03
2.0000 02	-2.569830-01	5.56507D 00
2.5000 02	-6.252530-01	1.21357D 01
3.0000 02	-9.333710-01	1.71748D 01
3.5000 02	-1.068150 00	1.86048D 01
4.0000 02	-9.566680-01	1.51538D 01
4.5000 02	-5.716760-01	6.44049D 00
5.0000 02	7.024770-02	-7.07265D 00
6.0000 02	1.873080 00	-4.31173D 01
7.0000 02	3.671400 00	-7.70078D 01
8.0000 02	4.381990 00	-8.71516D 01
9.0000 02	2.783150 00	-4.94881D 01
1.0000 03	-2.371480 00	6.03494D 01

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	4.12781D-09	3.16934D-06	-4.07949D-04
2.0000 00	1.03635D-08	1.64037D-06	-1.79362D-04
5.0000 00	6.04618D-08	-7.63856D-06	1.06586D-03
1.0000 01	2.83173D-07	-2.19508D-05	2.71568D-03
2.5000 01	1.92781D-06	-1.29762D-05	-7.83598D-04
5.0000 01	1.04331D-05	1.37267D-04	-2.57105D-02
7.5000 01	3.09417D-05	3.33233D-04	-5.29060D-02
1.0000 02	6.25598D-05	4.72154D-04	-6.57168D-02
1.2500 02	1.04090D-04	5.00822D-04	-5.65079D-02
1.5000 02	1.61567D-04	4.03227D-04	-2.41587D-02
2.0000 02	3.76039D-04	-1.18756D-04	9.48927D-02
2.5000 02	7.81243D-04	-8.75612D-04	2.43573D-01
3.0000 02	1.33907D-03	-1.58663D-03	3.66958D-01
3.5000 02	1.95857D-03	-2.01163D-03	4.20882D-01
4.0000 02	2.66063D-03	-1.99338D-03	3.78716D-01
4.5000 02	3.67562D-03	-1.46675D-03	2.32264D-01
5.0000 02	5.39029D-03	-4.51454D-04	-1.01851D-02
6.0000 02	1.21367D-02	2.62886D-03	-6.85992D-01
7.0000 02	2.21496D-02	5.95639D-03	-1.37015D 00
8.0000 02	2.95229D-02	7.79733D-03	-1.70588D 00
9.0000 02	3.16814D-02	6.28647D-03	-1.31771D 00
1.0000 03	4.88823D-02	-3.85638D-04	1.53617D-01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	2.28481D-02	-4.01043D-01
2.0000 00	9.56115D-03	-1.61170D-01
5.0000 00	-6.04083D-02	1.07142D 00
1.0000 01	-1.47290D-01	2.52759D 00
2.5000 01	9.57862D-02	-2.33871D 00
5.0000 01	1.55980D 00	-2.88793D 01
7.5000 01	3.00244D 00	-5.31173D 01
1.0000 02	3.42834D 00	-5.68365D 01
1.2500 02	2.42040D 00	-3.29432D 01
1.5000 02	-2.87090D-02	1.78769D 01
2.0000 02	-8.08023D 00	1.75206D 02
2.5000 02	-1.73635D 01	3.46844D 02
3.0000 02	-2.42344D 01	4.61408D 02
3.5000 02	-2.58808D 01	4.65460D 02
4.0000 02	-2.07223D 01	3.30735D 02
4.5000 02	-8.43620D 00	5.41763D 01
5.0000 02	1.01954D 01	-3.45361D 02
6.0000 02	5.91488D 01	-1.35533D 03
7.0000 02	1.05994D 02	-2.27786D 03
8.0000 02	1.25690D 02	-2.59958D 03
9.0000 02	9.22659D 01	-1.79327D 03
1.0000 03	-1.88999D 01	6.37712D 02

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	3.103730-10	3.30494D-07	-4.418630-05
2.0000 00	6.293130-10	1.50516D-07	-1.640280-05
5.0000 00	3.652330-09	-8.80405D-07	1.26994D-04
1.0000 01	1.891290-08	-2.40717D-06	3.067920-04
2.5000 01	1.337280-07	-1.00465D-06	-1.622160-04
5.0000 01	8.407130-07	1.61966D-05	-3.098720-03
7.5000 01	2.667780-06	3.74581D-05	-6.091080-03
1.0000 02	5.466120-06	5.11656D-05	-7.194360-03
1.2500 02	9.187910-06	5.17252D-05	-5.603860-03
1.5000 02	1.464130-05	3.79364D-05	-1.314650-03
2.0000 02	3.633820-05	-2.43664D-05	1.309940-02
2.5000 02	7.693400-05	-1.07446D-04	2.972380-02
3.0000 02	1.305210-04	-1.78677D-04	4.198680-02
3.5000 02	1.897660-04	-2.12672D-04	4.512440-02
4.0000 02	2.631100-04	-1.95176D-04	3.678400-02
4.5000 02	3.793740-04	-1.23043D-04	1.690570-02
5.0000 02	5.755440-04	-2.49560D-06	-1.269290-02
6.0000 02	1.271530-03	3.25577D-04	-8.730360-02
7.0000 02	2.139520-03	6.34075D-04	-1.524510-01
8.0000 02	2.665540-03	7.39934D-04	-1.688910-01
9.0000 02	3.156190-03	4.63562D-04	-9.893140-02
1.0000 03	6.603250-03	-3.55833D-04	9.068800-02

PRESSURE, ATM	S2DP	S2EP
1.0000 00	2.590250-03	-4.725870-02
2.0000 00	9.045440-04	-1.557010-02
5.0000 00	-7.513750-03	1.385630-01
1.0000 01	-1.733850-02	3.078270-01
2.5000 01	1.591140-02	-3.832180-01
5.0000 01	1.950660-01	-3.759760 00
7.5000 01	3.573880-01	-6.543770 00
1.0000 02	3.820470-01	-6.438760 00
1.2500 02	2.247230-01	-2.687960 00
1.5000 02	-1.063580-01	4.423960 00
2.0000 02	-1.111750 00	2.478650 01
2.5000 02	-2.173690 00	4.490630 01
3.0000 02	-2.839810 00	5.556830 01
3.5000 02	-2.798700 00	5.068800 01
4.0000 02	-1.914750 00	2.792500 01
4.5000 02	-2.150840-01	-1.165750 01
5.0000 02	2.142510 00	-6.429970 01
6.0000 02	7.759130 00	-1.847750 02
7.0000 02	1.232560 01	-2.763960 02
8.0000 02	1.295880 01	-2.772030 02
9.0000 02	6.929070 00	-1.291280 02
1.0000 03	-8.148220 00	2.181880 02

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	9.074810-10	8.882700-07	-1.225060-04
2.0000 00	2.010510-09	4.122860-07	-4.650470-05
5.0000 00	1.174880-08	-2.313320-06	3.448790-04
1.0000 01	5.792600-08	-6.295810-06	8.267400-04
2.5000 01	4.027030-07	-2.077750-06	-5.280690-04
5.0000 01	2.429710-06	4.406750-05	-8.585110-03
7.5000 01	7.435790-06	9.894900-05	-1.640230-02
1.0000 02	1.497000-05	1.311970-04	-1.860370-02
1.2500 02	2.512930-05	1.265860-04	-1.314980-02
1.5000 02	4.038300-05	8.322940-05	-3.047300-04
2.0000 02	1.008030-04	-9.170670-05	4.020720-02
2.5000 02	2.093770-04	-3.091860-04	8.394480-02
3.0000 02	3.478940-04	-4.800750-04	1.127340-01
3.5000 02	5.025420-04	-5.413180-04	1.147400-01
4.0000 02	7.040380-04	-4.636590-04	8.551350-02
4.5000 02	1.026690-03	-2.484550-04	2.700380-02
5.0000 02	1.548770-03	7.944950-05	-5.409170-02
6.0000 02	3.247600-03	9.008360-04	-2.431140-01
7.0000 02	5.235720-03	1.589950-03	-3.883100-01
8.0000 02	6.825570-03	1.714150-03	-3.949620-01
9.0000 02	9.920590-03	8.859120-04	-1.800180-01
1.0000 03	2.254610-02	-1.214220-03	3.238900-01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	7.434760-03	-1.387790-01
2.0000 00	2.652660-03	-4.612090-02
5.0000 00	-2.116040-02	4.014110-01
1.0000 01	-4.840810-02	8.790240-01
2.5000 01	4.989850-02	-1.231870 00
5.0000 01	5.566030-01	-1.104990 01
7.5000 01	9.890750-01	-1.855500 01
1.0000 02	1.003520 00	-1.704910 01
1.2500 02	4.874830-01	-4.636990 00
1.5000 02	-5.153740-01	1.739290 01
2.0000 02	-3.396200 00	7.704050 01
2.5000 02	-6.225670 00	1.312040 02
3.0000 02	-7.725610 00	1.532740 02
3.5000 02	-7.116950 00	1.279540 02
4.0000 02	-4.171270 00	5.199410 01
4.5000 02	8.754060-01	-6.790050 01
5.0000 02	7.450370 00	-2.179360 02
6.0000 02	2.192640 01	-5.334780 02
7.0000 02	3.203290 01	-7.316440 02
8.0000 02	3.060990 01	-6.537590 02
9.0000 02	1.147220 01	-1.643040 02
1.0000 03	-3.033870 01	8.443600 02

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	9.660450-10	9.869990-07	-1.404330-04
2.0000 00	2.039770-09	5.356540-07	-6.513300-05
5.0000 00	1.120620-08	-2.208970-06	3.427200-04
1.0000 01	5.537460-08	-6.277950-06	8.538680-04
2.5000 01	3.851490-07	-2.061670-06	-5.374860-04
5.0000 01	2.327070-06	4.426220-05	-8.809250-03
7.5000 01	7.068980-06	9.756130-05	-1.646440-02
1.0000 02	1.413200-05	1.254200-04	-1.783470-02
1.2500 02	2.386020-05	1.141130-04	-1.098520-02
1.5000 02	3.900730-05	6.329020-05	3.464120-03
2.0000 02	9.919360-05	-1.211940-04	4.602650-02
2.5000 02	2.022650-04	-3.312550-04	8.800550-02
3.0000 02	3.283370-04	-4.744730-04	1.104410-01
3.5000 02	4.740520-04	-4.936870-04	1.027880-01
4.0000 02	6.835460-04	-3.707780-04	6.306690-02
4.5000 02	1.030730-03	-1.190580-04	-4.107640-03
5.0000 02	1.572530-03	2.270550-04	-8.987990-02
6.0000 02	3.170480-03	1.012380-03	-2.721210-01
7.0000 02	4.831970-03	1.582220-03	-3.912640-01
8.0000 02	6.192740-03	1.565870-03	-3.651200-01
9.0000 02	9.354880-03	6.675030-04	-1.295810-01
1.0000 03	2.105240-02	-1.331150-03	3.617090-01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	8.820760-03	-1.674260-01
2.0000 00	3.882820-03	-6.866570-02
5.0000 00	-2.188720-02	4.269470-01
1.0000 01	-5.194070-02	9.611640-01
2.5000 01	5.275440-02	-1.382000 00
5.0000 01	5.903700-01	1.208620 01
7.5000 01	1.022080 00	-1.961720 01
1.0000 02	9.742660-01	-1.652870 01
1.2500 02	3.413110-01	-1.106320 00
1.5000 02	-8.035320-01	2.461690 01
2.0000 02	-3.890990 00	8.988650 01
2.5000 02	-6.623880 00	1.422740 02
3.0000 02	-7.640780 00	1.528940 02
3.5000 02	-6.250870 00	1.083410 02
4.0000 02	-2.415290 00	9.763910 00
4.5000 02	3.417160 00	1.310480 02
5.0000 02	1.049430 01	2.958650 02
6.0000 02	2.473120 01	6.119180 02
7.0000 02	3.297740 01	7.695850 02
8.0000 02	2.887080 01	6.246820 02
9.0000 02	7.529720 00	-6.803130 01
1.0000 03	3.452090 01	9.770710 02

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.363620-09	1.403800-06	-2.055660-04
2.0000 00	2.903310-09	7.216390-07	-8.890840-05
5.0000 00	1.626360-08	-3.303380-06	5.259850-04
1.0000 01	8.019330-08	-9.136390-06	1.274000-03
2.5000 01	5.581010-07	-2.001320-06	-9.820160-04
5.0000 01	3.422060-06	6.731240-05	-1.361480-02
7.5000 01	1.033080-05	1.439110-04	-2.467710-02
1.0000 02	2.054180-05	1.790280-04	-2.544500-02
1.2500 02	3.496070-05	1.533570-04	-1.324900-02
1.5000 02	5.814690-05	6.858980-05	1.045900-02
2.0000 02	1.499760-04	-2.151400-04	7.633600-02
2.5000 02	3.006160-04	-5.136760-04	1.359560-01
3.0000 02	4.802490-04	-6.882520-04	1.605310-01
3.5000 02	6.986440-04	-6.641930-04	1.365950-01
4.0000 02	1.036070-03	-4.299670-04	6.470440-02
4.5000 02	1.597040-03	-1.976690-05	-4.491300-02
5.0000 02	2.437870-03	5.054740-04	-1.767090-01
6.0000 02	4.729950-03	1.608480-03	-4.366100-01
7.0000 02	6.939940-03	2.308850-03	-5.821230-01
8.0000 02	8.919770-03	2.136140-03	-5.071640-01
9.0000 02	1.396610-02	7.496490-04	-1.368560-01
1.0000 03	3.087200-02	-2.078320-03	5.775180-01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	1.324870-02	-2.541070-01
2.0000 00	5.402730-03	-9.454340-02
5.0000 00	-3.445570-02	6.818730-01
1.0000 01	-7.939600-02	1.479660 00
2.5000 01	9.312360-02	-2.465880 00
5.0000 01	9.325980-01	-1.946330 01
7.5000 01	1.560040 00	-3.031170 01
1.0000 02	1.387960 00	-2.313700 01
1.2500 02	2.751730-01	4.185100 00
1.5000 02	-1.623930 00	4.747080 01
2.0000 02	-6.466080 00	1.510460 02
2.5000 02	-1.033020 01	2.241440 02
3.0000 02	-1.112230 01	2.219270 02
3.5000 02	-7.984390 00	1.284470 02
4.0000 02	-1.142080 00	-4.773130 01
4.5000 02	8.456700 00	-2.821550 02
5.0000 02	1.948570 01	-5.424310 02
6.0000 02	4.006670 01	-1.003450 03
7.0000 02	4.989690 01	-1.180150 03
8.0000 02	4.062690 01	-8.806450 02
9.0000 02	6.477160 00	2.570720 01
1.0000 03	-5.623050 01	1.620410 03

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	7.85688D-10	1.21632D-06	-2.85027D-04
2.0000 00	1.63778D-09	5.04801D-07	-9.84473D-05
5.0000 00	9.80936D-09	-2.98179D-06	7.29377D-04
1.0000 01	4.56483D-08	-6.52459D-06	1.35554D-03
2.5000 01	3.29557D-07	9.17858D-06	-3.83894D-03
5.0000 01	2.07912D-06	6.61095D-05	-1.79234D-02
7.5000 01	5.35333D-06	8.23103D-05	-1.64846D-02
1.0000 02	1.11425D-05	3.11054D-05	5.73858D-03
1.2500 02	2.24620D-05	-6.82126D-05	4.04360D-02
1.5000 02	4.01016D-05	-1.78676D-04	7.48302D-02
2.0000 02	8.55261D-05	-3.00682D-04	1.01141D-01
2.5000 02	1.52462D-04	-1.92272D-04	4.56595D-02
3.0000 02	2.84769D-04	1.04345D-04	-6.87832D-02
3.5000 02	4.91128D-04	4.53425D-04	-1.91576D-01
4.0000 02	7.28657D-04	7.16932D-04	-2.75044D-01
4.5000 02	9.75613D-04	8.02214D-04	-2.89377D-01
5.0000 02	1.28526D-03	6.73710D-04	-2.25388D-01
6.0000 02	2.48396D-03	-1.30348D-04	9.24677D-02
7.0000 02	4.51441D-03	-1.21833D-03	4.92696D-01
8.0000 02	6.40307D-03	-1.89169D-03	7.20399D-01
9.0000 02	8.61275D-03	-1.44806D-03	5.25706D-01
1.0000 03	1.84526D-02	7.26855D-04	-3.06517D-01

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	3.14585D-02	-1.46623D 00	2.49674D 01
2.0000 00	1.01310D-02	-4.48443D-01	7.51919D 00
5.0000 00	-8.06935D-02	3.76158D 00	-6.36612D 01
1.0000 01	-1.38412D-01	6.06450D 00	-9.93671D 01
2.5000 01	4.95564D-01	-2.53877D 01	4.47525D 02
5.0000 01	1.97374D 00	-9.09170D 01	1.50662D 03
7.5000 01	1.37447D 00	-4.76062D 01	6.05900D 02
1.0000 02	-1.71926D 00	1.16852D 02	-2.36840D 03
1.2500 02	-6.08675D 00	3.34122D 02	-6.12772D 03
1.5000 02	-1.00408D 01	5.15937D 02	-9.07753D 03
2.0000 02	-1.15908D 01	5.20251D 02	-8.17496D 03
2.5000 02	-2.21500D 00	4.61998D 01	2.95693D 03
3.0000 02	1.41562D 01	-9.38237D 02	1.93385D 04
3.5000 02	3.03366D 01	-1.75768D 03	3.34686D 04
4.0000 02	3.99495D 01	-2.16791D 03	3.92404D 04
4.5000 02	3.92814D 01	-1.98630D 03	3.35510D 04
5.0000 02	2.75161D 01	-1.19065D 03	1.63333D 04
6.0000 02	-2.14699D 01	1.73393D 03	-4.18893D 04
7.0000 02	-7.88452D 01	4.93853D 03	-1.02144D 05
8.0000 02	-1.08009D 02	6.34617D 03	-1.24237D 05
9.0000 02	-7.38593D 01	4.00080D 03	-7.08409D 04
1.0000 03	5.34078D 01	-3.73907D 03	8.90820D 04

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	9.83223D-10	1.62489D-06	-3.89964D-04
2.0000 00	1.77882D-09	8.90755D-07	-1.90343D-04
5.0000 00	9.19735D-09	-3.09337D-06	7.82316D-04
1.0000 01	4.37855D-08	-7.39617D-06	1.59285D-03
2.5000 01	3.18843D-07	9.59957D-06	-4.15625D-03
5.0000 01	2.07799D-06	7.25745D-05	-1.99015D-02
7.5000 01	5.38523D-06	8.66911D-05	-1.70555D-02
1.0000 02	1.14606D-05	2.31064D-05	9.75564D-03
1.2500 02	2.34904D-05	-9.12740D-05	4.92579D-02
1.5000 02	4.17692D-05	-2.09721D-04	8.53180D-02
2.0000 02	8.85507D-05	-3.06494D-04	9.98015D-02
2.5000 02	1.65354D-04	-1.34649D-04	2.03508D-02
3.0000 02	3.10871D-04	2.10030D-04	-1.10052D-01
3.5000 02	5.13513D-04	5.50245D-04	-2.26351D-01
4.0000 02	7.42892D-04	7.40511D-04	-2.79133D-01
4.5000 02	1.03077D-03	7.07805D-04	-2.46460D-01
5.0000 02	1.47532D-03	4.47765D-04	-1.30912D-01
6.0000 02	3.11293D-03	-5.45787D-04	2.61408D-01
7.0000 02	5.21757D-03	-1.61958D-03	6.58560D-01
8.0000 02	6.45440D-03	-2.06892D-03	8.01690D-01
9.0000 02	7.77733D-03	-1.27877D-03	4.70140D-01
1.0000 03	1.67344D-02	1.23371D-03	-5.06420D-01

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	4.41617D-02	-2.11410D 00	3.73785D 01
2.0000 00	2.06616D-02	-9.58067D-01	1.68250D 01
5.0000 00	-8.89684D-02	4.26610D 00	-7.48652D 01
1.0000 01	-1.67618D-01	7.55601D 00	-1.28928D 02
2.5000 01	5.52317D-01	-2.92100D 01	5.31767D 02
5.0000 01	2.23114D 00	-1.04908D 02	1.78943D 03
7.5000 01	1.37659D 00	-4.44884D 01	5.17951D 02
1.0000 02	-2.38748D 00	1.59564D 02	-3.27500D 03
1.2500 02	-7.38886D 00	4.11529D 02	-7.72968D 03
1.5000 02	-1.14665D 01	5.95887D 02	-1.06975D 04
2.0000 02	-1.10290D 01	4.72844D 02	-7.10352D 03
2.5000 02	1.95131D 00	-3.10206D 02	8.51908D 03
3.0000 02	2.05240D 01	-1.32705D 03	2.74602D 04
3.5000 02	3.54236D 01	-2.05728D 03	3.96889D 04
4.0000 02	4.00741D 01	-2.15311D 03	3.88206D 04
4.5000 02	3.19559D 01	-1.50260D 03	2.31500D 04
5.0000 02	1.20068D 01	-1.87692D 02	-5.27888D 03
6.0000 02	-4.91996D 01	3.54299D 03	-8.16281D 04
7.0000 02	-1.07105D 02	6.85106D 03	-1.45608D 05
8.0000 02	-1.23859D 02	7.53654D 03	-1.53394D 05
9.0000 02	-6.78579D 01	3.79407D 03	-6.94858D 04
1.0000 03	8.49261D 01	-5.73082D 03	1.32475D 05

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES. 0 DEGREES C (273.150 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	8.156160-10	1.31857D-06	-3.34382D-04
2.0000 00	1.652230-09	5.73359D-07	-1.24394D-04
5.0000 00	9.731940-09	-3.08224D-06	8.10797D-04
1.0000 01	4.515500-08	-6.64969D-06	1.48602D-03
2.5000 01	3.286020-07	1.09443D-05	-4.57785D-03
5.0000 01	2.064280-06	6.83850D-05	-1.93090D-02
7.5000 01	5.287200-06	7.20573D-05	-1.33334D-02
1.0000 02	1.163220-05	-3.09184D-08	1.66783D-02
1.2500 02	2.398110-05	-1.13059D-04	5.63101D-02
1.5000 02	4.150430-05	-2.15327D-04	8.72028D-02
2.0000 02	8.625560-05	-2.43353D-04	7.73523D-02
2.5000 02	1.732950-04	-6.79675D-06	-2.62263D-02
3.0000 02	3.285930-04	3.38384D-04	-1.57892D-01
3.5000 02	5.167250-04	6.00329D-04	-2.46326D-01
4.0000 02	7.249630-04	6.60404D-04	-2.51198D-01
4.5000 02	1.026440-03	4.87960D-04	-1.65689D-01
5.0000 02	1.531510-03	1.16247D-04	-6.15603D-03
6.0000 02	3.271680-03	-9.35164D-04	4.16139D-01
7.0000 02	5.243580-03	-1.84074D-03	7.59065D-01
8.0000 02	6.530940-03	-2.00236D-03	7.95766D-01
9.0000 02	8.919490-03	-9.63952D-04	3.56911D-01
1.0000 03	1.971310-02	1.59561D-03	-6.74596D-01

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	3.937300-02	-1.95697D 00	3.60932D 01
2.0000 00	1.378350-02	-6.53451D-01	1.19694D 01
5.0000 00	-9.553030-02	4.74568D 00	-8.68173D 01
1.0000 01	-1.610510-01	7.47711D 00	-1.33044D 02
2.5000 01	6.218940-01	-3.38439D 01	6.36900D 02
5.0000 01	2.224010 00	-1.07629D 02	1.90046D 03
7.5000 01	9.354920-01	-2.15718D 01	9.47325D 01
1.0000 02	-3.339480 00	2.15624D 02	-4.44569D 03
1.2500 02	-8.438190 00	4.77596D 02	-9.19822D 03
1.5000 02	-1.183950 01	6.25901D 02	-1.15075D 04
2.0000 02	-7.935700 00	3.01537D 02	-3.82835D 03
2.5000 02	8.576980 00	-6.92810D 02	1.62553D 04
3.0000 02	2.738270 01	-1.72916D 03	3.58060D 04
3.5000 02	3.823580 01	-2.22489D 03	4.33845D 04
4.0000 02	3.583270 01	-1.90337D 03	3.39536D 04
4.5000 02	1.983150 01	-7.78902D 02	8.34309D 03
5.0000 02	-6.817020 00	9.47762D 02	-2.89552D 04
6.0000 02	-7.312350 01	5.02438D 03	-1.13551D 05
7.0000 02	-1.235860 02	7.92256D 03	-1.69858D 05
8.0000 02	-1.243260 02	7.63071D 03	-1.56806D 05
9.0000 02	-5.052950 01	2.69942D 03	-4.51729D 04
1.0000 03	1.146740 02	-7.84219D 03	1.84385D 05

TABLE 9. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.016390-09	1.181780-06	-3.081730-04
2.0000 00	2.580810-09	5.810320-07	-1.322080-04
5.0000 00	1.520830-08	-2.466800-06	6.797300-04
1.0000 01	6.589720-08	-5.544660-06	1.287800-03
2.5000 01	4.467400-07	9.062950-06	-3.872540-03
5.0000 01	2.379050-06	5.578520-05	-1.601930-02
7.5000 01	5.907960-06	5.357710-05	-9.184090-03
1.0000 02	1.267120-05	-1.328580-05	1.825270-02
1.2500 02	2.487460-05	-1.083570-04	5.127080-02
1.5000 02	4.139260-05	-1.825090-04	7.230970-02
2.0000 02	8.779330-05	-1.540820-04	4.380020-02
2.5000 02	1.824230-04	8.236430-05	-5.656140-02
3.0000 02	3.296130-04	3.472930-04	-1.552880-01
3.5000 02	5.041380-04	4.834680-04	-1.946680-01
4.0000 02	7.390990-04	4.273970-04	-1.551250-01
4.5000 02	1.122270-03	1.912630-04	-4.565260-02
5.0000 02	1.719210-03	-1.722290-04	1.104030-01
6.0000 02	3.419610-03	-1.011800-03	4.517540-01
7.0000 02	5.040990-03	-1.585970-03	6.678280-01
8.0000 02	6.197800-03	-1.511470-03	6.109850-01
9.0000 02	8.723350-03	-5.328330-04	1.852050-01
1.0000 03	1.786530-02	1.509140-03	-6.678290-01

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	3.698060-02	-1.873950 00	3.573710 01
2.0000 00	1.484800-02	-7.087500-01	1.328530 01
5.0000 00	-8.256220-02	4.233000 00	-8.069630 01
1.0000 01	-1.432180-01	6.814560 00	-1.263950 02
2.5000 01	5.421040-01	-3.049160 01	5.938750 02
5.0000 01	1.879420 00	-9.286680 01	1.692090 03
7.5000 01	5.152770-01	-2.028680 00	-2.477530 02
1.0000 02	-3.429100 00	2.209350 02	-4.634770 03
1.2500 02	-7.671570 00	4.397710 02	-8.667810 03
1.5000 02	-9.770620 00	5.179620 02	-9.656610 03
2.0000 02	-3.426230 00	5.658600 01	8.611660 02
2.5000 02	1.234580 01	-8.941380 02	2.033640 04
3.0000 02	2.611280 01	-1.635480 03	3.413150 04
3.5000 02	2.965320 01	-1.700630 03	3.298630 04
4.0000 02	2.070690 01	-9.905010 02	1.542110 04
4.5000 02	1.228720 00	3.458100 02	-1.496250 04
5.0000 02	-2.483280 01	2.048190 03	-5.238880 04
6.0000 02	-7.906180 01	5.437320 03	-1.243300 05
7.0000 02	-1.106410 02	7.236270 03	-1.590760 05
8.0000 02	-9.718970 01	6.090770 03	-1.282700 05
9.0000 02	-2.447060 01	1.156000 03	-1.448520 04
1.0000 03	1.159510 02	-8.057000 03	1.921780 05

TABLE 10. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 0 DEGREE C (273.150 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00053580340 00	6.06253D-07
2.0000 00	1.00107145380 00	1.20201D-06
5.0000 00	1.00267749030 00	2.95113D-06
1.0000 01	1.00535118940 00	5.75960D-06
2.5000 01	1.01334994320 00	1.34851D-05
5.0000 01	1.02660898360 00	2.43132D-05
7.5000 01	1.03978145830 00	3.29488D-05
1.0000 02	1.05287115080 00	3.97438D-05
1.2500 02	1.06588138240 00	4.50035D-05
1.5000 02	1.07881508640 00	4.89964D-05
2.0000 02	1.10446306480 00	5.41010D-05
2.5000 02	1.12983288800 00	5.66270D-05
3.0000 02	1.15493914980 00	5.77506D-05
3.5000 02	1.17979411260 00	5.82903D-05
4.0000 02	1.20440832140 00	5.87389D-05
4.5000 02	1.22879103680 00	5.93161D-05
5.0000 02	1.25295054130 00	6.00510D-05
6.0000 02	1.30062941590 00	6.17453D-05
7.0000 02	1.34749859440 00	6.37895D-05
8.0000 02	1.39360511730 00	6.80674D-05
9.0000 02	1.43899123340 00	7.85613D-05
1.0000 03	1.48369543780 00	9.90842D-05

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00059585210 00	9.52896D-07
2.0000 00	1.00119170100 00	1.88531D-06
5.0000 00	1.00297922320 00	4.58970D-06
1.0000 01	1.00595831750 00	8.81829D-06
2.5000 01	1.01489426580 00	1.96599D-05
5.0000 01	1.02977995140 00	3.26718D-05
7.5000 01	1.04465118720 00	4.09358D-05
1.0000 02	1.05950280690 00	4.58950D-05
1.2500 02	1.07433062050 00	4.86589D-05
1.5000 02	1.08913090740 00	5.00546D-05
2.0000 02	1.11863679900 00	5.08998D-05
2.5000 02	1.14800053970 00	5.10702D-05
3.0000 02	1.17720777500 00	5.15540D-05
3.5000 02	1.20624834750 00	5.28997D-05
4.0000 02	1.23511528020 00	5.57350D-05
4.5000 02	1.26380402270 00	6.05946D-05
5.0000 02	1.29231188760 00	6.75289D-05
6.0000 02	1.34878108280 00	8.50508D-05
7.0000 02	1.40452468830 00	1.00962D-04
8.0000 02	1.45955542600 00	1.08964D-04
9.0000 02	1.51389238220 00	1.08728D-04
1.0000 03	1.56755818110 00	1.14023D-04

TABLE 10. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00062310420 00	4.67947D-06
2.0000 00	1.00124642100 00	9.25457D-06
5.0000 00	1.00311763690 00	2.25025D-05
1.0000 01	1.00624048780 00	4.31478D-05
2.5000 01	1.01563908630 00	9.56177D-05
5.0000 01	1.03139639470 00	1.57333D-04
7.5000 01	1.04725760010 00	1.95291D-04
1.0000 02	1.06320938740 00	2.17139D-04
1.2500 02	1.07923940930 00	2.28660D-04
1.5000 02	1.09533624430 00	2.34060D-04
2.0000 02	1.12768902810 00	2.36992D-04
2.5000 02	1.16019317170 00	2.38123D-04
3.0000 02	1.19278600440 00	2.41735D-04
3.5000 02	1.22541528540 00	2.50739D-04
4.0000 02	1.25803779990 00	2.68542D-04
4.5000 02	1.29061805990 00	2.97352D-04
5.0000 02	1.32312713390 00	3.36336D-04
6.0000 02	1.38784271910 00	4.28969D-04
7.0000 02	1.45204832850 00	5.09035D-04
8.0000 02	1.51565987290 00	5.47713D-04
9.0000 02	1.57862902510 00	5.39720D-04
1.0000 03	1.64093176030 00	5.28933D-04

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00061551360 00	1.57860D-06
2.0000 00	1.00123157720 00	3.12161D-06
5.0000 00	1.00308304600 00	7.58509D-06
1.0000 01	1.00617962610 00	1.45244D-05
2.5000 01	1.01554793780 00	3.20449D-05
5.0000 01	1.03140844890 00	5.23332D-05
7.5000 01	1.04755110720 00	6.45019D-05
1.0000 02	1.06394763300 00	7.12839D-05
1.2500 02	1.08057178080 00	7.47167D-05
1.5000 02	1.09739923370 00	7.62481D-05
2.0000 02	1.13157583590 00	7.70723D-05
2.5000 02	1.16631775390 00	7.76372D-05
3.0000 02	1.20149000060 00	7.93344D-05
3.5000 02	1.23697933720 00	8.32651D-05
4.0000 02	1.27269143530 00	9.05096D-05
4.5000 02	1.30854821080 00	1.01394D-04
5.0000 02	1.34448538850 00	1.15131D-04
6.0000 02	1.41640012990 00	1.44938D-04
7.0000 02	1.48812183740 00	1.67824D-04
8.0000 02	1.55944593900 00	1.76908D-04
9.0000 02	1.63024245340 00	1.75254D-04
1.0000 03	1.70043196980 00	1.83679D-04

TABLE 10. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00057164250 00	2.59714D-06
2.0000 00	1.00114434350 00	5.13620D-06
5.0000 00	1.00286876140 00	1.24778D-05
1.0000 01	1.00576362350 00	2.38765D-05
2.5000 01	1.01460033990 00	5.25341D-05
5.0000 01	1.02980910260 00	8.53457D-05
7.5000 01	1.04557336190 00	1.04629D-04
1.0000 02	1.06184299990 00	1.15066D-04
1.2500 02	1.07857076180 00	1.20131D-04
1.5000 02	1.09571228100 00	1.22256D-04
2.0000 02	1.13107352650 00	1.23348D-04
2.5000 02	1.16762884310 00	1.24533D-04
3.0000 02	1.20512381450 00	1.28088D-04
3.5000 02	1.24334415570 00	1.35873D-04
4.0000 02	1.28211150750 00	1.49332D-04
4.5000 02	1.32127885230 00	1.68341D-04
5.0000 02	1.36072595090 00	1.91099D-04
6.0000 02	1.44008721040 00	2.37644D-04
7.0000 02	1.51961858210 00	2.71830D-04
8.0000 02	1.59894865690 00	2.87472D-04
9.0000 02	1.67784231790 00	2.95095D-04
1.0000 03	1.75615421070 00	3.27608D-04

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00047978220 00	2.64045D-06
2.0000 00	1.00096140560 00	5.22360D-06
5.0000 00	1.00241726510 00	1.26930D-05
1.0000 01	1.00487998660 00	2.42830D-05
2.5000 01	1.01253378400 00	5.33363D-05
5.0000 01	1.02613339020 00	8.62927D-05
7.5000 01	1.04071248860 00	1.05303D-04
1.0000 02	1.05618775180 00	1.15307D-04
1.2500 02	1.07247940560 00	1.19962D-04
1.5000 02	1.08951161350 00	1.21799D-04
2.0000 02	1.12551555930 00	1.22742D-04
2.5000 02	1.16367974300 00	1.24350D-04
3.0000 02	1.20355612990 00	1.29129D-04
3.5000 02	1.24476650710 00	1.39057D-04
4.0000 02	1.28699721390 00	1.55060D-04
4.5000 02	1.32999182790 00	1.76133D-04
5.0000 02	1.37354302950 00	1.99880D-04
6.0000 02	1.46168399550 00	2.45159D-04
7.0000 02	1.55045795080 00	2.76168D-04
8.0000 02	1.63926245970 00	2.90237D-04
9.0000 02	1.72772525900 00	2.99476D-04
1.0000 03	1.81562008550 00	3.32247D-04

TABLE 10. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.000D 00	1.00037812330 00	3.21092D-06
2.000D 00	1.00075882630 00	6.35510D-06
5.000D 00	1.00191634350 00	1.54482D-05
1.000D 01	1.00389647570 00	2.95495D-05
2.500D 01	1.01021070890 00	6.47861D-05
5.000D 01	1.02192664150 00	1.04327D-04
7.500D 01	1.03503506270 00	1.26611D-04
1.000D 02	1.04942393980 00	1.37891D-04
1.250D 02	1.06498358650 00	1.42811D-04
1.500D 02	1.08160786430 00	1.44538D-04
2.000D 02	1.11764873750 00	1.45362D-04
2.500D 02	1.15679797020 00	1.47748D-04
3.000D 02	1.19840256320 00	1.54842D-04
3.500D 02	1.24190972850 00	1.69033D-04
4.000D 02	1.28686319380 00	1.90795D-04
4.500D 02	1.33289378740 00	2.18054D-04
5.000D 02	1.37970720520 00	2.47455D-04
6.000D 02	1.47480413610 00	3.00665D-04
7.000D 02	1.57084078820 00	3.35278D-04
8.000D 02	1.66702281710 00	3.51407D-04
9.000D 02	1.76287511820 00	3.65280D-04
1.000D 03	1.85811752040 00	4.07851D-04

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.000D 00	1.00023832600 00	3.55968D-06
2.000D 00	1.00047982140 00	7.02269D-06
5.000D 00	1.00122331600 00	1.68776D-05
1.000D 01	1.00252576890 00	3.16379D-05
2.500D 01	1.00690594930 00	6.52079D-05
5.000D 01	1.01576202500 00	9.51509D-05
7.500D 01	1.02650666300 00	1.06184D-04
1.000D 02	1.03904975580 00	1.08795D-04
1.250D 02	1.05327889260 00	1.08830D-04
1.500D 02	1.06906622080 00	1.09161D-04
2.000D 02	1.10476634650 00	1.15850D-04
2.500D 02	1.14505238090 00	1.33180D-04
3.000D 02	1.18890995470 00	1.56820D-04
3.500D 02	1.23547459650 00	1.79468D-04
4.000D 02	1.28404663720 00	1.96807D-04
4.500D 02	1.33407774560 00	2.08267D-04
5.000D 02	1.38514640500 00	2.15518D-04
6.000D 02	1.48919232990 00	2.25805D-04
7.000D 02	1.59444986190 00	2.36685D-04
8.000D 02	1.69993169060 00	2.49466D-04
9.000D 02	1.80507692090 00	2.81050D-04
1.000D 03	1.90956938330 00	3.73226D-04

TABLE 10. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00004472200 00	3.83115D-06
2.0000 00	1.00009342550 00	7.56435D-06
5.0000 00	1.00026348500 00	1.81982D-05
1.0000 01	1.00062709090 00	3.41367D-05
2.5000 01	1.00232466890 00	7.03662D-05
5.0000 01	1.00719727190 00	1.02447D-04
7.5000 01	1.01462213080 00	1.13970D-04
1.0000 02	1.02454094740 00	1.16519D-04
1.2500 02	1.03684037570 00	1.16583D-04
1.5000 02	1.05136388240 00	1.17388D-04
2.0000 02	1.08632402890 00	1.26809D-04
2.5000 02	1.12781505810 00	1.47647D-04
3.0000 02	1.17429484390 00	1.72888D-04
3.5000 02	1.22445462730 00	1.95006D-04
4.0000 02	1.27726104030 00	2.11174D-04
4.5000 02	1.33193116910 00	2.22314D-04
5.0000 02	1.38788486980 00	2.30716D-04
6.0000 02	1.50205615650 00	2.45752D-04
7.0000 02	1.61757058040 00	2.59421D-04
8.0000 02	1.73324914450 00	2.72594D-04
9.0000 02	1.84845873410 00	3.06246D-04
1.0000 03	1.96286181900 00	4.00878D-04

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	9.99819898290-01	3.69342D-06
2.0000 00	9.99644577430-01	7.29608D-06
5.0000 00	9.99147455170-01	1.75504D-05
1.0000 01	9.98415953770-01	3.28718D-05
2.5000 01	9.96965057660-01	6.72696D-05
5.0000 01	9.97108267270-01	9.63928D-05
7.5000 01	1.00054256420 00	1.05488D-04
1.0000 02	1.00727708460 00	1.06501D-04
1.2500 02	1.01721950240 00	1.05930D-04
1.5000 02	1.03019048740 00	1.06892D-04
2.0000 02	1.06420463390 00	1.18578D-04
2.5000 02	1.10704284320 00	1.41639D-04
3.0000 02	1.15644892420 00	1.66087D-04
3.5000 02	1.21053395180 00	1.84893D-04
4.0000 02	1.26785597830 00	1.97281D-04
4.5000 02	1.32736672380 00	2.05721D-04
5.0000 02	1.38832166260 00	2.12954D-04
6.0000 02	1.51262299760 00	2.28381D-04
7.0000 02	1.63816613300 00	2.43546D-04
8.0000 02	1.76365464050 00	2.61984D-04
9.0000 02	1.88843532720 00	3.07648D-04
1.0000 03	2.01218347630 00	4.12745D-04

TABLE 10. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 0 DEGREE C (273.150 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	9.99556830710-01	3.38868D-06
2.0000 00	9.99118805920-01	6.70105D-06
5.0000 00	9.97835935650-01	1.61382D-05
1.0000 01	9.95803831960-01	3.02419D-05
2.5000 01	9.90539671230-01	6.18018D-05
5.0000 01	9.84759295610-01	8.79756D-05
7.5000 01	9.83037309640-01	9.54614D-05
1.0000 02	9.85589269800-01	9.57324D-05
1.2500 02	9.92440491480-01	9.50543D-05
1.5000 02	1.00343161970 00	9.64706D-05
2.0000 02	1.03650276000 00	1.09901D-04
2.5000 02	1.08148633730 00	1.32583D-04
3.0000 02	1.13496925480 00	1.53645D-04
3.5000 02	1.19419033130 00	1.68628D-04
4.0000 02	1.25716144170 00	1.78908D-04
4.5000 02	1.32252499750 00	1.87336D-04
5.0000 02	1.38937193160 00	1.95748D-04
6.0000 02	1.52528768940 00	2.13075D-04
7.0000 02	1.66206774260 00	2.28643D-04
8.0000 02	1.79840557900 00	2.49025D-04
9.0000 02	1.93369464280 00	2.95734D-04
1.0000 03	2.06766297720 00	3.90623D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. HE-25-4		
0	1.0383732D 03	1.0383619D 03	1.12887D-02	1.08716D-05
1	5.9230656D 02	5.9231096D 02	-4.40542D-03	-7.43773D-06
2	3.5536977D 02	3.5536226D 02	7.51879D-03	2.11576D-05
3	2.1996532D 02	2.1996143D 02	3.89473D-03	1.77061D-05
4	1.3883107D 02	1.3883136D 02	-2.89514D-04	-2.08537D-06
5	8.8712063D 01	8.8712221D 01	-1.57443D-04	-1.77476D-06
6	5.7134712D 01	5.7134921D 01	-2.08959D-04	-3.65731D-06
7	3.6984754D 01	3.6984803D 01	-4.89609D-05	-1.32381D-06
8	2.4021597D 01	2.4019886D 01	1.71126D-03	7.12384D-05
9	1.5633608D 01	1.5633076D 01	5.31758D-04	3.40138D-05
10	1.0188655D 01	1.0188739D 01	-8.37361D-05	-8.21856D-06
11	6.6461837D 00	6.6464389D 00	-2.55199D-04	-3.83978D-05
12	4.3383496D 00	4.3382414D 00	1.08110D-04	2.49195D-05
13	2.8327376D 00	2.8327325D 00	5.09648D-06	1.79914D-06
14	1.8500896D 00	1.8501484D 00	-5.88070D-05	-3.17860D-05
		RUN NO. HE-25-5		
0	8.9419958D 02	8.9419922D 02	3.59163D-04	4.01659D-07
1	5.1792668D 02	5.1792630D 02	3.77818D-04	7.29482D-07
2	3.1368122D 02	3.1367787D 02	3.34497D-03	1.06636D-05
3	1.9530005D 02	1.9530150D 02	-1.44302D-03	-7.38872D-06
4	1.2372094D 02	1.2372312D 02	-2.17666D-03	-1.75933D-05
5	7.9243825D 01	7.9244457D 01	-6.31585D-04	-7.97015D-06
6	5.1114044D 01	5.1114466D 01	-4.21642D-04	-8.24905D-06
7	3.3120242D 01	3.3119968D 01	2.74120D-04	8.27650D-06
8	2.1524196D 01	2.1523498D 01	6.98852D-04	3.24682D-05
9	1.4014090D 01	1.4014105D 01	-1.57069D-05	-1.12079D-06
10	9.1356439D 00	9.1360399D 00	-3.96012D-04	-4.33480D-05
11	5.9606841D 00	5.9607738D 00	-8.97344D-05	-1.50544D-05
12	3.8913019D 00	3.8911410D 00	1.60826D-04	4.13297D-05
13	2.5409142D 00	2.5409799D 00	-6.57052D-05	-2.58589D-05
14	1.6597018D 00	1.6596763D 00	2.55054D-05	1.53674D-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. HE-25-6		
0	7.6383895D 02	7.6385523D 02	-1.6281 1D-02	-2.13148D-05
1	4.4895101D 02	4.4895054D 02	4.7157 3D-04	1.05039D-06
2	2.7437328D 02	2.7437172D 02	1.5633 7D-03	5.69797D-06
3	1.7179226D 02	1.7179489D 02	-2.6301 6D-03	-1.53101D-05
4	1.0921946D 02	1.0922035D 02	-8.9240 9D-04	-8.17079D-06
5	7.0114347D 01	7.0114922D 01	-5.7441 2D-04	-8.19250D-06
6	4.5291094D 01	4.5292035D 01	-9.4182 9D-04	-2.07950D-05
7	2.9374760D 01	2.9375123D 01	-3.6280 2D-04	-1.23508D-05
8	1.9101226D 01	1.9101609D 01	-3.8303 1D-04	-2.00527D-05
9	1.2442828D 01	1.2442178D 01	6.4986 6D-04	5.22282D-05
10	8.1134283D 00	8.1133902D 00	3.8138 5D-05	4.70066D-06
11	5.2943415D 00	5.2944511D 00	-1.0967 9D-04	-2.07162D-05
12	3.4565387D 00	3.4565554D 00	-1.6768 8D-05	-4.85132D-06
13	2.2572325D 00	2.2573520D 00	-1.1950 3D-04	-5.29423D-05
14	1.4745736D 00	1.4744906D 00	8.2946 0D-05	5.62509D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.20477D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.53035925D 00	S2N	3.22679D-11	SN	5.68048D-06
B	1.1843308 4D 01	S2B	2.0830 7D-04	SB	1.44328D-02
C	1.0581536 1D 02	S2C	1.6251 2D 00	SC	1.27480D 00
D	8.2524739 0D 02	S2D	1.1025 9D 03	SD	3.3205 3D 01
P1	1.0383618 9D 03	S2P1	5.3718 3D-03	SP1	7.3292 8D-02
P2	8.9419922 0D 02	S2P2	1.5962 6D-03	SP2	3.9953 2D-02
P3	7.6385523 2D 02	S2P3	8.3963 0D-04	SP3	2.8976 4D-02

COVARIANCES

S2BC	-1.722120-02	S2BD	4.14513D-01
S2BP1	3.23418D-04	S2BP2	-3.56262D-05
S2BP3	-1.70763D-04	S2BN	-7.05088D-08
S2CD	-4.15343D 01	S2CP1	-4.19713D-02
S2CP2	3.73272D-04	S2CP3	1.78728D-02
S2CN	5.02999D-06	S2DP1	1.41735D 00
S2DP2	1.59539D-01	S2DP3	-3.96624D-01
S2DN	-1.16048D-04	S2P1P2	2.40116D-03
S2P1P3	8.17849D-04	S2P1N	-7.77612D-08
S2P2P3	8.73566D-04	S2P2N	1.27730D-08
S2P3N	4.53842D-08		

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.(	REL. ERROR IN P
		RUN NO. 90HE-10N2-25-1		
0	1.04089120 03	1.04091110 03	-1.995210-02	-1.916830-05
1	5.79155920 02	5.79240740 02	-8.481870-02	-1.464520-04
2	3.43286760 02	3.43296840 02	-1.007660-02	-2.935320-05
3	2.11227970 02	2.11231820 02	-3.847200-03	-1.821350-05
4	1.32941350 02	1.32946160 02	-4.808590-03	-3.617080-05
5	8.48465100 01	8.48504640 01	-3.953990-03	-4.660170-05
6	5.46285160 01	5.46313890 01	-2.873830-03	-5.260680-05
7	3.53698530 01	3.53717780 01	-1.924980-03	-5.442440-05
8	2.29834880 01	2.29843100 01	-8.211140-04	-3.572620-05
9	1.49692660 01	1.49697620 01	-4.969180-04	-3.319590-05
10	9.76443080 00	9.76457680 00	-1.460540-04	-1.495780-05
11	6.37577390 00	6.37556060 00	2.132630-04	3.344900-05
12	4.16561480 00	4.16544500 00	1.697960-04	4.076140-05
13	2.72259800 00	2.72261320 00	-1.517740-05	-5.574620-06
14	1.78012710 00	1.78003720 00	8.992950-05	5.051860-05
		RUN NO. 90HE-10N2-25-2		
0	9.01600160 02	9.01502640 02	9.751960-02	1.081630-04
1	5.10653760 02	5.10617570 02	3.619850-02	7.088650-05
2	3.05866560 02	3.05824520 02	4.204640-02	1.374670-04
3	1.89388890 02	1.89364420 02	2.447560-02	1.292350-04
4	1.19656740 02	1.19643920 02	1.281380-02	1.070880-04
5	7.65506730 01	7.65449020 01	5.770720-03	7.538430-05
6	4.93636710 01	4.93592670 01	4.404790-03	8.923140-05
7	3.19916340 01	3.19896370 01	1.996790-03	6.241610-05
8	2.08010540 01	2.07997880 01	1.266330-03	6.087800-05
9	1.35530210 01	1.35525410 01	4.798660-04	3.540660-05
10	8.84287400 00	8.84250410 00	3.699310-04	4.183380-05
11	5.77473800 00	5.77451940 00	2.185190-04	3.784060-05
12	3.77304310 00	3.77318610 00	-1.429850-04	-3.789640-05
13	2.46647580 00	2.46640840 00	6.735240-05	2.730720-05
14	1.61231200 00	1.61260940 00	-2.973580-04	-1.844300-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 90HE-10N2-25-3		
0	7.6264760D 02	7.6269144D 02	-4.3848 5D-02	-5.7495 1D-05
1	4.4014651D 02	4.4016086D 02	-1.4348 9D-02	-3.2600 3D-05
2	2.6656882D 02	2.6657493D 02	-6.1099 1D-03	-2.2920 6D-05
3	1.6616144D 02	1.6617125D 02	-9.8082 1D-03	-5.9028 2D-05
4	1.0541761D 02	1.0542422D 02	-6.6150 1D-03	-6.2750 6D-05
5	6.7618439D 01	6.7622452D 01	-4.0135 0D-03	-5.9355 1D-05
6	4.3674751D 01	4.3677647D 01	-2.8960 3D-03	-6.6309 0D-05
7	2.8335260D 01	2.8337386D 01	-2.1261 5D-03	-7.5035 4D-05
8	1.8436430D 01	1.8437700D 01	-1.2691 3D-03	-6.8838 1D-05
9	1.2018179D 01	1.2018813D 01	-6.3350 6D-04	-5.2712 3D-05
10	7.8446353D 00	7.8440752D 00	5.6006 4D-04	7.1394 6D-05
11	5.1234370D 00	5.1234705D 00	-3.3512 3D-05	-6.5409 8D-06
12	3.3482311D 00	3.3481899D 00	4.1211 0D-05	1.2308 3D-05
13	2.1887505D 00	2.1887784D 00	-2.7837 6D-05	-1.2718 5D-05
14	1.4312872D 00	1.4311620D 00	1.2520 4D-04	8.7476 2D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 6.10858D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528737620 00	S2N	1.64557D-10	SN	1.28280D-05
B	1.343766680 01	S2B	1.19742D-03	SB	3.46038D-02
C	1.644555010 02	S2C	1.03857D 01	SC	3.22268D 00
D	2.019014670 03	S2D	8.02561D 03	SD	8.95858D 01
P1	1.040911110 03	S2P1	2.62379D-02	SP1	1.61981D-01
P2	9.015026380 02	S2P2	8.56945D-03	SP2	9.25713D-02
P3	7.626914450 02	S2P3	4.19559D-03	SP3	6.47734D-02

COVARIANCES

S2BC	-1.04219D-01	S2BD	2.68571D 00
S2BP1	1.71347D-03	S2BP2	-6.38407D-05
S2BP3	-8.67558D-04	S2BN	-3.82739D-07
S2CD	-2.83487D 02	S2CP1	-2.34651D-01
S2CP2	-1.41335D-02	S2CP3	9.40321D-02
S2CN	2.86998D-05	S2DP1	8.44370D 00
S2DP2	1.47763D 00	S2DP3	-2.14823D 00
S2DN	-7.13295D-04	S2P1P2	1.26825D-02
S2P1P3	4.47922D-03	S2P1N	-3.90466D-07
S2P2P3	4.46315D-03	S2P2N	3.49953D-08
S2P3N	2.20310D-07		

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM -- CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 80HE-20N2-25-1		
0	1.0382909D 03	1.0382176D 03	7.3371 1D-02	7.06653D-05
1	5.6351222D 02	5.6367646D 02	-1.6423 2D-01	-2.91444D-04
2	3.0358875D 02	3.0391176D 02	-3.3008 7D-02	-9.991 77D-05
3	2.0227924D 02	2.0229200D 02	-1.2763 1D-02	-6.30965D-05
4	1.2702323D 02	1.2703185D 02	-8.6217 1D-03	-6.78751D-05
5	8.0984410D 01	8.0987906D 01	-3.4961 3D-03	-4.31704D-05
6	5.2115676D 01	5.2116571D 01	-8.9505 6D-04	-1.71744D-05
7	3.3734353D 01	3.3734702D 01	-3.4945 1D-04	-1.03589D-05
8	2.1917871D 01	2.1918003D 01	-1.3195 1D-04	-6.02023D-06
9	1.4274494D 01	1.4274781D 01	-2.8725 5D-04	-2.01237D-05
10	9.3114600D 00	9.3113771D 00	8.2948 5D-05	8.90822D-06
11	6.0798213D 00	6.0799152D 00	-9.3908 7D-05	-1.54460D-05
12	3.9731934D 00	3.9725296D 00	6.6387 3D-04	1.67088D-04
13	2.5967323D 00	2.5967092D 00	2.3166 0D-05	8.92120D-06
14	1.6977888D 00	1.6978577D 00	-6.8889 7D-05	-4.05761D-05
		RUN NO. 80HE-20N2-25-3		
0	9.2180231D 02	9.2189884D 02	-9.6529 2D-02	-1.04718D-04
1	5.0914567D 02	5.0923690D 02	-9.1229 7D-02	-1.79182D-04
2	3.0143274D 02	3.0143753D 02	-4.7928 8D-03	-1.59003D-05
3	1.8561096D 02	1.8560975D 02	1.2082 2D-03	6.50945D-06
4	1.1694778D 02	1.1694616D 02	1.6143 1D-03	1.38037D-05
5	7.4712781D 01	7.4710023D 01	2.7588 7D-03	3.69264D-05
6	4.8144662D 01	4.8137950D 01	6.7122 1D-03	1.39417D-04
7	3.1187110D 01	3.1184572D 01	2.5379 8D-03	8.13792D-05
8	2.0272484D 01	2.0271655D 01	8.2969 6D-04	4.09272D-05
9	1.3207435D 01	1.3206972D 01	4.6306 4D-04	3.50608D-05
10	8.6165371D 00	8.6167238D 00	-1.8670 6D-04	-2.16684D-05
11	5.6267743D 00	5.6271340D 00	-3.5968 1D-04	-6.39232D-05
12	3.6766091D 00	3.6770281D 00	-4.1902 4D-04	-1.13970D-04
13	2.4045729D 00	2.4036946D 00	8.7834 0D-04	3.65279D-04
14	1.5713428D 00	1.5717170D 00	-3.7424 0D-04	-2.38165D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 80HE-20N2-25-4		
0	6.96928310 02	6.96748640 02	1.79676D-01	2.57811D-04
1	3.99137700 02	3.99042650 02	9.50546D-02	2.38150D-04
2	2.41178970 02	2.41119350 02	5.96223D-02	2.47212D-04
3	1.50280430 02	1.50246470 02	3.39596D-02	2.25975D-04
4	9.53061900 01	9.53405060 01	-3.43164D-02	-3.60065D-04
5	6.11798970 01	6.11743870 01	5.50928D-03	9.00505D-05
6	3.95220490 01	3.95249740 01	-2.92545D-03	-7.40206D-05
7	2.56475620 01	2.56498150 01	-2.25270D-03	-8.78329D-05
8	1.66913050 01	1.66925550 01	-1.24935D-03	-7.48505D-05
9	1.08817700 01	1.08831190 01	-1.34907D-03	-1.23975D-04
10	7.10440950 00	7.10391760 00	4.91926D-04	6.92423D-05
11	4.64073520 00	4.64062940 00	1.05728D-04	2.27825D-05
12	3.03291210 00	3.03301050 00	-9.84483D-05	-3.24600D-05
13	1.98290640 00	1.98295690 00	-5.04558D-05	-2.54454D-05
14	1.29678080 00	1.29671820 00	6.25916D-05	4.82669D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 2.28400D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528593730 00	S2N	5.93698D-10	SN	2.43659D-05
B	1.446230850 01	S2B	4.82540D-03	SB	6.94651D-02
C	2.225447030 02	S2C	4.60717D 01	SC	6.78761D 00
D	4.228405290 03	S2D	3.99354D 04	SD	1.99838D 02
P1	1.038217550 03	S2P1	9.34883D-02	SP1	3.05759D-01
P2	9.218988430 02	S2P2	3.86944D-02	SP2	1.96709D-01
P3	6.967486370 02	S2P3	1.28338D-02	SP3	1.13286D-01

COVARIANCES

S2BC	-4.39955D-01	S2BD	1.20312D 01
S2BP1	6.03610D-03	S2BP2	6.11235D-04
S2BP3	-3.60185D-03	S2BN	-1.45810D-06
S2CD	-1.33200D 03	S2CP1	-8.86769D-01
S2CP2	-1.77733D-01	S2CP3	4.30984D-01
S2CN	1.14254D-04	S2DP1	3.44235D 01
S2DP2	1.06592D 01	S2DP3	-1.12977D 01
S2DN	-3.03184D-03	S2P1P2	5.36801D-02
S2P1P3	1.00650D-02	S2P1N	-1.28507D-06
S2P2P3	1.25527D-02	S2P2N	-5.97382D-08
S2P3N	8.49309D-07		

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 70HE-30N2-25-1		
0	1.0302902D 03	1.0302864D 03	3.826120-03	3.713630-06
1	5.4706842D 02	5.4706054D 02	7.881800-03	1.440730-05
2	3.1806808D 02	3.1805505D 02	1.303470-02	4.098080-05
3	1.9420622D 02	1.9419582D 02	1.039780-02	5.353980-05
4	1.2186807D 02	1.2185633D 02	1.173680-02	9.630740-05
5	7.7693903D 01	7.7687383D 01	6.519640-03	8.391440-05
6	5.0003555D 01	5.0002901D 01	6.538120-04	1.307530-05
7	3.2373483D 01	3.2373833D 01	-3.493540-04	-1.079140-05
8	2.1036953D 01	2.1037680D 01	-7.264000-04	-3.452970-05
9	1.3702408D 01	1.3703239D 01	-8.311240-04	-6.065540-05
10	8.9404592D 00	8.9393300D 00	1.129180-03	1.263000-04
11	5.8377008D 00	5.8372855D 00	4.152600-04	7.113420-05
12	3.8142043D 00	3.8141014D 00	1.029110-04	2.698090-05
13	2.4931075D 00	2.4931746D 00	-6.710730-05	-2.691710-05
14	1.6299887D 00	1.6301591D 00	-1.703270-04	-1.044960-04
		RUN NO. 70HE-30N2-25-2		
0	9.1751901D 02	9.1751687D 02	2.140590-03	2.333020-06
1	4.9678777D 02	4.9678624D 02	1.536100-03	3.092070-06
2	2.9187457D 02	2.9186795D 02	6.617100-03	2.267110-05
3	1.7923982D 02	1.7923632D 02	3.496210-03	1.950580-05
4	1.1284780D 02	1.1284098D 02	6.824710-03	6.047710-05
5	7.2085614D 01	7.2080902D 01	4.711430-03	6.535880-05
6	4.6451320D 01	4.6449945D 01	1.374960-03	2.960010-05
7	3.0095524D 01	3.0096017D 01	-4.923650-04	-1.636010-05
8	1.9566019D 01	1.9566750D 01	-7.311850-04	-3.737010-05
9	1.2748407D 01	1.2748997D 01	-5.907860-04	-4.634200-05
10	8.3197105D 00	8.3184590D 00	1.251520-03	1.504280-04
11	5.4329846D 00	5.4325535D 00	4.311480-04	7.935750-05
12	3.5498950D 00	3.5499413D 00	-4.629970-05	-1.304260-05
13	2.3203934D 00	2.3206252D 00	-2.318540-04	-9.992020-05
14	1.5173566D 00	1.5173911D 00	-3.448750-05	-2.272870-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 70HE-30N2-25-3		
0	8.34186710 02	8.34211480 02	-2.47727D-02	-2.96968D-05
1	4.58514020 02	4.58532070 02	-1.80534D-02	-3.93738D-05
2	2.71561340 02	2.71580770 02	-1.94298D-02	-7.15486D-05
3	1.67517340 02	1.67525870 02	-8.53222D-03	-5.09333D-05
4	1.05737600 02	1.05740720 02	-3.11912D-03	-2.94987D-05
5	6.76481400 01	6.76494170 01	-1.27685D-03	-1.88749D-05
6	4.36388820 01	4.36354290 01	3.45323D-03	7.91320D-05
7	2.82895600 01	2.82891520 01	4.08095D-04	1.44256D-05
8	1.83983740 01	1.83989380 01	-5.64640D-04	-3.06897D-05
9	1.19900980 01	1.19909810 01	-8.83213D-04	-7.36619D-05
10	7.82450570 00	7.82508630 00	-5.80574D-04	-7.41995D-05
11	5.11044710 00	5.11086110 00	-4.14072D-04	-8.10247D-05
12	3.33982270 00	3.33994830 00	-1.25581D-04	-3.76012D-05
13	2.18346650 00	2.18344450 00	2.20348D-05	1.00917D-05
14	1.42793760 00	1.42773240 00	2.05237D-04	1.43730D-04
		RUN NO. 70HE-30N2-25-4		
0	7.15644450 02	7.15691120 02	-4.66656D-02	-6.52077D-05
1	4.02249810 02	4.02285930 02	-3.61163D-02	-8.97857D-05
2	2.41135950 02	2.41157190 02	-2.12412D-02	-8.80879D-05
3	1.49751570 02	1.49762170 02	-1.06077D-02	-7.08354D-05
4	9.48949350 01	9.48979120 01	-2.97719D-03	-3.13735D-05
5	6.08515580 01	6.08549390 01	-3.38119D-03	-5.55645D-05
6	3.93075810 01	3.93095540 01	-1.97262D-03	-5.01842D-05
7	2.55059600 01	2.55077810 01	-1.82079D-03	-7.13868D-05
8	1.65980480 01	1.65995470 01	-1.49841D-03	-9.02762D-05
9	1.08208020 01	1.08222920 01	-1.49026D-03	-1.37722D-04
10	7.06502620 00	7.06411440 00	9.11816D-04	1.29061D-04
11	4.61505040 00	4.61455910 00	4.91230D-04	1.06441D-04
12	3.01621920 00	3.01592010 00	2.99041D-04	9.91445D-05
13	1.97171910 00	1.97174570 00	-2.66429D-05	-1.35125D-05
14	1.28933830 00	1.28936020 00	-2.18802D-05	-1.69701D-05

TABLE II. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 70HE-30N2-25-S		
0	6.21118610 02	6.21019510 02	9.909680-02	1.595460-04
1	3.55661630 02	3.55652090 02	9.535510-03	2.681060-05
2	2.15379160 02	2.15371390 02	7.773880-03	3.609390-05
3	1.33156310 02	1.34513300 02	-1.356990 00	-1.019100-02
4	8.55236620 01	8.55202630 01	3.399040-03	3.974390-05
5	5.49536770 01	5.49521310 01	1.546700-03	2.814540-05
6	3.55416150 01	3.55410050 01	6.105380-04	1.717810-05
7	2.30799380 01	2.30805680 01	-6.304620-04	-2.731650-05
8	1.50265760 01	1.50275580 01	-9.818460-04	-6.534070-05
9	9.79959110 00	9.80058310 00	-9.919430-04	-1.012230-04
10	6.39963270 00	6.39854620 00	1.086530-03	1.697800-04
11	4.18043780 00	4.18035190 00	8.587340-05	2.054170-05
12	2.73234750 00	2.73237870 00	-3.119830-05	-1.141810-05
13	1.78636600 00	1.78647540 00	-1.093630-04	-6.122070-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.260640-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528630840 00	S2N	1.921300-10	SN	1.386110-05
B	1.440000600 01	S2B	3.205400-03	SB	5.661620-02
C	3.254103170 02	S2C	1.067140 02	SC	1.033030 01
D	3.996422360 03	S2D	5.455980 05	SD	7.386460 02
E	7.040984170 04	S2E	2.682150 08	SE	1.637730 04
P1	1.030286390 03	S2P1	3.311900-02	SP1	1.819860-01
P2	9.175168660 02	S2P2	1.028840-02	SP2	1.014320-01
P3	8.342114780 02	S2P3	6.630560-03	SP3	8.142830-02
P4	7.156911150 02	S2P4	4.800080-03	SP4	6.928260-02
P5	6.210195150 02	S2P5	3.135210-03	SP5	5.599290-02

COVARIANCES

S2BC	-5.526340-01	S2BD	3.651000 01
S2BE	-7.462750 02	S2BP1	-2.507670-03
S2BP2	4.268960-04	S2BP3	1.342260-03
S2BP4	1.348170-03	S2BP5	8.665570-04
S2BN	-6.975200 07	S2CD	-7.480580 03
S2CE	1.592950 05	S2CP1	6.490310-01
S2CP2	-7.479090-02	S2CP3	-3.163790-01
S2CP4	-3.488750-01	S2CP5	-2.350170-01
S2CN	1.066450-04	S2DE	-1.196190 07

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

COVARIANCES

S2DP1	-5.81704D 01	S2DP2	2.99945D 00
S2DP3	2.46151D 01	S2DP4	2.98466D 01
S2DP5	2.15846D 01	S2DN	-6.74061D-03
S2EP1	1.54567D 03	S2EP2	3.52864D 01
S2EP3	-5.23641D 02	S2EP4	-7.07013D 02
S2EP5	-5.39643D 02	S2EN	1.33433D-01
S2P1P2	1.43521D-02	S2P1P3	5.96398D-03
S2P1P4	-4.91605D-04	S2P1P5	-2.18961D-03
S2P1N	3.93429D-07	S2P2P3	6.44415D-03
S2P2P4	3.25623D-03	S2P2P5	1.53072D-03
S2P2N	-7.93229D-08	S2P3P4	4.43926D-03
S2P3P5	2.92045D-03	S2P3N	-2.18835D-07
S2P4P5	3.34311D-03	S2P4N	-2.04067D-07
S2P5N	-1.38276D-07		

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 60HE-40N2-25-1		
0	1.0550823D 03	1.0551239D 03	-4.16248D-02	-3.94517D-05
1	5.4382913D 02	5.4394882D 02	-1.19690D-01	-2.20087D-04
2	3.1275914D 02	3.1278822D 02	-2.90710D-02	-9.29503D-05
3	1.9029978D 02	1.9032136D 02	-2.15786D-02	-1.13393D-04
4	1.1932730D 02	1.1933969D 02	-1.23913D-02	-1.03843D-04
5	7.6088660D 01	7.6095419D 01	-6.75862D-03	-8.88256D-05
6	4.8992239D 01	4.8996221D 01	-3.98218D-03	-8.12819D-05
7	3.1730293D 01	3.1733053D 01	-2.75967D-03	-8.69727D-05
8	2.0624714D 01	2.0626817D 01	-2.10270D-03	-1.01950D-04
9	1.3436122D 01	1.3438181D 01	-2.05831D-03	-1.53192D-04
10	8.7691122D 00	8.7675450D 00	1.56721D-03	1.78720D-04
11	5.7262204D 00	5.7255861D 00	6.34364D-04	1.10782D-04
12	3.7413198D 00	3.7413070D 00	1.27984D-05	3.42083D-06
13	2.4458144D 00	2.4456622D 00	1.52176D-04	6.22188D-05
14	1.5991436D 00	1.5991163D 00	2.73146D-05	1.70808D-05
		RUN NO. 60HE-40N2-25-2		
0	9.4783653D 02	9.4779750D 02	3.90255D-02	4.11732D-05
1	4.9889563D 02	4.9890575D 02	-1.01193D-02	-2.02834D-05
2	2.9001516D 02	2.8999718D 02	1.79870D-02	6.20210D-05
3	1.7745852D 02	1.7745314D 02	5.37956D-03	3.03144D-05
4	1.1161720D 02	1.1161532D 02	1.87995D-03	1.68429D-05
5	7.1298242D 01	7.1296203D 01	2.03817D-03	2.85866D-05
6	4.5960618D 01	4.5954468D 01	6.15009D-03	1.33812D-04
7	2.9785062D 01	2.9782205D 01	2.85793D-03	9.59518D-05
8	1.9367482D 01	1.9366542D 01	9.40105D-04	4.85404D-05
9	1.2620347D 01	1.2620345D 01	1.61679D-06	1.28110D-07
10	8.2347857D 00	8.2353078D 00	-5.22175D-04	-6.34109D-05
11	5.3783501D 00	5.3785801D 00	-2.29967D-04	-4.27578D-05
12	3.5145040D 00	3.5148012D 00	-2.97270D-04	-8.45837D-05
13	2.2976128D 00	2.2976995D 00	-8.66333D-05	-3.77058D-05
14	1.5024908D 00	1.5024132D 00	7.75929D-05	5.16429D-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 60HE-40N2-25-3		
0	8.47386020 02	8.4740513D 02	-1.91107D-02	-2.25525D-05
1	4.5529001D 02	4.5529474D 02	-4.73285D-03	-1.03952D-05
2	2.6746456D 02	2.6746133D 02	3.23029D-03	1.20774D-05
3	1.6457883D 02	1.6457763D 02	1.20582D-03	7.32670D-06
4	1.0383525D 02	1.0383534D 02	-9.44234D-05	-9.09357D-07
5	6.6444730D 01	6.6444163D 01	5.67288D-04	8.53774D-06
6	4.2873156D 01	4.2872393D 01	7.63425D-04	1.78066D-05
7	2.7802981D 01	2.7802834D 01	1.46948D-04	5.28534D-06
8	1.8086286D 01	1.8086775D 01	-4.88988D-04	-2.70364D-05
9	1.1791605D 01	1.1789427D 01	2.17868D-03	1.84766D-04
10	7.6954171D 00	7.6943755D 00	1.04155D-03	1.35346D-04
11	5.0263983D 00	5.0258293D 00	5.68932D-04	1.13189D-04
12	3.2845332D 00	3.2845136D 00	1.95369D-05	5.94816D-06
13	2.1470235D 00	2.1472527D 00	-2.29207D-04	-1.06756D-04
14	1.4039244D 00	1.4040810D 00	-1.56551D-04	-1.11510D-04
		RUN NO. 60HE-40N2-25-4		
0	7.3501566D 02	7.3494579D 02	6.98682D-02	9.50567D-05
1	4.0456078D 02	4.0451763D 02	4.31448D-02	1.06646D-04
2	2.4062889D 02	2.4060971D 02	1.91852D-02	7.97295D-05
3	1.4904329D 02	1.4903694D 02	6.34849D-03	4.25949D-05
4	9.4381330D 01	9.4376761D 01	4.56862D-03	4.84060D-05
5	6.0524944D 01	6.0520676D 01	4.26770D-03	7.05115D-05
6	3.9102666D 01	3.9100455D 01	2.21096D-03	5.65423D-05
7	2.5377857D 01	2.5376797D 01	1.06086D-03	4.18025D-05
8	1.6516525D 01	1.6516759D 01	-2.34140D-04	-1.41761D-05
9	1.0769121D 01	1.0769459D 01	-3.37774D-04	-3.13651D-05
10	7.0293609D 00	7.0301228D 00	-7.61910D-04	-1.08390D-04
11	4.5918219D 00	4.5925551D 00	-7.33198D-04	-1.59675D-04
12	3.0015963D 00	3.0016135D 00	-1.72039D-05	-5.73158D-06
13	1.9622146D 00	1.9624156D 00	-2.00982D-04	-1.02426D-04
14	1.2834801D 00	1.2832631D 00	2.17019D-04	1.69086D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 60HE-40N2-25-5		
0	6.3568293D 02	6.3564987D 02	3.3054OD-02	5.19977D-05
1	3.5778209D 02	3.5776757D 02	1.4520 3D-02	4.05843D-05
2	2.1528124D 02	2.1527548D 02	5.76016D-03	2.67564D-05
3	1.3416608D 02	1.3417320D 02	-7.12215D-03	-5.30846D-05
4	8.5260450D 01	8.5260586D 01	-1.35885D-04	-1.59376D-06
5	5.4784522D 01	5.4786286D 01	-1.76372D-03	-3.21937D-05
6	3.5437505D 01	3.5439295D 01	-1.78973D-03	-5.05038D-05
7	2.3016754D 01	2.3018218D 01	-1.46319D-03	-6.35708D-05
8	1.4987169D 01	1.4988867D 01	-1.69822D-03	-1.13311D-04
9	9.7771666D 00	9.7762275D 00	9.39110D-04	9.60513D-05
10	6.3834801D 00	6.3830200D 00	4.60150D-04	7.20845D-05
11	4.1702681D 00	4.1703570D 00	-8.88521D-05	-2.13061D-05
12	2.7258560D 00	2.7258987D 00	-4.27134D-05	-1.56697D-05
13	1.7822916D 00	1.7822533D 00	3.83056D-05	2.14924D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.68219D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52865224D 00	S2N	2.54530D-10	SN	1.59540D-05
B	1.38364855D 01	S2B	4.36457D-03	SB	6.60649D-02
C	4.19302150D 02	S2C	1.53877D 02	SC	1.24047D 01
D	5.73326682D 03	S2D	8.29359D 05	SD	9.10692D 02
E	1.30769435D 05	S2E	4.24458D 08	SE	2.06024D 04
P1	1.05512390D 03	S2P1	4.45575D-02	SP1	2.11087D-01
P2	9.47797502D 02	S2P2	1.56018D-02	SP2	1.24907D-01
P3	8.47405128D 02	S2P3	9.02538D-03	SP3	9.50020D-02
P4	7.34945792D 02	S2P4	6.75254D-03	SP4	8.21738D-02
P5	6.35649873D 02	S2P5	4.58809D-03	SP5	6.77355D-02

COVARIANCES

S2BC	-7.75201D-01	S2BD	5.27614D 01
S2BE	-1.10169D 03	S2BP1	-3.48633D-03
S2BP2	2.14379D-04	S2BP3	1.80048D-03
S2BP4	1.95233D-03	S2BP5	1.35672D-03
S2BN	-9.35550D-07	S2CD	-1.10840D 04
S2CE	2.40964D 05	S2CP1	9.15611D-01
S2CP2	-1.04337D-02	S2CP3	-4.30229D-01
S2CP4	-5.05121D-01	S2CP5	-3.67867D-01
S2CN	1.47124D-04	S2DE	-1.85529D 07

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

COVARIANCES

S2DP1	-8.36921D 01	S2DP2	-3.94565D 00
S2DP3	3.40117D 01	S2DP4	4.35284D 01
S2DP5	3.38413D 01	S2DN	-9.58978D-03
S2EP1	2.26500D 03	S2EP2	2.62309D 02
S2EP3	-7.30340D 02	S2EP4	-1.03860D 03
S2EP5	-8.51135D 02	S2EN	1.93619D-01
S2P1P2	2.15567D-02	S2P1P3	8.39440D-03
S2P1P4	1.09211D-04	S2P1P5	-2.77329D-03
S2P1N	5.40243D-07	S2P2P3	8.79351D-03
S2P2P4	4.41473D-03	S2P2P5	1.88397D-03
S2P2N	-4.85421D-08	S2P3P4	6.17639D-03
S2P3P5	4.16355D-03	S2P3N	-2.89394D-07
S2P4P5	4.76172D-03	S2P4N	-2.95060D-07
S2P5N	-2.15684D-07		

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-25-1		
0	1.03140810 03	1.03156690 03	-1.58878D-01	-1.54040D-04
1	5.17804410 02	5.17973640 02	-1.69231D-01	-3.26824D-04
2	2.95814580 02	2.95874680 02	-6.00968D-02	-2.03157D-04
3	1.80000100 02	1.80038740 02	-3.86400D-02	-2.14667D-04
4	1.13072570 02	1.13093390 02	-2.08268D-02	-1.84190D-04
5	7.22385700 01	7.22484090 01	-9.83834D-03	-1.36192D-04
6	4.65848090 01	4.65906690 01	-5.86012D-03	-1.25795D-04
7	3.02053620 01	3.02093810 01	-4.01930D-03	-1.33066D-04
8	1.96488420 01	1.96522010 01	-3.35830D-03	-1.70916D-04
9	1.28072960 01	1.28103330 01	-3.03659D-03	-2.37099D-04
10	8.35892090 00	8.36108210 00	-2.16118D-03	-2.58547D-04
11	5.46321250 00	5.46155740 00	1.65509D-03	3.02951D-04
12	3.57017800 00	3.56941140 00	7.66554D-04	2.14710D-04
13	2.33385190 00	2.33358080 00	2.71138D-04	1.16176D-04
14	1.52607050 00	1.52596260 00	1.07894D-04	7.07004D-05
		RUN NO. 50HE-50N2-25-2		
0	9.13863140 02	9.13565970 02	9.71699D-02	1.06352D-04
1	4.71207250 02	4.71166560 02	4.06934D-02	8.63599D-05
2	2.72749550 02	2.72712230 02	3.73153D-02	1.36811D-04
3	1.67047910 02	1.67031230 02	1.66707D-02	9.97959D-05
4	1.05291530 02	1.05279010 02	1.25197D-02	1.18905D-04
5	6.73919000 01	6.73812890 01	1.06102D-02	1.57441D-04
6	4.35090610 01	4.34982880 01	1.07731D-02	2.47607D-04
7	2.82280660 01	2.82221320 01	5.93415D-03	2.10221D-04
8	1.83691850 01	1.83665350 01	2.64949D-03	1.44236D-04
9	1.19756100 01	1.19751620 01	4.47886D-04	3.73998D-05
10	7.81728350 00	7.81717800 00	1.05506D-04	1.34965D-05
11	5.10684660 00	5.10677390 00	7.27501D-05	1.42456D-05
12	3.33765190 00	3.33775320 00	-1.01279D-04	-3.03444D-05
13	2.18201430 00	2.18221860 00	-2.04310D-04	-9.36338D-05
14	1.42676360 00	1.42702270 00	-2.59100D-04	-1.81600D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-25-3		
0	8.1006679D 02	8.1019345D 02	-1.26662D-01	-1.56360D-04
1	4.2833623D 02	4.2836985D 02	-3.36205D-02	-7.84908D-05
2	2.5096630D 02	2.5098016D 02	-1.38636D-02	-5.52407D-05
3	1.5464391D 02	1.5465605D 02	-1.21388D-02	-7.84951D-05
4	9.7785211D 01	9.7789364D 01	-4.15286D-03	-4.24692D-05
5	6.2694074D 01	6.2697628D 01	-3.55329D-03	-5.66766D-05
6	4.0513445D 01	4.0515711D 01	-2.26600D-03	-5.59320D-05
7	2.6300691D 01	2.6302908D 01	-2.21731D-03	-8.43062D-05
8	1.7121569D 01	1.7123890D 01	-2.32046D-03	-1.35529D-04
9	1.1165208D 01	1.1167541D 01	-2.33331D-03	-2.08980D-04
10	7.2927588D 00	7.2910535D 00	1.70525D-03	2.33828D-04
11	4.7641469D 00	4.7635205D 00	6.26413D-04	1.31485D-04
12	3.1138045D 00	3.1135954D 00	2.09051D-04	6.71367D-05
13	2.0357955D 00	2.0357453D 00	5.02150D-05	2.46660D-05
14	1.3312269D 00	1.3312735D 00	-4.65621D-05	-3.49768D-05
		RUN NO. 50HE-50N2-25-4		
0	7.2205265D 02	7.2194100D 02	1.11652D-01	1.54632D-04
1	3.9037653D 02	3.9030982D 02	6.67095D-02	1.70885D-04
2	2.3121265D 02	2.3118482D 02	2.78352D-02	1.20388D-04
3	1.4324791D 02	1.4323840D 02	9.51284D-03	6.64082D-05
4	9.0837167D 01	9.0831943D 01	5.22444D-03	5.75144D-05
5	5.8333976D 01	5.8330521D 01	3.45457D-03	5.92206D-05
6	3.7731214D 01	3.7728825D 01	2.38861D-03	6.33060D-05
7	2.4507630D 01	2.4507378D 01	2.52625D-04	1.03080D-05
8	1.5960331D 01	1.5960460D 01	-1.28176D-04	-8.03093D-06
9	1.0413356D 01	1.0411053D 01	2.30273D-03	2.21133D-04
10	6.7987645D 00	6.7980956D 00	6.68868D-04	9.83808D-05
11	4.4419206D 00	4.4418458D 00	7.47598D-05	1.68305D-05
12	2.9032473D 00	2.9035043D 00	-2.57033D-04	-8.85328D-05
13	1.8980695D 00	1.8984530D 00	-3.83533D-04	-2.02065D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-25-5		
0	6.1376705D 02	6.13665190 02	1.01858D-01	1.65956D-04
1	3.4148429D 02	3.41410260 02	7.40383D-02	2.16813D-04
2	2.0510101D 02	2.05072210 02	2.87969D-02	1.40404D-04
3	1.2797176D 02	1.27964050 02	7.71147D-03	6.02591D-05
4	8.1459218D 01	8.14542440 01	4.97437D-03	6.10658D-05
5	5.2423852D 01	5.24198150 01	4.03725D-03	7.70118D-05
6	3.3955348D 01	3.39479600 01	7.38847D-03	2.17594D-04
7	2.2071369D 01	2.20680470 01	3.32197D-03	1.50510D-04
8	1.4379496D 01	1.43785340 01	9.62273D-04	6.69198D-05
9	9.3818842D 00	9.38190880 00	-2.45475D-05	-2.61648D-06
10	6.1267985D 00	6.12724170 00	-4.43221D-04	-7.23414D-05
11	4.0040366D 00	4.00399420 00	4.23589D-05	1.05791D-05
12	2.6172446D 00	2.61749710 00	-2.52460D-04	-9.64601D-05
13	1.7113343D 00	1.71153390 00	-1.99636D-04	-1.16655D-04
		RUN NO. 50HE-50N2-25-6		
0	1.0459783D 03	1.04586750 03	1.10748D-01	1.05880D-04
1	5.2344165D 02	5.23512730 02	-7.10803D-02	-1.35794D-04
2	2.9856227D 02	2.98575490 02	-1.32169D-02	-4.42687D-05
3	1.8152667D 02	1.81543320 02	-1.66487D-02	-9.17148D-05
4	1.1397950D 02	1.13993430 02	-1.39307D-02	-1.22221D-04
5	7.2800770D 01	7.28076910 01	-6.92046D-03	-9.50603D-05
6	4.6942029D 01	4.69455530 01	-3.52358D-03	-7.50623D-05
7	3.0433903D 01	3.04372660 01	-3.36364D-03	-1.10523D-04
8	1.9796731D 01	1.97995660 01	-2.83448D-03	-1.43179D-04
9	1.2906763D 01	1.29060350 01	7.27928D-04	5.63990D-05
10	8.4229103D 00	8.42339690 00	-4.86573D-04	-5.77678D-05
11	5.5016020D 00	5.50220030 00	-5.98314D-04	-1.08753D-04
12	3.5953116D 00	3.59594760 00	-6.35966D-04	-1.76888D-04
13	2.3502912D 00	2.35091830 00	-6.27046D-04	-2.66795D-04
14	1.5381523D 00	1.53729520 00	8.57075D-04	5.57211D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 7.45444D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52862583D 00	S2N	8.44971D-10	SN	2.90684D-05
B	1.23826996D 01	S2B	1.46591D-02	SB	1.21075D-01
C	5.54356408D 02	S2C	5.48783D 02	SC	2.34261D 01
D	6.64937135D 03	S2D	3.15497D 06	SD	1.77622D 03
E	2.84198517D 05	S2E	1.69938D 09	SE	4.12236D 04
P1	1.03156694D 03	S2P1	9.29685D-02	SP1	3.04907D-01
P2	9.13565971D 02	S2P2	3.68634D-02	SP2	1.91998D-01
P3	8.10193449D 02	S2P3	2.57567D-02	SP3	1.60489D-01
P4	7.21941002D 02	S2P4	2.14910D-02	SP4	1.46598D-01
P5	6.13665188D 02	S2P5	1.34724D-02	SP5	1.16071D-01
P6	1.04586754D 03	S2P6	1.06530D-01	SP6	3.26390D-01

COVARIANCES

S2BC	-2.68630D 00	S2BD	1.89301D 02
S2BE	-4.05482D 03	S2BP1	-6.70260D-03
S2BP2	3.19542D-03	S2BP3	6.54226D-03
S2BP4	6.95580D-03	S2BP5	4.19313D-03
S2BP6	-8.40046D-03	S2BN	-3.13194D-06
S2CD	-4.08553D 04	S2CE	9.11607D 05
S2CP1	1.84884D 00	S2CP2	-7.11752D-01
S2CP3	-1.65233D 00	S2CP4	-1.77815D 00
S2CP5	-1.17442D 00	S2CP6	2.27997D 00
S2CN	5.09102D-04	S2DE	-7.24054D 07
S2DP1	-1.79358D 02	S2DP2	4.91858D 01
S2DP3	1.39184D 02	S2DP4	1.55776D 02
S2DP5	1.11564D 02	S2DP6	-2.17200D 02
S2DN	-3.43901D-02	S2EP1	5.16945D 03
S2EP2	-7.53389D 02	S2EP3	-3.22377D 03
S2EP4	-3.79576D 03	S2EP5	-2.88828D 03
S2EP6	6.13598D 03	S2EN	7.10268D-01
S2P1P2	4.27899D-02	S2P1P3	1.76423D-02
S2P1P4	4.15856D-03	S2P1P5	-3.52289D-03
S2P1P6	9.17249D-02	S2P1N	1.02848D-06
S2P2P3	2.25351D-02	S2P2P4	1.55250D-02
S2P2P5	8.31873D-03	S2P2P6	4.41760D-02
S2P2N	-5.27896D-07	S2P3P4	1.90960D-02
S2P3P5	1.31920D-02	S2P3P6	1.66125D-02
S2P3N	-1.01614D-06	S2P4P5	1.39137D-02
S2P4P6	2.19924D-03	S2P4N	-1.15503D-06
S2P5P6	-5.45177D-03	S2P5N	-6.49267D-07
S2P6N	1.29959D-06		

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 40HE-60N2-25-1		
0	1.0318793D 03	1.0318327D 03	4.65258D-02	4.50884D-05
1	5.0504408D 02	5.0503484D 02	9.24344D-03	1.83022D-05
2	2.8666034D 02	2.8666871D 02	-8.37081D-03	-2.92012D-05
3	1.7442170D 02	1.7442339D 02	-1.69092D-03	-9.69446D-06
4	1.0974566D 02	1.0973737D 02	8.29273D-03	7.55632D-05
5	7.0229940D 01	7.0224772D 01	5.16789D-03	7.35852D-05
6	4.5352320D 01	4.5350327D 01	1.99300D-03	4.39448D-05
7	2.9435493D 01	2.9436433D 01	-9.40470D-04	-3.19502D-05
8	1.9161638D 01	1.9163690D 01	-2.05213D-03	-1.07096D-04
9	1.2496271D 01	1.2498209D 01	-1.93839D-03	-1.55118D-04
10	8.1614344D 00	8.1600664D 00	1.36800D-03	1.67618D-04
11	5.3317916D 00	5.3313733D 00	4.18339D-04	7.84612D-05
12	3.4846688D 00	3.4847768D 00	-1.07984D-04	-3.09884D-05
13	2.2783569D 00	2.2784164D 00	-5.94805D-05	-2.61068D-05
14	1.4899241D 00	1.4899449D 00	-2.07607D-05	-1.39341D-05
		RUN NO. 40HE-60N2-25-2		
0	9.2495784D 02	9.2511452D 02	-1.56674D-01	-1.69385D-04
1	4.6504552D 02	4.6509740D 02	-5.18798D-02	-1.11559D-04
2	2.6732942D 02	2.6736294D 02	-3.35268D-02	-1.25414D-04
3	1.6363668D 02	1.6365337D 02	-1.66934D-02	-1.02015D-04
4	1.0326734D 02	1.0326886D 02	-1.52322D-03	-1.47503D-05
5	6.6190522D 01	6.6188952D 01	1.56980D-03	2.37164D-05
6	4.2779563D 01	4.2780954D 01	-1.39054D-03	-3.25047D-05
7	2.7779930D 01	2.7782443D 01	-2.51221D-03	-9.04326D-05
8	1.8089217D 01	1.8092236D 01	-3.01907D-03	-1.66899D-04
9	1.1798444D 01	1.1801548D 01	-3.10460D-03	-2.63136D-04
10	7.7075968D 00	7.7060811D 00	1.51567D-03	1.96646D-04
11	5.0354680D 00	5.0351197D 00	3.48305D-04	6.91703D-05
12	3.2917167D 00	3.2912843D 00	4.32341D-04	1.31342D-04
13	2.1520570D 00	2.1519702D 00	8.68522D-05	4.03578D-05
14	1.4072646D 00	1.4072835D 00	-1.89250D-05	-1.34481D-05

TABLE 11. EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 40HE-60N2-25-3		
0	8.2027353D 02	8.2026620D 02	7.3343 9D-03	8.941400-06
1	4.2407693D 02	4.2406643D 02	1.0504 0D-02	2.476910-05
2	2.4698032D 02	2.4699094D 02	-1.0620 7D-02	-4.300220-05
3	1.5212417D 02	1.5212890D 02	-4.7377 0D-03	-3.114370-05
4	9.6300237D 01	9.6297568D 01	2.6693 7D-03	2.771930-05
5	6.1826201D 01	6.1823117D 01	3.0835 9D-03	4.987510-05
6	3.9996780D 01	3.9995837D 01	9.4322 9D-04	2.358260-05
7	2.5985874D 01	2.5987530D 01	-1.6561 4D-03	-6.373250-05
8	1.6926109D 01	1.6928725D 01	-2.6156 3D-03	-1.545320-04
9	1.1042143D 01	1.1044732D 01	-2.5896 6D-03	-2.345250-04
10	7.2149913D 00	7.2127756D 00	2.2157 4D-03	3.071020-04
11	4.7136977D 00	4.7131584D 00	5.3932 4D-04	1.144160-04
12	3.0813192D 00	3.0809810D 00	3.3821 9D-04	1.097650-04
13	2.0144678D 00	2.0145297D 00	-6.1851 6D-05	-3.070370-05
14	1.3172816D 00	1.3174313D 00	-1.4970 2D-04	-1.136440-04
		RUN NO. 40HE-60N2-25-4		
0	7.1759203D 02	7.1746240D 02	1.2962 9D-01	1.806450-04
1	3.8186806D 02	3.8182096D 02	4.7103 8D-02	1.233510-04
2	2.2543687D 02	2.2541460D 02	2.2275 3D-02	9.880930-05
3	1.3975887D 02	1.3974330D 02	1.5577 5D-02	1.114600-04
4	8.8763512D 01	8.8748863D 01	1.4649 3D-02	1.650370-04
5	5.7084676D 01	5.7076939D 01	7.7369 0D-03	1.355340-04
6	3.6964895D 01	3.6961561D 01	3.3333 3D-03	9.017550-05
7	2.4034789D 01	2.4029667D 01	5.1213 5D-03	2.130810-04
8	1.5660343D 01	1.5658684D 01	1.6585 3D-03	1.059060-04
9	1.0218584D 01	1.0218271D 01	3.1269 7D-04	3.060080-05
10	6.6733763D 00	6.6739329D 00	-5.5665 1D-04	-8.341360-05
11	4.3610290D 00	4.3614187D 00	-3.8968 8D-04	-8.935680-05
12	2.8510788D 00	2.8512026D 00	-1.2384 5D-04	-4.343790-05
13	1.8641087D 00	1.8643514D 00	-2.4273 0D-04	-1.302120-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 40HE-60N2-25-5		
0	6.1917278D 02	6.1916685D 02	5.93004D-03	9.57736D-06
1	3.3922515D 02	3.3924804D 02	-2.28861D-02	-6.74659D-05
2	2.0300622D 02	2.0302179D 02	-1.55719D-02	-7.67064D-05
3	1.2669133D 02	1.2669302D 02	-1.68498D-03	-1.32998D-05
4	8.0733210D 01	8.0732804D 01	4.06304D-04	5.03268D-06
5	5.2014160D 01	5.2016069D 01	-1.90978D-03	-3.67166D-05
6	3.3716929D 01	3.3718775D 01	-1.84633D-03	-5.47597D-05
7	2.1931452D 01	2.1934576D 01	-3.12328D-03	-1.42411D-04
8	1.4295345D 01	1.4298601D 01	-3.25567D-03	-2.27744D-04
9	9.3303294D 00	9.3328126D 00	-2.48323D-03	-2.66146D-04
10	6.0977427D 00	6.0964618D 00	1.28090D-03	2.10062D-04
11	3.9850266D 00	3.9843968D 00	6.29733D-04	1.58025D-04
12	2.6051176D 00	2.6048805D 00	2.37057D-04	9.09966D-05
13	1.7033440D 00	1.7033489D 00	-4.95281D-06	-2.90770D-06

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 3.21291D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52867678D 00	S2N	5.36141D-10	SN	2.31547D-05
B	1.04690192D 01	S2B	9.69848D-03	SB	9.84809D-02
C	7.16392230D 02	S2C	3.92369D 02	SC	1.98083D 01
D	3.58339715D 03	S2D	2.44466D 06	SD	1.56354D 03
E	5.36377507D 05	S2E	1.42805D 09	SE	3.77896D 04
P1	1.03183273D 03	S2P1	7.80673D-02	SP1	2.79405D-01
P2	9.25134518D 02	S2P2	2.92781D-02	SP2	1.71108D-01
P3	8.20266197D 02	S2P3	1.59127D-02	SP3	1.26146D-01
P4	7.17462403D 02	S2P4	1.24469D-02	SP4	1.11566D-01
P5	6.19166854D 02	S2P5	8.73909D-03	SP5	9.34831D-02

COVARIANCES

S2BC	-1.84739D 00	S2BD	1.35334D 02
S2BE	-3.00439D 03	S2BP1	-7.17371D-03
S2BP2	-3.05269D-04	S2BP3	3.11771D-03
S2BP4	4.22249D-03	S2BP5	3.08347D-03
S2BN	-2.02758D-06	S2CD	-3.03942D 04
S2CE	7.04568D 05	S2CP1	1.99943D 00
S2CP2	1.64913D-01	S2CP3	-7.94185D-01
S2CP4	-1.10773D 00	S2CP5	-8.72246D-01
S2CN	3.42370D-04	S2DE	-5.83768D 07

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

COVARIANCES

S2DP1	-1.95169D 02	S2DP2	-2.58491D 01
S2DP3	6.63963D 01	S2DP4	9.95599D 01
S2DP5	8.38984D 01	S2DN	-2.40142D-02
S2EP1	5.62826D 03	S2EP2	1.08536D 03
S2EP3	-1.47832D 03	S2EP4	-2.48272D 03
S2EP5	-2.21748D 03	S2EN	5.12087D-01
S2P1P2	3.97005D-02	S2P1P3	1.62484D-02
S2P1P4	2.00208D-03	S2P1P5	-4.22226D-03
S2P1N	1.09140D-06	S2P2P3	1.57103D-02
S2P2P4	8.12144D-03	S2P2P5	3.34386D-03
S2P2N	3.14597D-08	S2P3P4	1.07962D-02
S2P3P5	7.44023D-03	S2P3N	-4.74955D-07
S2P4P5	8.61975D-03	S2P4N	-6.91463D-07
S2P5N	-4.73882D-07		

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-25-1		
0	6.30917670 02	6.30965910 02	-4.82474D-02	-7.64718D-05
1	3.37882710 02	3.37892680 02	-9.96386D-03	-2.94891D-05
2	2.01206710 02	2.01227630 02	-2.09251D-02	-1.03998D-04
3	1.25650150 02	1.25657150 02	-6.99889D-03	-5.57014D-05
4	8.02266470 01	8.02270570 01	-4.10569D-04	-5.11762D-06
5	5.17839040 01	5.17864480 01	-2.54357D-03	-4.91189D-05
6	3.36161910 01	3.36190010 01	-2.80918D-03	-8.35663D-05
7	2.18890840 01	2.18926580 01	-3.57397D-03	-1.63276D-04
8	1.42779960 01	1.42815330 01	-3.53627D-03	-2.47673D-04
9	9.32721990 00	9.32609010 00	1.12975D-03	1.21123D-04
10	6.09426070 00	6.09391070 00	3.50029D-04	5.74359D-05
11	3.98381070 00	3.98346470 00	3.46051D-04	8.68644D-05
12	2.60478000 00	2.60454600 00	2.34027D-04	8.98453D-05
13	1.70321060 00	1.70322030 00	-9.63092D-06	-5.65457D-06
		RUN NO. 30HE-70N2-25-2		
0	7.19515150 02	7.19430670 02	8.44821D-02	1.17415D-04
1	3.74010860 02	3.73941290 02	6.95703D-02	1.86011D-04
2	2.19797670 02	2.19769590 02	2.80805D-02	1.27756D-04
3	1.36444820 02	1.36413270 02	3.15521D-02	2.31245D-04
4	8.68620610 01	8.68432510 01	1.88101D-02	2.16551D-04
5	5.59872840 01	5.59753040 01	1.19797D-02	2.13972D-04
6	3.63169820 01	3.63101570 01	6.82521D-03	1.87934D-04
7	2.36381230 01	2.36349600 01	3.16364D-03	1.33836D-04
8	1.54150320 01	1.54142830 01	7.49458D-04	4.86187D-05
9	1.00647300 01	1.00643040 01	4.26518D-04	4.23775D-05
10	6.57545060 00	6.57568160 00	-2.30966D-04	-3.51255D-05
11	4.29818500 00	4.29814440 00	4.05594D-05	9.43640D-06
12	2.81005380 00	2.81019480 00	-1.40952D-04	-5.01599D-05
13	1.83719350 00	1.83766010 00	-4.66626D-04	-2.53988D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-25-3		
0	8.2252777D 02	8.2273176D 02	-2.03986D-01	-2.47999D-04
1	4.1373169D 02	4.1376761D 02	-3.59169D-02	-8.68121D-05
2	2.3958835D 02	2.3962554D 02	-3.71872D-02	-1.55213D-04
3	1.4773814D 02	1.4775574D 02	-1.75965D-02	-1.19106D-04
4	9.3761873D 01	9.3768012D 01	-6.13901D-03	-6.54745D-05
5	6.0341089D 01	6.0343166D 01	-2.07741D-03	-3.44278D-05
6	3.9108155D 01	3.9110918D 01	-2.76338D-03	-7.06600D-05
7	2.5443279D 01	2.5446355D 01	-3.07605D-03	-1.20898D-04
8	1.6588070D 01	1.6591278D 01	-3.20822D-03	-1.93405D-04
9	1.0832438D 01	1.0831098D 01	1.33995D-03	1.23698D-04
10	7.0766080D 00	7.0760057D 00	6.02323D-04	8.51146D-05
11	4.6249818D 00	4.6249030D 00	7.87672D-05	1.70308D-05
12	3.0238091D 00	3.0237211D 00	8.80041D-05	2.91037D-05
13	1.9773057D 00	1.9772431D 00	6.25900D-05	3.16542D-05
14	1.2931566D 00	1.2930915D 00	6.51029D-05	5.03441D-05
		RUN NO. 30HE-70N2-25-4		
0	9.1867867D 02	9.1844640D 02	2.32276D-01	2.52837D-04
1	4.4892521D 02	4.4882487D 02	1.00336D-01	2.23503D-04
2	2.5661506D 02	2.5658510D 02	2.99604D-02	1.16752D-04
3	1.5731370D 02	1.5729921D 02	1.44817D-02	9.20562D-05
4	9.9564144D 01	9.9552025D 01	1.21193D-02	1.21723D-04
5	6.3984255D 01	6.3978278D 01	5.97621D-03	9.34013D-05
6	4.1439824D 01	4.1437496D 01	2.32756D-03	5.61671D-05
7	2.6954318D 01	2.6949584D 01	4.73404D-03	1.75632D-04
8	1.7569069D 01	1.7567502D 01	1.56746D-03	8.92171D-05
9	1.1467043D 01	1.1466893D 01	1.49516D-04	1.30388D-05
10	7.4904938D 00	7.4907769D 00	-2.83094D-04	-3.77938D-05
11	4.8954998D 00	4.8957567D 00	-2.56949D-04	-5.24867D-05
12	3.2004070D 00	3.2007029D 00	-2.95819D-04	-9.24318D-05
13	2.0929279D 00	2.0929315D 00	-3.59881D-06	-1.71951D-06
14	1.3686062D 00	1.3687326D 00	-1.26362D-04	-9.23291D-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-25-5		
0	1.0270584D 03	1.0271414D 03	-8.2954D-02	-8.0768D-05
1	4.8675577D 02	4.8682360D 02	-6.7828D-02	-1.3934D-04
2	2.7440784D 02	2.7445050D 02	-4.2659D-02	-1.5546D-04
3	1.6718276D 02	1.6720881D 02	-2.6054D-02	-1.5584D-04
4	1.0550398D 02	1.0551608D 02	-1.2096D-02	-1.1465D-04
5	6.7707155D 01	6.7713605D 01	-6.4501D-03	-9.5264D-05
6	4.3818536D 01	4.3824005D 01	-5.4691D-03	-1.2481D-04
7	2.8485552D 01	2.8490100D 01	-4.5477D-03	-1.5965D-04
8	1.8563105D 01	1.8567427D 01	-4.3216D-03	-2.3280D-04
9	1.2119037D 01	1.2117934D 01	1.1034D-03	9.1054D-05
10	7.9157970D 00	7.9154204D 00	3.7659D-04	4.7575D-05
11	5.1730650D 00	5.1730279D 00	3.7027D-05	7.1577D-06
12	3.3818328D 00	3.3818661D 00	-3.3246D-05	-9.8308D-06
13	2.2115485D 00	2.2113484D 00	2.0008D-04	9.0470D-05
14	1.4463180D 00	1.4461556D 00	1.6233D-04	1.1224D-04

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 2.55151D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528751220 00	S2N	4.2244D-10	SN	2.0553D-05
B	7.6688227D 00	S2B	7.9390D-03	SB	8.9101D-02
C	8.9453053D 02	S2C	3.4557D 02	SC	1.8589D 01
D	1.5249247D 03	S2D	2.2995D 06	SD	1.5164D 03
E	8.9311805D 05	S2E	1.4205D 09	SE	3.7689D 04
P1	6.3096591D 02	S2P1	7.4848D-03	SP1	8.6515D-02
P2	7.1943067D 02	S2P2	9.7651D-03	SP2	9.8818D-02
P3	8.2273176D 02	S2P3	1.2646D-02	SP3	1.1245D-01
P4	9.1844639D 02	S2P4	2.2654D-02	SP4	1.5051D-01
P5	1.0271413D 03	S2P5	5.9070D-02	SP5	2.4304D-01

COVARIANCES

S2BC	-1.5698D 00	S2BD	1.1891D 02
S2BE	-2.7076D 03	S2BP1	2.8383D-03
S2BP2	3.3524D-03	S2BP3	2.0927D-03
S2BP4	-5.4546D-04	S2BP5	-5.9105D-03
S2BN	-1.6266D-06	S2CD	-2.7668D 04
S2CE	6.5893D 05	S2CP1	-8.0639D-01
S2CP2	-8.9750D-01	S2CP3	-5.4203D-01
S2CP4	2.1433D-01	S2CP5	1.6930D 00

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

COVARIANCES

S2CN	2.85252D-04	S2DE	-5.64434D 07
S2DP1	7.79594D 01	S2DP2	8.21612D 01
S2DP3	4.53793D 01	S2DP4	-2.89620D 01
S2DP5	-1.69445D 02	S2DN	-2.06844D-02
S2EP1	-2.07907D 03	S2EP2	-2.07842D 03
S2EP3	-9.80199D 02	S2EP4	1.12806D 03
S2EP5	4.99620D 03	S2EN	4.50548D-01
S2P1P2	6.98246D-03	S2P1P3	5.90970D-03
S2P1P4	3.06402D-03	S2P1P5	-2.52344D-03
S2P1N	-4.36485D-07	S2P2P3	8.21736D-03
S2P2P4	6.60021D-03	S2P2P5	2.62780D-03
S2P2N	-5.44345D-07	S2P3P4	1.26355D-02
S2P3P5	1.41735D-02	S2P3N	-3.11773D-07
S2P4P5	3.02907D-02	S2P4N	7.38745D-08
S2P5N	8.85767D-07		

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-25-1		
0	6.2198962D 02	6.2196413D 02	2.54907D-02	4.09825D-05
1	3.2660484D 02	3.2657421D 02	3.06340D-02	9.37954D-05
2	1.9419675D 02	1.9419082D 02	5.93379D-03	3.05556D-05
3	1.2166171D 02	1.2165525D 02	6.46036D-03	5.31010D-05
4	7.7964245D 01	7.7957811D 01	6.43384D-03	8.25230D-05
5	5.0475343D 01	5.0472940D 01	2.40318D-03	4.76110D-05
6	3.2838846D 01	3.2838675D 01	1.71075D-04	5.20954D-06
7	2.1416280D 01	2.1417683D 01	-1.40312D-03	-6.55166D-05
8	1.3988679D 01	1.3986600D 01	2.07951D-03	1.48657D-04
9	9.1408823D 00	9.1401557D 00	7.26585D-04	7.94874D-05
10	5.9753230D 00	5.9753994D 00	-7.63238D-05	-1.27732D-05
11	3.9072418D 00	3.9073455D 00	-1.03684D-04	-2.65362D-05
12	2.5552425D 00	2.5553974D 00	-1.54927D-04	-6.06309D-05
13	1.6712832D 00	1.6713734D 00	-9.02305D-05	-5.39888D-05
		RUN NO. 20HE-80N2-25-2		
0	7.1747202D 02	7.1740346D 02	6.85584D-02	9.55555D-05
1	3.6311008D 02	3.6305250D 02	5.75813D-02	1.58578D-04
2	2.1257112D 02	2.1255241D 02	1.87013D-02	8.79766D-05
3	1.3229582D 02	1.3228448D 02	1.13409D-02	8.57237D-05
4	8.4531545D 01	8.4521835D 01	9.70916D-03	1.14858D-04
5	5.4661863D 01	5.4648484D 01	1.33783D-02	2.44747D-04
6	3.5538801D 01	3.5531903D 01	6.89806D-03	1.94099D-04
7	2.3169340D 01	2.3166451D 01	2.88860D-03	1.24674D-04
8	1.5126854D 01	1.5125908D 01	9.46249D-04	6.25543D-05
9	9.8838106D 00	9.8837018D 00	1.08805D-04	1.10084D-05
10	6.4606553D 00	6.4611212D 00	-4.65900D-04	-7.21134D-05
11	4.2244546D 00	4.2248154D 00	-3.60814D-04	-8.54109D-05
12	2.7626381D 00	2.7629634D 00	-3.25246D-04	-1.17730D-04
13	1.8070066D 00	1.8071091D 00	-1.02533D-04	-5.67419D-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-25-3		
0	8.27678270 02	8.27782540 02	-1.042700-01	-1.259780-04
1	4.02545820 02	4.02559000 02	-1.317620-02	-3.273220-05
2	2.31695800 02	2.31709250 02	-1.345040-02	-5.805200-05
3	1.43171680 02	1.43178810 02	-7.130350-03	-4.980280-05
4	9.11950820 01	9.11951580 01	-7.569410-05	-8.300240-07
5	5.88748710 01	5.88776700 01	-2.798860-03	-4.753920-05
6	3.82517220 01	3.82548920 01	-3.169950-03	-8.287070-05
7	2.49296870 01	2.49330060 01	-3.319060-03	-1.331370-04
8	1.62728380 01	1.62762950 01	-3.456490-03	-2.124080-04
9	1.06363500 01	1.06343000 01	2.049710-03	1.927080-04
10	6.95225140 00	6.95138550 00	8.659250-04	1.245530-04
11	4.54552440 00	4.54522980 00	2.946330-04	6.481830-05
12	2.97237040 00	2.97244500 00	-7.452960-05	-2.507410-05
13	1.94411360 00	1.94409360 00	1.999390-05	1.028430-05
		RUN NO. 20HE-80N2-25-4		
0	9.29324670 02	9.29300920 02	2.375070-02	2.555690-05
1	4.36810330 02	4.36813840 02	-3.511090-03	-8.038020-06
2	2.47740200 02	2.47743520 02	-3.324470-03	-1.341920-05
3	1.52136560 02	1.52143010 02	-6.449860-03	-4.239520-05
4	9.66427030 01	9.66433890 01	-6.864040-04	-7.102500-06
5	6.23182890 01	6.23180500 01	2.396820-04	3.846100-06
6	4.04644250 01	4.04662470 01	-1.822750-03	-4.504560-05
7	2.63638620 01	2.63664500 01	-2.588800-03	-9.819500-05
8	1.72113170 01	1.72093680 01	1.949050-03	1.132420-04
9	1.12433830 01	1.12429720 01	4.109260-04	3.654830-05
10	7.34875780 00	7.34889990 00	-1.420110-04	-1.932450-05
11	4.80485270 00	4.80500880 00	-1.561070-04	-3.248940-05
12	3.14216230 00	3.14227700 00	-1.146660-04	-3.649270-05
13	2.05509920 00	2.05514760 00	-4.839740-05	-2.354990-05
14	1.34430910 00	1.34422470 00	8.442610-05	6.280260-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-25-5		
0	1.0211029D 03	1.0210860D 03	1.68540D-02	1.65057D-05
1	4.6629029D 02	4.6635851D 02	-6.82141D-02	-1.46291D-04
2	2.6114023D 02	2.6117042D 02	-3.01957D-02	-1.15630D-04
3	1.5952266D 02	1.5954128D 02	-1.86217D-02	-1.16734D-04
4	1.0110288D 02	1.0111001D 02	-7.12359D-03	-7.04589D-05
5	6.5123810D 01	6.5129945D 01	-6.13459D-03	-9.41989D-05
6	4.2265004D 01	4.2271038D 01	-6.03304D-03	-1.42743D-04
7	2.7530243D 01	2.7535536D 01	-5.29351D-03	-1.92280D-04
8	1.7965808D 01	1.7970095D 01	-4.28711D-03	-2.38626D-04
9	1.1740478D 01	1.1739126D 01	1.35219D-03	1.15173D-04
10	7.6733605D 00	7.6728972D 00	4.63245D-04	6.03706D-05
11	5.0169456D 00	5.0167315D 00	2.14154D-04	4.26862D-05
12	3.2807455D 00	3.2806871D 00	5.83929D-05	1.77987D-05
13	2.1456468D 00	2.1456528D 00	-5.98341D-06	-2.78863D-06
14	1.4035869D 00	1.4034140D 00	1.72916D-04	1.23196D-04

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.70677D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52868022D 00	S2N	4.92339D-10	SN	2.21887D-05
B	4.21238695D 00	S2B	1.47462D-02	SB	1.21434D-01
C	1.05151414D 03	S2C	1.46746D 03	SC	3.83074D 01
D	5.06432868D 03	S2D	2.80377D 07	SD	5.29507D 03
E	1.01378211D 06	S2E	9.35317D 10	SE	3.05829D 05
F	8.68497859D 06	S2F	3.90073D 13	SF	6.24559D 06
P1	6.21964128D 02	S2P1	6.33474D-03	SP1	7.95911D-02
P2	7.17403461D 02	S2P2	9.96383D-03	SP2	9.98190D-02
P3	8.27782539D 02	S2P3	1.19651D-02	SP3	1.09385D-01
P4	9.29300918D 02	S2P4	1.71977D-02	SP4	1.31140D-01
P5	1.02108604D 03	S2P5	4.69438D-02	SP5	2.16665D-01

COVARIANCES

S2BC	-4.45211D 00	S2BD	5.73919D 02
S2BE	-3.07039D 04	S2BF	5.86457D 05
S2BP1	-1.19532D-03	S2BP2	-3.00357D-03
S2BP3	-3.31818D-03	S2BP4	-1.02153D-03
S2BP5	5.33816D-03	S2BN	-2.45318D-06
S2CD	-1.99114D 05	S2CE	1.10482D 07
S2CF	-2.15960D 08	S2CP1	6.06373D-01

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

COVARIANCES

S2CP2	1.33405D 00	S2CP3	1.41330D 00
S2CP4	3.25631D-01	S2CP5	-2.29287D 00
S2CN	6.72158D-04	S2DE	-1.60080D 09
S2DF	3.19262D 10	S2DP1	-1.19477D 02
S2DP2	-2.32408D 02	S2DP3	-2.33259D 02
S2DP4	-3.84234D 01	S2DP5	3.93006D 02
S2DN	-8.30466D-02	S2EF	-1.89751D 12
S2EP1	9.01121D 03	S2EP2	1.58302D 04
S2EP3	1.50217D 04	S2EP4	1.40374D 03
S2EP5	-2.68843D 04	S2EN	4.31431D 00
S2FP1	-2.18104D 05	S2FP2	-3.56705D 05
S2FP3	-3.21015D 05	S2FP4	-3.19708D 03
S2FP5	6.26870D 05	S2FN	-8.11637D 01
S2P1P2	6.65480D-03	S2P1P3	5.59819D-03
S2P1P4	1.74239D-03	S2P1P5	-4.71990D-03
S2P1N	1.32926D-07	S2P2P3	8.46290D-03
S2P2P4	4.46623D-03	S2P2P5	-3.18579D-03
S2P2N	3.56190D-07	S2P3P4	9.13044D-03
S2P3P5	5.24214D-03	S2P3N	3.89173D-07
S2P4P5	2.13364D-02	S2P4N	1.66837D-07
S2P5N	-6.61277D-07		

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.;	REL. ERROR IN P
		RUN NO. 10HE-90N2-25-1		
0	6.3043377D 02	6.3038246D 02	5.1309D-02	8.1386D-05
1	3.2170311D 02	3.2165058D 02	5.2529D-02	1.6328D-04
2	1.9054141D 02	1.9053354D 02	7.8682D-03	4.1294D-05
3	1.1971455D 02	1.1970720D 02	7.3517D-03	6.1410D-05
4	7.7010694D 01	7.7002447D 01	8.2474D-03	1.0709D-04
5	5.0017647D 01	5.0015985D 01	1.6620D-03	3.3228D-05
6	3.2619140D 01	3.2619941D 01	-8.0079D-04	-2.4550D-05
7	2.1313702D 01	2.1311079D 01	2.6228D-03	1.2305D-04
8	1.3933376D 01	1.3932989D 01	3.8613D-04	2.7712D-05
9	9.1119670D 00	9.1120676D 00	-1.0061D-04	-1.1041D-05
10	5.9595223D 00	5.9599937D 00	-4.7138D-04	-7.9089D-05
11	3.8982351D 00	3.8985051D 00	-2.7005D-04	-6.9263D-05
12	2.5501899D 00	2.5501166D 00	7.3305D-05	2.8745D-05
13	1.6680420D 00	1.6681144D 00	-7.2432D-05	-4.3423D-05
		RUN NO. 10HE-90N2-25-2		
0	7.1853608D 02	7.1872663D 02	-1.9054D-01	-2.6517D-04
1	3.5292930D 02	3.5295471D 02	-2.5407D-02	-7.1990D-05
2	2.0584671D 02	2.0587489D 02	-2.8176D-02	-1.3688D-04
3	1.2854706D 02	1.2856099D 02	-1.3935D-02	-1.0841D-04
4	8.2485035D 01	8.2493194D 01	-8.1580D-03	-9.8903D-05
5	5.3521341D 01	5.3527182D 01	-5.8412D-03	-1.0913D-04
6	3.4888209D 01	3.4894735D 01	-6.5256D-03	-1.8704D-04
7	2.2786757D 01	2.2793041D 01	-6.2832D-03	-2.7574D-04
8	1.4895440D 01	1.4900722D 01	-5.2823D-03	-3.5463D-04
9	9.7461856D 00	9.7446372D 00	1.5483D-03	1.5887D-04
10	6.3744466D 00	6.3736552D 00	7.9141D-04	1.2415D-04
11	4.1692492D 00	4.1690624D 00	1.8676D-04	4.4796D-05
12	2.7273970D 00	2.7270891D 00	3.0791D-04	1.1289D-04
13	1.7841068D 00	1.7838763D 00	2.3058D-04	1.2924D-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 10HE-90N2-25-3		
0	8.3457172D 02	8.3436596D 02	2.057580-01	2.46543D-04
1	3.9125450D 02	3.9118937D 02	6.513870-02	1.664870-04
2	2.2388808D 02	2.2386991D 02	1.817050-02	8.115890-05
3	1.3876416D 02	1.3875507D 02	9.087670-03	6.549010-05
4	8.8794273D 01	8.8764859D 01	2.941420-02	3.312620-04
5	5.7539796D 01	5.7524169D 01	1.562730-02	2.715910-04
6	3.7487067D 01	3.7480522D 01	6.544480-03	1.745800-04
7	2.4479094D 01	2.4476572D 01	2.522550-03	1.030490-04
8	1.5999925D 01	1.5999795D 01	1.301630-04	8.135200-06
9	1.0462867D 01	1.0462980D 01	-1.121680-04	-1.072050-05
10	6.8430123D 00	6.8433849D 00	-3.726220-04	-5.445290-05
11	4.4758590D 00	4.4762854D 00	-4.264120-04	-9.526920-05
12	2.9276239D 00	2.9280431D 00	-4.192090-04	-1.431910-04
13	1.9152051D 00	1.9153245D 00	-1.193870-04	-6.233640-05
		RUN NO. 10HE-90N2-25-4		
0	9.0878345D 02	9.0885992D 02	-7.647230-02	-8.414800-05
1	4.1440348D 02	4.1447322D 02	-6.973370-02	-1.682750-04
2	2.3441917D 02	2.3445326D 02	-3.409190-02	-1.454310-04
3	1.4462862D 02	1.4465317D 02	-2.454270-02	-1.696950-04
4	9.2359558D 01	9.2367968D 01	-8.409740-03	-9.105440-05
5	5.9806425D 01	5.9813565D 01	-7.140650-03	-1.193960-04
6	3.8953398D 01	3.8959718D 01	-6.319360-03	-1.622290-04
7	2.5433625D 01	2.5439109D 01	-5.484640-03	-2.156450-04
8	1.6628551D 01	1.6628030D 01	5.208900-04	3.132510-05
9	1.0875095D 01	1.0873547D 01	1.547350-03	1.422840-04
10	7.1126011D 00	7.1118474D 00	7.536780-04	1.059640-04
11	4.6519081D 00	4.6518681D 00	3.995080-05	8.588050-06
12	3.0428006D 00	3.0428906D 00	-8.991020-05	-2.954850-05
13	1.9905325D 00	1.9904485D 00	8.407650-05	4.223820-05
14	1.3021015D 00	1.3020203D 00	8.116470-05	6.233370-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 10HE-90N2-25-6		
0	5.3341277D 02	5.33403560 02	9.20660D-03	1.72598D-05
1	2.8467148D 02	2.8465370D 02	1.77794D-02	6.24559D-05
2	1.7164826D 02	1.7164959D 02	-1.32541D-03	-7.72167D-06
3	1.0861125D 02	1.0860718D 02	4.06367D-03	3.74148D-05
4	7.0067570D 01	7.0064418D 01	3.15219D-03	4.49878D-05
5	4.5564404D 01	4.5564445D 01	-4.10743D-05	-9.01457D-07
6	2.9729886D 01	2.9731832D 01	-1.94537D-03	-6.54347D-05
7	1.9432364D 01	1.9428424D 01	3.93998D-03	2.02754D-04
8	1.2705130D 01	1.2703285D 01	1.84437D-03	1.45168D-04
9	8.3085487D 00	8.3081698D 00	3.78924D-04	4.56065D-05
10	5.4341839D 00	5.4342699D 00	-8.60791D-05	-1.58403D-05
11	3.5545162D 00	3.5546463D 00	-1.30124D-04	-3.66080D-05
12	2.3251022D 00	2.3251956D 00	-9.34921D-05	-4.02099D-05
13	1.5208665D 00	1.5209879D 00	-1.21324D-04	-7.97732D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 2.60735D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52873492D 00	S2N	8.23837D-10	SN	2.87026D-05
B	-5.53389740D-02	S2B	2.62996D-02	SB	1.62172D-01
C	1.27732094D 03	S2C	2.97734D 03	SC	5.45650D 01
D	1.69053361D 03	S2D	6.44673D 07	SD	8.02915D 03
E	1.45407794D 06	S2E	2.45105D 11	SE	4.95081D 05
F	1.64153807D 07	S2F	1.17074D 14	SF	1.08201D 07
P1	6.30382459D 02	S2P1	1.15037D-02	SP1	1.07255D-01
P2	7.18726625D 02	S2P2	1.41940D-02	SP2	1.19139D-01
P3	8.34365958D 02	S2P3	2.21338D-02	SP3	1.48774D-01
P4	9.08859921D 02	S2P4	5.36581D-02	SP4	2.31642D-01
P5	5.33403561D 02	S2P5	6.36909D-03	SP5	7.98066D-02

COVARIANCES

S2BC	-8.48607D 00	S2BD	1.16700D 03
S2BE	-6.67937D 04	S2BF	1.36868D 06
S2BP1	-4.41180D-03	S2BP2	-5.40984D-03
S2BP3	-4.65393D-04	S2BP4	6.86705D-03
S2BP5	-1.15259D-03	S2BN	-4.24820D-06
S2CD	-4.30286D 05	S2CE	2.55173D 07
S2CF	-5.34644D 08	S2CP1	2.05238D 00
S2CP2	2.41517D 00	S2CP3	1.80701D-01

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

COVARIANCES

S2CP4	-3.20838D 00	S2CP5	6.53562D-01
S2CN	1.24801D-03	S2DE	-3.93076D 09
S2DF	8.39692D 10	S2DP1	-3.78142D 02
S2DP2	-4.23573D 02	S2DP3	-1.55285D 01
S2DP4	5.90962D 02	S2DP5	-1.44913D 02
S2DN	-1.64501D-01	S2EF	-5.32289D 12
S2EP1	2.74275D 04	S2EP2	2.92336D 04
S2EP3	-5.24432D 02	S2EP4	-4.34689D 04
S2EP5	1.21990D 04	S2EN	9.14116D 00
S2FP1	-6.61212D 05	S2FP2	-6.73987D 05
S2FP3	6.11822D 04	S2FP4	1.09120D 06
S2FP5	-3.25255D 05	S2FN	-1.84504D 02
S2P1P2	1.03178D-02	S2P1P3	4.58975D-03
S2P1P4	-3.38751D-03	S2P1P5	6.97189D-03
S2P1N	5.24665D-07	S2P2P3	9.53195D-03
S2P2P4	4.26048D-03	S2P2P5	6.21821D-03
S2P2N	6.45784D-07	S2P3P4	2.66707D-02
S2P3P5	1.21058D-03	S2P3N	1.80247D-08
S2P4P5	-4.79210D-03	S2P4N	-7.73351D-07
S2P5N	1.29219D-07		

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-25-1		
0	1.0296361D 03	1.0296795D 03	-4.3413DD-02	-4.2163AD-05
1	4.2829545D 02	4.2833644D 02	-4.0983BD-02	-9.5690AD-05
2	2.3623616D 02	2.3623498D 02	1.1778ZD-03	4.9857TD-06
3	1.4537859D 02	1.4537855D 02	4.0399ED-05	2.7789AD-07
4	9.3103880D 01	9.3106037D 01	-2.1572BD-03	-2.3170TD-05
5	6.0485136D 01	6.0487055D 01	-1.9188SD-03	-3.1724AD-05
6	3.9488678D 01	3.9489449D 01	-7.7133SD-04	-1.9533ID-05
7	2.5819385D 01	2.5819628D 01	-2.4335ID-04	-9.4251SD-06
8	1.6888858D 01	1.6886833D 01	2.0244ZD-03	1.1986TD-04
9	1.1044385D 01	1.1043611D 01	7.7328ED-04	7.0016OD-05
10	7.2211713D 00	7.2210706D 00	1.0070DD-04	1.3945ID-05
11	4.7207103D 00	4.7208934D 00	-1.8305ZD-04	-3.8776ED-05
12	3.0858296D 00	3.0859850D 00	-1.5539SD-04	-5.0357GD-05
13	2.0168899D 00	2.0170895D 00	-1.9956ZD-04	-9.8945GD-05
14	1.3184781D 00	1.3183477D 00	1.3042ZD-04	9.8922AD-05
		RUN NO. N2-25-2		
0	8.8679106D 02	8.8677853D 02	1.2524ND-02	1.4123BD-05
1	3.8964391D 02	3.8969153D 02	-4.7622JD-02	-1.2222DD-04
2	2.1981960D 02	2.1982522D 02	-5.6159BD-03	-2.5548ID-05
3	1.3639839D 02	1.3640327D 02	-4.8830ND-03	-3.5800ZD-05
4	8.7614790D 01	8.7618901D 01	-4.1105SD-03	-4.6916ID-05
5	5.6979184D 01	5.6981995D 01	-2.8116JD-03	-4.9344BD-05
6	3.7212447D 01	3.7213779D 01	-1.3318ID-03	-3.5789AD-05
7	2.4332932D 01	2.4333802D 01	-8.6995DD-04	-3.5751ND-05
8	1.5914059D 01	1.5915078D 01	-1.0185ID-03	-6.4000ND-05
9	1.0409377D 01	1.0407880D 01	1.4964JD-03	1.4376ZD-04
10	6.8055523D 00	6.8052266D 00	3.2578AD-04	4.7870JD-05
11	4.4490414D 00	4.4489430D 00	9.8403ZD-05	2.2117BD-05
12	2.9082107D 00	2.9081734D 00	3.7325ZD-05	1.2834AD-05
13	1.9007897D 00	1.9008477D 00	-5.8007JD-05	-3.0517JD-05

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-25-3		
0	7.56392570 02	7.56255560 02	1.370130-01	1.811400-04
1	3.51544770 02	3.51541410 02	3.360260-03	9.558570-06
2	2.02804410 02	2.02791300 02	1.311090-02	6.464810-05
3	1.26869250 02	1.26865170 02	4.078450-03	3.214690-05
4	8.17328160 01	8.17319590 01	8.579450-04	1.049690-05
5	5.32123740 01	5.32080090 01	4.365100-03	8.203160-05
6	3.47634120 01	3.47603670 01	3.044670-03	8.758250-05
7	2.27327200 01	2.27312660 01	1.454120-03	6.396590-05
8	1.48678790 01	1.48668900 01	9.884920-04	6.648510-05
9	9.72236010 00	9.72215040 00	2.097410-04	2.157310-05
10	6.35638220 00	6.35669180 00	-3.096140-04	-4.870910-05
11	4.15521470 00	4.15562360 00	-4.089380-04	-9.841560-05
12	2.71639400 00	2.71639490 00	-9.040130-07	-3.327990-07
13	1.77539690 00	1.77547770 00	-8.082830-05	-4.552690-05
		RUN NO. N2-25-4		
0	6.22272800 02	6.22493740 02	-2.209450-01	-3.550620-04
1	3.08549040 02	3.08642950 02	-9.391870-02	-3.043880-04
2	1.82496040 02	1.82535610 02	-3.956490-02	-2.167990-04
3	1.15206710 02	1.15232270 02	-2.556040-02	-2.218660-04
4	7.44622070 01	7.44792020 01	-1.699520-02	-2.282390-04
5	4.85301170 01	4.85408040 01	-1.068770-02	-2.202280-04
6	3.17151210 01	3.17222430 01	-7.121910-03	-2.245590-04
7	2.07413730 01	2.07459810 01	-4.608080-03	-2.221690-04
8	1.35648580 01	1.35682390 01	-3.381200-03	-2.492620-04
9	8.87250190 00	8.87258060 00	-7.869650-05	-8.869700-06
10	5.80093470 00	5.80101300 00	-7.829030-05	-1.349620-05
11	3.79227590 00	3.79225190 00	2.398830-05	6.325570-06
12	2.47918520 00	2.47882240 00	3.628260-04	1.463490-04
13	1.62074670 00	1.62017460 00	5.720710-04	3.529680-04

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.I	REL. ERROR IN P
		RUN NO. N2-25-5		
0	4.89396780 02	4.89179240 02	2.17541D-01	4.44508D-04
1	2.60639350 02	2.60556690 02	8.26573D-02	3.17133D-04
2	1.58338980 02	1.58298010 02	4.09792D-02	2.58807D-04
3	1.00932390 02	1.00910230 02	2.21572D-02	2.19525D-04
4	6.54623790 01	6.54494330 01	1.29469D-02	1.97777D-04
5	4.27140170 01	4.27059780 01	8.03836D-03	1.88190D-04
6	2.79233110 01	2.79186210 01	4.68963D-03	1.67947D-04
7	1.82618170 01	1.82594190 01	2.39862D-03	1.31346D-04
8	1.19435270 01	1.19415660 01	1.96196D-03	1.64270D-04
9	7.80892660 00	7.80845940 00	4.67243D-04	5.98345D-05
10	5.10480350 00	5.10504330 00	-2.39719D-04	-4.69595D-05
11	3.33670690 00	3.33716460 00	-4.57701D-04	-1.37171D-04
12	2.18106820 00	2.18129820 00	-2.30010D-04	-1.05458D-04
13	1.42538920 00	1.42568640 00	-2.97172D-04	-2.08485D-04

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALSI OF P 3.74055D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.530201340 00	S2N	1.12981D-09	SN	3.36126D-05
B	-4.437732660 00	S2B	3.52769D-02	SB	1.87821D-01
C	1.273293370 03	S2C	4.00542D 03	SC	6.32884D 01
D	3.129508330 04	S2D	8.53905D 07	SD	9.24070D 03
E	9.002666930 04	S2E	3.17234D 11	SE	5.63235D 05
F	7.042015330 07	S2F	1.48374D 14	SF	1.21809D 07
P1	1.029679540 03	S2P1	1.16213D-01	SP1	3.40900D-01
P2	8.867785330 02	S2P2	3.60398D-02	SP2	1.89841D-01
P3	7.562555620 02	S2P3	2.55424D-02	SP3	1.59820D-01
P4	6.224937430 02	S2P4	1.61504D-02	SP4	1.27084D-01
P5	4.891792430 02	S2P5	6.09204D-03	SP5	7.80515D-02

COVARIANCES

S2BC	-1.14093D 01	S2BD	1.55881D 03
S2BE	-8.82947D 04	S2BF	1.79817D 06
S2BP1	1.26465D-02	S2BP2	-4.08975D-03
S2BP3	-8.91609D-03	S2BP4	-5.50183D-03
S2BP5	6.05366D-04	S2BN	-5.74957D-06
S2CD	-5.74574D 05	S2CE	3.37057D 07
S2CF	-7.00591D 08	S2CP1	-5.82116D 00
S2CP2	1.75850D 00	S2CP3	3.96648D 00

TABLE 11. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

COVARIANCES

S2CP4	2.59384D 00	S2CP5	-9.97781D-02
S2CN	1.69452D-03	S2DE	-5.14774D 09
S2DF	1.08962D 11	S2DP1	1.05126D 03
S2DP2	-2.80138D 02	S2DP3	-6.87113D 02
S2DP4	-4.80624D 02	S2DP5	-2.16642D 01
S2DN	-2.22037D-01	S2EF	-6.82031D 12
S2EP1	-7.57880D 04	S2EP2	1.68150D 04
S2EP3	4.67042D 04	S2EP4	3.49092D 04
S2EP5	4.36972D 03	S2EN	1.22101D 01
S2FP1	1.87041D 06	S2FP2	-3.18152D 05
S2FP3	-1.06094D 06	S2FP4	-8.39067D 05
S2FP5	-1.54417D 05	S2FN	-2.45556D 02
S2P1P2	4.06999D-02	S2P1P3	5.61477D-03
S2P1P4	-8.30295D-03	S2P1P5	-6.27154D-03
S2P1N	-1.46347D-06	S2P2P3	1.92092D-02
S2P2P4	9.48107D-03	S2P2P5	2.16111D-03
S2P2N	4.47609D-07	S2P3P4	1.58198D-02
S2P3P5	6.28475D-03	S2P3N	1.07414D-06
S2P4P5	7.09980D-03	S2P4N	6.56963D-07
S2P5N	-7.94632D-08		

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.93458D-10	1.05457D-07	-6.97375D-06
2.0000 00	4.27826D-10	7.76668D-08	-4.62981D-06
5.0000 00	2.04302D-09	-1.78288D-07	1.36313D-05
1.0000 01	1.03652D-08	-7.11344D-07	4.83125D-05
2.5000 01	8.11958D-08	-1.56197D-06	7.85417D-05
5.0000 01	3.68683D-07	5.14846D-07	-1.61279D-04
7.5000 01	1.09698D-06	5.99329D-06	-6.54241D-04
1.0000 02	2.58376D-06	1.33360D-05	-1.25453D-03
1.2500 02	4.97415D-06	2.11865D-05	-1.83939D-03
1.5000 02	8.21452D-06	2.84605D-05	-2.31382D-03
2.0000 02	1.67095D-05	3.82185D-05	-2.67613D-03
2.5000 02	2.80838D-05	3.86131D-05	-2.03347D-03
3.0000 02	4.54396D-05	2.83709D-05	-3.34312D-04
3.5000 02	7.45713D-05	8.12604D-06	2.29660D-03
4.0000 02	1.21489D-04	-2.01987D-05	5.61785D-03
4.5000 02	1.89530D-04	-5.38458D-05	9.31471D-03
5.0000 02	2.77424D-04	-8.95525D-05	1.30303D-02
6.0000 02	4.85768D-04	-1.52918D-04	1.90052D-02
7.0000 02	6.88970D-04	-1.81498D-04	2.05334D-02
8.0000 02	9.46163D-04	-1.47813D-04	1.47983D-02
9.0000 02	1.66249D-03	-2.71947D-05	-6.95477D-04
1.0000 03	3.85286D-03	2.01711D-04	-2.80850D-02

PRESSURE, ATM	S2DP
1.0000 00	1.57965D-04
2.0000 00	1.02318D-04
5.0000 00	-3.15983D-04
1.0000 01	-1.08795D-03
2.5000 01	-1.57279D-03
5.0000 01	4.48164D-03
7.5000 01	1.62065D-02
1.0000 02	2.99169D-02
1.2500 02	4.25673D-02
1.5000 02	5.18424D-02
2.0000 02	5.42307D-02
2.5000 02	3.02124D-02
3.0000 02	-2.05383D-02
3.5000 02	-9.38908D-02
4.0000 02	-1.82801D-01
4.5000 02	-2.78425D-01
5.0000 02	-3.70922D-01
6.0000 02	-5.05377D-01
7.0000 02	-5.04947D-01
8.0000 02	-2.94351D-01
9.0000 02	1.92648D-01
1.0000 03	1.01245D 00

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.000D 00	9.436730-10	5.528280-07	-3.827660-05
2.000D 00	2.082260-09	3.847660-07	-2.364310-05
5.000D 00	1.026080-08	-1.031730-06	8.208080-05
1.000D 01	5.254740-08	-3.889660-06	2.753050-04
2.500D 01	4.058810-07	-7.929080-06	3.934790-04
5.000D 01	1.882360-06	5.031680-06	-1.117440-03
7.500D 01	5.748520-06	3.620170-05	-4.027180-03
1.000D 02	1.356750-05	7.638350-05	-7.425370-03
1.250D 02	2.585290-05	1.177860-04	-1.057540-02
1.500D 02	4.213540-05	1.544080-04	-1.293030-02
2.000D 02	8.423360-05	1.972900-04	-1.387950-02
2.500D 02	1.426920-04	1.857090-04	-8.791320-03
3.000D 02	2.372340-04	1.160270-04	2.276990-03
3.500D 02	3.983910-04	-5.156590-06	1.828720-02
4.000D 02	6.527280-04	-1.649230-04	3.761590-02
4.500D 02	1.009240-03	-3.467690-04	5.832680-02
5.000D 02	1.453180-03	-5.324830-04	7.835530-02
6.000D 02	2.456830-03	-8.412060-04	1.081490-01
7.000D 02	3.428150-03	-9.489420-04	1.115280-01
8.000D 02	4.780470-03	-7.311140-04	7.520180-02
9.000D 02	8.468700-03	-8.476110-05	-1.164280-02
1.000D 03	1.884680-02	1.072000-03	-1.574850-01

PRESSURE, ATM	S2DP
1.000D 00	9.374420-04
2.000D 00	5.673830-04
5.000D 00	-2.037020-03
1.000D 01	-6.675510-03
2.500D 01	-8.465650-03
5.000D 01	3.159650-02
7.500D 01	1.049200-01
1.000D 02	1.870510-01
1.250D 02	2.585600-01
1.500D 02	3.052930-01
2.000D 02	2.901700-01
2.500D 02	1.077290-01
3.000D 02	-2.343070-01
3.500D 02	-7.020000-01
4.000D 02	-1.246070 00
4.500D 02	-1.809350 00
5.000D 02	-2.331770 00
6.000D 02	-3.017800 00
7.000D 02	-2.862740 00
8.000D 02	-1.491170 00
9.000D 02	1.399880 00
1.000D 03	6.045980 00

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	3.248950-09	1.986400-06	-1.428700-04
2.0000 00	7.275320-09	1.246370-06	-7.700610-05
5.0000 00	3.787520-08	-4.332770-06	3.556780-04
1.0000 01	1.952160-07	-1.517030-05	1.111340-03
2.5000 01	1.484480-06	-2.835760-05	1.355340-03
5.0000 01	7.061570-06	2.820140-05	-5.313370-03
7.5000 01	2.205590-05	1.540200-04	-1.743820-02
1.0000 02	5.202620-05	3.106820-04	-3.106240-02
1.2500 02	9.815100-05	4.667110-04	-4.309000-02
1.5000 02	1.582000-04	5.986350-04	-5.130560-02
2.0000 02	3.128150-04	7.307110-04	-5.109450-02
2.5000 02	5.365410-04	6.411520-04	-2.553560-02
3.0000 02	9.136550-04	3.274870-04	2.380910-02
3.5000 02	1.556460-03	-1.740740-04	9.156160-02
4.0000 02	2.546740-03	-8.057370-04	1.703270-01
4.5000 02	3.893160-03	-1.499520-03	2.518770-01
5.0000 02	5.522780-03	-2.184630-03	3.278950-01
6.0000 02	9.125350-03	-3.256850-03	4.321400-01
7.0000 02	1.280980-02	-3.529700-03	4.274600-01
8.0000 02	1.854010-02	-2.607640-03	2.702230-01
9.0000 02	3.320210-02	-1.922640-04	-7.180660-02
1.0000 03	7.047960-02	3.931120-03	-6.212830-01

PRESSURE, ATM	S2DP
1.0000 00	3.749470-03
2.0000 00	1.987890-03
5.0000 00	-9.379630-03
1.0000 01	-2.879070-02
2.5000 01	-3.116160-02
5.0000 01	1.532770-01
7.5000 01	4.741170-01
1.0000 02	8.192600-01
1.2500 02	1.102590 00
1.5000 02	1.263820 00
2.0000 02	1.084820 00
2.5000 02	1.707040-01
3.0000 02	-1.406070 00
3.5000 02	-3.466170 00
4.0000 02	-5.775630 00
4.5000 02	-8.079890 00
5.0000 02	-1.012510 01
6.0000 02	-1.249660 01
7.0000 02	-1.122510 01
8.0000 02	5.019640 00
9.0000 02	7.062020 00
1.0000 03	2.567250 01

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	9.020260-10	8.297610-07	-1.173910-04
2.0000 00	2.145850-09	4.248910-07	-5.087910-05
5.0000 00	1.240550-08	-2.014740-06	3.090940-04
1.0000 01	5.932870-08	-5.746460-06	7.816300-04
2.5000 01	4.068460-07	-3.080700-06	-2.682560-04
5.0000 01	2.306490-06	3.737720-05	-7.561930-03
7.5000 01	7.076480-06	8.996500-05	-1.546040-02
1.0000 02	1.455550-05	1.273410-04	-1.911470-02
1.2500 02	2.447120-05	1.354530-04	-1.634420-02
1.5000 02	3.821870-05	1.102360-04	-6.894140-03
2.0000 02	8.882890-05	-2.540200-05	2.733280-02
2.5000 02	1.822960-04	-2.200420-04	6.912130-02
3.0000 02	3.090560-04	-3.990240-04	1.024100-01
3.5000 02	4.514040-04	-5.005020-04	1.148240-01
4.0000 02	6.203300-04	-4.865000-04	9.957950-02
4.5000 02	8.707310-04	-3.447430-04	5.558470-02
5.0000 02	1.280240-03	-8.600280-05	-1.330980-02
6.0000 02	2.735530-03	6.510660-04	-1.920160-01
7.0000 02	4.614030-03	1.348960-03	-3.463510-01
8.0000 02	6.109120-03	1.533190-03	-3.676230-01
9.0000 02	9.159920-03	7.146960-04	-1.463720-01
1.0000 03	2.405960-02	-1.563210-03	4.180730-01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	7.237050-03	-1.404240-01
2.0000 00	2.971500-03	-5.495220-02
5.0000 00	-1.931390-02	3.796160-01
1.0000 01	-4.665380-02	8.840390-01
2.5000 01	3.332070-02	-8.961700-01
5.0000 01	5.030790-01	-1.030570 01
7.5000 01	9.580920-01	-1.863890 01
1.0000 02	1.079530 00	-1.943600 01
1.2500 02	7.383870-01	-1.031740 01
1.5000 02	-6.022990-02	8.260310 00
2.0000 02	-2.622300 00	6.396720 01
2.5000 02	-5.478030 00	1.219980 02
3.0000 02	-7.449560 00	1.566680 02
3.5000 02	-7.675520 00	1.499770 02
4.0000 02	-5.732760 00	9.399070 01
4.5000 02	-1.630350 00	-9.495220 00
5.0000 02	4.254630 00	-1.505220 02
6.0000 02	1.852320 01	-4.760730 02
7.0000 02	2.977370 01	-7.102900 02
8.0000 02	2.947110 01	-6.558110 02
9.0000 02	9.154410 00	-1.191830 02
1.0000 03	-3.887630 01	1.074280 03

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K TTS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.18006D-09	1.09637D-06	-1.59227D-04
2.0000 00	2.81322D-09	5.41876D-07	-6.57427D-05
5.0000 00	1.63865D-08	-2.73717D-06	4.30678D-04
1.0000 01	7.83611D-08	-7.67919D-06	1.06776D-03
2.5000 01	5.38112D-07	-3.65606D-06	-4.74588D-04
5.0000 01	3.04772D-06	5.06628D-05	-1.05588D-02
7.5000 01	9.18290D-06	1.18689D-04	-2.09950D-02
1.0000 02	1.85574D-05	1.63225D-04	-2.50184D-02
1.2500 02	3.10040D-05	1.66059D-04	-1.97726D-02
1.5000 02	4.88572D-05	1.23049D-04	-5.18195D-03
2.0000 02	1.17403D-04	-7.45562D-05	4.43210D-02
2.5000 02	2.43956D-04	-3.39614D-04	1.01674D-01
3.0000 02	4.12464D-04	-5.67934D-04	1.44178D-01
3.5000 02	6.01603D-04	-6.79029D-04	1.55557D-01
4.0000 02	8.33405D-04	-6.28727D-04	1.28054D-01
4.5000 02	1.18504D-03	-4.08710D-04	6.19198D-02
5.0000 02	1.75354D-03	-4.04062D-05	-3.61606D-02
6.0000 02	3.69509D-03	9.52422D-04	-2.79919D-01
7.0000 02	6.12769D-03	1.86037D-03	-4.84709D-01
8.0000 02	8.06717D-03	2.12180D-03	-5.20007D-01
9.0000 02	1.13789D-02	1.20032D-03	-2.63875D-01
1.0000 03	2.57969D-02	-1.37175D-03	3.88370D-01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	1.01285D-02	-2.00083D-01
2.0000 00	3.95590D-03	-7.38375D-02
5.0000 00	-2.77196D-02	5.55548D-01
1.0000 01	-6.56502D-02	1.26429D 00
2.5000 01	5.40104D-02	-1.46080D 00
5.0000 01	7.22714D-01	-1.51635D 01
7.5000 01	1.33921D 00	-2.66476D 01
1.0000 02	1.44698D 00	-2.64883D 01
1.2500 02	8.74736D-01	-1.15137D 01
1.5000 02	-3.50284D-01	1.71672D 01
2.0000 02	-4.09569D 00	9.95814D 01
2.5000 02	-8.06288D 00	1.80944D 02
3.0000 02	-1.05585D 01	2.23803D 02
3.5000 02	-1.04348D 01	2.03955D 02
4.0000 02	-7.21906D 00	1.12886D 02
4.5000 02	-1.05539D 00	-4.38753D 01
5.0000 02	7.42675D 00	-2.49914D 02
6.0000 02	2.72489D 01	-7.09492D 02
7.0000 02	4.25141D 01	-1.03292D 03
8.0000 02	4.27915D 01	-9.75391D 02
9.0000 02	1.84834D 01	-3.14189D 02
1.0000 03	-3.85583D 01	1.13816D 03

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	4.194230-09	3.749000-06	-5.626820-04
2.0000 00	1.032900-08	1.966360-06	-2.510490-04
5.0000 00	5.867940-08	-8.760350-06	1.830300-03
1.0000 01	2.789020-07	-2.485080-05	3.575140-03
2.5000 01	1.896540-06	-1.029190-05	-1.838230-03
5.0000 01	1.049580-05	1.691710-04	-3.596180-02
7.5000 01	3.081770-05	3.855240-04	-6.962020-02
1.0000 02	6.137070-05	5.138340-04	-7.953210-02
1.2500 02	1.025050-04	4.964950-04	-5.665240-02
1.5000 02	1.632540-04	3.252800-04	-1.952880-03
2.0000 02	3.974490-04	-3.673120-04	1.712410-01
2.5000 02	8.117980-04	-1.224770-03	3.575820-01
3.0000 02	1.338690-03	-1.889060-03	4.781400-01
3.5000 02	1.930850-03	-2.109970-03	4.821860-01
4.0000 02	2.708360-03	-1.775660-03	3.515990-01
4.5000 02	3.954220-03	-8.975840-04	9.602330-02
5.0000 02	5.953460-03	4.207160-04	-2.548660-01
6.0000 02	1.240130-02	3.690530-03	-1.067410 00
7.0000 02	1.993450-02	6.442130-03	-1.696910 00
8.0000 02	2.570880-02	7.058820-03	-1.762100 00
9.0000 02	3.489410-02	4.143690-03	-9.406310-01
1.0000 03	7.135720-02	-3.412980-03	1.019240 00

PRESSURE, ATM	S2DP	S2EP
1.0000 00	3.708590-02	-7.467490-01
2.0000 00	1.571180-02	-2.972380-01
5.0000 00	-9.561360-02	1.966240 00
1.0000 01	-2.281790-01	4.483490 00
2.5000 01	2.026950-01	-5.641410 00
5.0000 01	2.538840 00	-5.476150 01
7.5000 01	4.578560 00	-9.345820 01
1.0000 02	4.686840 00	-8.661320 01
1.2500 02	2.331460 00	-2.504260 01
1.5000 02	-2.301980 00	8.533400 01
2.0000 02	-1.566890 01	3.853920 02
2.5000 02	-2.875950 01	6.571440 02
3.0000 02	-3.555420 01	7.649280 02
3.5000 02	-3.243310 01	6.348400 02
4.0000 02	-1.840490 01	2.430510 02
4.5000 02	5.343590 00	-3.658690 02
5.0000 02	3.609220 01	-1.124560 03
6.0000 02	1.035590 02	-2.718900 03
7.0000 02	1.514650 02	-3.748770 03
8.0000 02	1.486940 02	-3.470710 03
9.0000 02	6.933480 01	-1.272870 03
1.0000 03	-1.065920 02	3.311830 03

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	2.39459D-09	2.37471D-06	-3.69793D-04
2.0000 00	5.58227D-09	1.19005D-06	-1.54838D-04
5.0000 00	3.21831D-08	-5.76111D-06	9.74227D-04
1.0000 01	1.53646D-07	-1.59212D-05	2.36398D-03
2.5000 01	1.05523D-06	-4.52433D-06	-1.63042D-03
5.0000 01	6.13275D-06	1.14300D-04	-2.48409D-02
7.5000 01	1.82271D-05	2.50554D-04	-4.62275D-02
1.0000 02	3.62380D-05	3.21248D-04	-4.98691D-02
1.2500 02	6.10929D-05	2.91033D-04	-3.02980D-02
1.5000 02	9.95397D-05	1.59021D-04	1.07163D-02
2.0000 02	2.50193D-04	-3.17267D-04	1.30940D-01
2.5000 02	5.05620D-04	-8.54519D-04	2.48134D-01
3.0000 02	8.17991D-04	-1.21090D-03	3.07915D-01
3.5000 02	1.18511D-03	-1.23831D-03	2.80446D-01
4.0000 02	1.72382D-03	-8.92964D-04	1.61014D-01
4.5000 02	2.61810D-03	-2.15268D-04	-3.57236D-02
5.0000 02	3.99656D-03	6.98172D-04	-2.82728D-01
6.0000 02	7.93221D-03	2.70919D-03	-7.91902D-01
7.0000 02	1.18123D-02	4.04367D-03	-1.09143D 00
8.0000 02	1.51621D-02	3.70958D-03	-9.40562D-01
9.0000 02	2.46480D-02	9.30252D-04	-1.55147D-01
1.0000 03	5.96125D-02	-4.85384D-03	1.39466D 00

PRESSURE, ATM	S2DP	S2EP
1.0000 00	2.52634D-02	-5.22933D-01
2.0000 00	9.95198D-03	-1.89720D-01
5.0000 00	-6.75910D-02	1.43509D 00
1.0000 01	-1.56102D-01	3.14382D 00
2.5000 01	1.70496D-01	-4.80593D 00
5.0000 01	1.81259D 00	-4.04508D 01
7.5000 01	3.12183D 00	-6.52907D 01
1.0000 02	2.95482D 00	-5.44581D 01
1.2500 02	9.87170D-01	-2.21976D 00
1.5000 02	-2.55280D 00	8.45090D 01
2.0000 02	-1.20460D 01	3.03224D 02
2.5000 02	-2.03180D 01	4.75303D 02
3.0000 02	-2.31143D 01	5.02285D 02
3.5000 02	-1.83150D 01	3.39507D 02
4.0000 02	-5.88697D 00	-6.80972D 00
4.5000 02	1.26408D 01	-4.93238D 02
5.0000 02	3.47745D 01	-1.05402D 03
6.0000 02	7.79081D 01	-2.09331D 03
7.0000 02	9.97902D 01	-2.52814D 03
8.0000 02	8.01293D 01	-1.85717D 03
9.0000 02	3.66642D 00	2.91404D 02
1.0000 03	-1.40176D 02	4.17167D 03

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.85130D-09	1.85867D-06	-3.00191D-04
2.0000 00	4.34349D-09	8.74765D-07	-1.15660D-04
5.0000 00	2.54156D-08	-4.72877D-06	8.27409D-04
1.0000 01	1.21084D-07	-1.27040D-05	1.94849D-03
2.5000 01	8.32070D-07	-1.94035D-06	-1.67112D-03
5.0000 01	4.91416D-06	9.60302D-05	-2.13126D-02
7.5000 01	1.44997D-05	2.02790D-04	-3.81889D-02
1.0000 02	2.86453D-05	2.49350D-04	-3.86797D-02
1.2500 02	4.87760D-05	2.08735D-04	-1.87152D-02
1.5000 02	8.11711D-05	8.42009D-05	1.92115D-02
2.0000 02	2.07612D-04	-3.22221D-04	1.22584D-01
2.5000 02	4.10648D-04	-7.35769D-04	2.12543D-01
3.0000 02	6.51643D-04	-9.55267D-04	2.43199D-01
3.5000 02	9.56108D-04	-8.77723D-04	1.94453D-01
4.0000 02	1.44645D-03	-4.95398D-04	6.94964D-02
4.5000 02	2.26391D-03	1.31894D-04	-1.12765D-01
5.0000 02	3.46301D-03	9.06361D-04	-3.25166D-01
6.0000 02	6.55236D-03	2.44517D-03	-7.21618D-01
7.0000 02	9.25553D-03	3.26297D-03	-9.00340D-01
8.0000 02	1.18343D-02	2.67748D-03	-6.92363D-01
9.0000 02	2.00788D-02	2.13516D-04	1.68735D-02
1.0000 03	4.79926D-02	-4.43183D-03	1.29817D 00

PRESSURE, ATM	S2DP	S2EP
1.0000 00	2.11806D-02	-4.45644D-01
2.0000 00	7.60156D-03	-1.43163D-01
5.0000 00	-5.93041D-02	1.28579D 00
1.0000 01	-1.32687D-01	2.70695D 00
2.5000 01	1.69884D-01	-4.86158D 00
5.0000 01	1.59966D 00	-3.66168D 01
7.5000 01	2.64064D 00	-5.62109D 01
1.0000 02	2.28754D 00	-4.13402D 01
1.2500 02	-3.08324D-01	1.17325D 01
1.5000 02	-3.01213D 00	9.46189D 01
2.0000 02	-1.13154D 01	2.89041D 02
2.5000 02	-1.76201D 01	4.17980D 02
3.0000 02	-1.82745D 01	3.95767D 02
3.5000 02	-1.19051D 01	1.95105D 02
4.0000 02	8.89816D-01	-1.62387D 02
4.5000 02	1.82276D 01	-6.24149D 02
5.0000 02	3.75874D 01	-1.12302D 03
6.0000 02	7.17220D 01	-1.95537D 03
7.0000 02	8.39687D 01	-2.16437D 03
8.0000 02	5.97926D 01	-1.38455D 03
9.0000 02	-1.04569D 01	6.22470D 02
1.0000 03	-1.32592D 02	3.99689D 03

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.57111D-09	2.63516D-06	-6.73454D-04
2.0000 00	3.22622D-09	1.18885D-06	-2.59769D-04
5.0000 00	1.88582D-08	-6.09668D-06	1.62544D-03
1.0000 01	8.80020D-08	-1.37096D-05	3.11449D-03
2.5000 01	6.31410D-07	1.80886D-05	-8.39156D-03
5.0000 01	3.97472D-06	1.36550D-04	-4.02682D-02
7.5000 01	1.02742D-05	1.71758D-04	-3.74339D-02
1.0000 02	2.13178D-05	6.70298D-05	1.22518D-02
1.2500 02	4.27546D-05	-1.37684D-04	8.98731D-02
1.5000 02	7.61935D-05	-3.64826D-04	1.66217D-01
2.0000 02	1.63999D-04	-6.09307D-04	2.20763D-01
2.5000 02	2.96454D-04	-3.75051D-04	9.10479D-02
3.0000 02	5.47869D-04	2.32939D-04	-1.63447D-01
3.5000 02	9.22289D-04	9.15877D-04	-4.21521D-01
4.0000 02	1.35614D-03	1.38207D-03	-5.73960D-01
4.5000 02	1.86825D-03	1.44859D-03	-5.57891D-01
5.0000 02	2.62480D-03	1.06186D-03	-3.61314D-01
6.0000 02	5.56478D-03	-7.72805D-04	4.28628D-01
7.0000 02	9.62528D-03	-2.93725D-03	1.29595D 00
8.0000 02	1.18675D-02	-3.84093D-03	1.60758D 00
9.0000 02	1.45826D-02	-1.94842D-03	7.67394D-01
1.0000 03	3.82831D-02	4.04559D-03	-1.72332D 00

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	8.10194D-02	-4.13172D 00	7.71612D 01
2.0000 00	2.94923D-02	-1.44318D 00	2.66568D 01
5.0000 00	-1.95735D-01	9.96536D 00	-1.84656D 02
1.0000 01	-3.46376D-01	1.65775D 01	-2.97348D 02
2.5000 01	1.18701D 00	-6.67030D 01	1.29041D 03
5.0000 01	4.82234D 00	-2.42189D 02	4.38587D 03
7.5000 01	3.37647D 00	-1.25728D 02	1.70832D 03
1.0000 02	-4.18254D 00	3.14512D 02	-7.02796D 03
1.2500 02	-1.48009D 01	8.90285D 02	-1.79129D 04
1.5000 02	-2.42643D 01	1.35988D 03	-2.61511D 04
2.0000 02	-2.71232D 01	1.30228D 03	-2.18833D 04
2.5000 02	-3.23326D 00	-2.79271D 02	1.22479D 04
3.0000 02	3.63324D 01	-2.62974D 03	5.94210D 04
3.5000 02	7.27594D 01	-4.60463D 03	9.59263D 04
4.0000 02	9.01571D 01	-5.28764D 03	1.03557D 05
4.5000 02	8.01768D 01	-4.24083D 03	7.43566D 04
5.0000 02	4.22829D 01	-1.50125D 03	1.02473D 04
6.0000 02	-9.08598D 01	7.22571D 03	-1.80813D 05
7.0000 02	-2.26752D 02	1.55505D 04	-3.52856D 05
8.0000 02	-2.65846D 02	1.72673D 04	-3.73911D 05
9.0000 02	-1.16400D 02	6.75728D 03	-1.26060D 05
1.0000 03	2.97246D 02	-2.05585D 04	4.85903D 05

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	2.505120-09	4.495000-06	-1.232810-03
2.0000 00	5.046550-09	1.979700-06	-4.635210-04
5.0000 00	2.960730-08	-1.036790-05	2.956680-03
1.0000 01	1.373360-07	-2.238090-05	5.400770-03
2.5000 01	1.000700-06	3.671750-05	-1.676270-02
5.0000 01	6.266220-06	2.293680-04	-7.045950-02
7.5000 01	1.600750-05	2.461300-04	-5.030930-02
1.0000 02	3.485980-05	1.359940-05	5.605690-02
1.2500 02	7.154390-05	-3.601270-04	1.995700-01
1.5000 02	1.243680-04	-7.111620-04	3.166600-01
2.0000 02	2.577550-04	-8.610560-04	3.037970-01
2.5000 02	5.061460-04	-1.153100-04	-5.701360-02
3.0000 02	9.626310-04	1.055380-03	-5.442870-01
3.5000 02	1.536000-03	1.975590-03	-8.818620-01
4.0000 02	2.193070-03	2.174870-03	-8.929910-01
4.5000 02	3.191380-03	1.505170-03	-5.368230-01
5.0000 02	4.894700-03	9.330160-05	1.172280-01
6.0000 02	1.023060-02	-3.640440-03	1.732000 00
7.0000 02	1.417230-02	-5.820660-03	2.582810 00
8.0000 02	1.764480-02	-3.241910-03	1.346740 00
9.0000 02	5.088770-02	6.718030-03	-3.037480 00
1.0000 03	1.990640-01	2.602440-02	-1.135300 01

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	1.580230-01	-8.608000 00	1.723140 02
2.0000 00	5.573740-02	-2.894090 00	5.703980 01
5.0000 00	-3.797570-01	2.068670 01	-4.116540 02
1.0000 01	-6.359260-01	3.234560 01	-6.210720 02
2.5000 01	2.490430 00	-1.484340 02	3.065940 03
5.0000 01	8.864610 00	-4.703590 02	9.058070 03
7.5000 01	3.963370 00	-1.084970 02	6.693000 02
1.0000 02	-1.266400 01	9.051310 02	-2.060980 04
1.2500 02	-3.293970 01	2.051720 03	-4.340840 04
1.5000 02	-4.729360 01	2.753490 03	-5.557690 04
2.0000 02	-3.530580 01	1.554110 03	-2.321170 04
2.5000 02	2.821520 01	-2.667650 03	7.067990 04
3.0000 02	1.044800 02	-7.285580 03	1.661790 05
3.5000 02	1.496550 02	-9.539840 03	2.034820 05
4.0000 02	1.378880 02	-7.924280 03	1.520940 05
4.5000 02	6.568460 01	-2.392060 03	1.414370 04
5.0000 02	-5.301160 01	6.001680 03	-1.841880 05
6.0000 02	-3.273590 02	2.431720 04	-5.974300 05
7.0000 02	-4.544690 02	3.157540 04	-7.344410 05
8.0000 02	-2.177250 02	1.361110 04	-2.769990 05
9.0000 02	5.536590 02	-4.058200 04	1.019390 06
1.0000 03	1.983950 03	-1.389140 05	3.328710 06

TABLE 12. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	3.45353D-09	6.00787D-06	-1.65551D-03
2.0000 00	7.07597D-09	2.54468D-06	-5.96265D-04
5.0000 00	4.20210D-08	-1.43553D-05	4.10105D-03
1.0000 01	1.94831D-07	-3.08827D-05	7.50521D-03
2.5000 01	1.41589D-06	5.02346D-05	-2.29142D-02
5.0000 01	8.90140D-06	3.18227D-04	-9.78400D-02
7.5000 01	2.28146D-05	3.41082D-04	-6.96846D-02
1.0000 02	4.99849D-05	1.16915D-05	8.02924D-02
1.2500 02	1.03029D-04	-5.13227D-04	2.80957D-01
1.5000 02	1.78804D-04	-9.94065D-04	4.39494D-01
2.0000 02	3.72707D-04	-1.13921D-03	3.94875D-01
2.5000 02	7.49302D-04	-4.07140D-05	-1.29447D-01
3.0000 02	1.42069D-03	1.57027D-03	-7.97681D-01
3.5000 02	2.22936D-03	2.77915D-03	-1.23976D 00
4.0000 02	3.13013D-03	3.02006D-03	-1.24655D 00
4.5000 02	4.46991D-03	2.15243D-03	-7.85208D-01
5.0000 02	6.75025D-03	3.45198D-04	5.50362D-02
6.0000 02	1.45596D-02	-4.65961D-03	2.23677D 00
7.0000 02	2.31007D-02	-8.80484D-03	3.93753D 00
8.0000 02	2.84386D-02	-9.20382D-03	3.96781D 00
9.0000 02	4.00323D-02	-3.68345D-03	1.45121D 00
1.0000 03	9.36621D-02	9.26287D-03	-4.20864D 00

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	2.11179D-01	-1.13885D 01	2.27773D 02
2.0000 00	7.13723D-02	-3.66588D 00	7.28224D 01
5.0000 00	-5.23371D-01	2.81989D 01	-5.59321D 02
1.0000 01	-8.81109D-01	4.43970D 01	-8.56610D 02
2.5000 01	3.37921D 00	-1.99560D 02	4.07360D 03
5.0000 01	1.22316D 01	-6.42853D 02	1.23180D 04
7.5000 01	5.44830D 00	-1.46988D 02	9.88933D 02
1.0000 02	-1.77794D 01	1.25343D 03	-2.81149D 04
1.2500 02	-4.58283D 01	2.81962D 03	-5.89713D 04
1.5000 02	-6.48455D 01	3.72478D 03	-7.43581D 04
2.0000 02	-4.41143D 01	1.83109D 03	-2.54782D 04
2.5000 02	4.66770D 01	-4.10630D 03	1.04690D 05
3.0000 02	1.50155D 02	-1.02918D 04	2.31240D 05
3.5000 02	2.08612D 02	-1.31621D 04	2.78239D 05
4.0000 02	1.92231D 02	-1.10300D 04	2.12367D 05
4.5000 02	9.95278D 01	-4.01192D 03	3.97703D 04
5.0000 02	-5.21686D 01	6.61946D 03	-2.08765D 05
6.0000 02	-4.22958D 02	3.13037D 04	-7.63436D 05
7.0000 02	-6.93175D 02	4.80528D 04	-1.11439D 06
8.0000 02	-6.70328D 02	4.44770D 04	-9.87467D 05
9.0000 02	-2.15298D 02	1.17686D 04	-1.90235D 05
1.0000 03	7.64936D 02	-5.58697D 04	1.40239D 06

TABLE 13. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 25 DEGREE C (298.142 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.0004840488D 00	5.90963D-07
2.0000 00	1.0009679827D 00	1.17235D-06
5.0000 00	1.0024190962D 00	2.88048D-06
1.0000 01	1.0048353341D 00	5.62506D-06
2.5000 01	1.0120670875D 00	1.31809D-05
5.0000 01	1.0240645495D 00	2.37784D-05
7.5000 01	1.0359944811D 00	3.22295D-05
1.0000 02	1.0478587651D 00	3.88733D-05
1.2500 02	1.0596591059D 00	4.40071D-05
1.5000 02	1.0713970567D 00	4.78943D-05
2.0000 02	1.0946913800D 00	5.28392D-05
2.5000 02	1.1177519203D 00	5.52681D-05
3.0000 02	1.1405875679D 00	5.63507D-05
3.5000 02	1.1632062481D 00	5.68892D-05
4.0000 02	1.1856151541D 00	5.73473D-05
4.5000 02	1.2078209099D 00	5.79121D-05
5.0000 02	1.2298296870D 00	5.85945D-05
6.0000 02	1.2732791998D 00	6.01807D-05
7.0000 02	1.3160066285D 00	6.29124D-05
8.0000 02	1.3580510850D 00	7.04697D-05
9.0000 02	1.3994485670D 00	8.82269D-05
1.0000 03	1.4402323875D 00	1.19334D-04

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.0005492504D 00	1.41675D-06
2.0000 00	1.0010984470D 00	2.80894D-06
5.0000 00	1.0027457152D 00	6.89350D-06
1.0000 01	1.0054900958D 00	1.34404D-05
2.5000 01	1.0137153316D 00	3.13615D-05
5.0000 01	1.0273981628D 00	5.62082D-05
7.5000 01	1.0410491290D 00	7.57192D-05
1.0000 02	1.0546684208D 00	9.08063D-05
1.2500 02	1.0682558958D 00	1.02260D-04
1.5000 02	1.0818111686D 00	1.10771D-04
2.0000 02	1.1088227671D 00	1.21308D-04
2.5000 02	1.1356976511D 00	1.26344D-04
3.0000 02	1.1624296403D 00	1.28680D-04
3.5000 02	1.1890127236D 00	1.30103D-04
4.0000 02	1.2154415002D 00	1.31535D-04
4.5000 02	1.2417113989D 00	1.33263D-04
5.0000 02	1.2678187583D 00	1.35239D-04
6.0000 02	1.3195356938D 00	1.39815D-04
7.0000 02	1.3705800385D 00	1.47943D-04
8.0000 02	1.4209505170D 00	1.68214D-04
9.0000 02	1.4706540922D 00	2.10943D-04
1.0000 03	1.5197035463D 00	2.80939D-04

TABLE 13. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.000D 00	1.00059118290 00	2.84262D-06
2.000D 00	1.00118241070 00	5.63428D-06
5.000D 00	1.00295636660 00	1.38168D-05
1.000D 01	1.00591388120 00	2.69071D-05
2.500D 01	1.01479355440 00	6.25707D-05
5.000D 01	1.02961771810 00	1.13526D-04
7.500D 01	1.04447335850 00	1.49443D-04
1.000D 02	1.05935980860 00	1.78322D-04
1.250D 02	1.07427524320 00	1.99888D-04
1.500D 02	1.08921698690 00	2.15634D-04
2.000D 02	1.11916588920 00	2.34657D-04
2.500D 02	1.14917639740 00	2.43587D-04
3.000D 02	1.17921630270 00	2.48016D-04
3.500D 02	1.20925413530 00	2.51262D-04
4.000D 02	1.23926076000 00	2.54831D-04
4.500D 02	1.26921016230 00	2.59051D-04
5.000D 02	1.29907972260 00	2.63767D-04
6.000D 02	1.35850544100 00	2.75018D-04
7.000D 02	1.41741991300 00	2.95384D-04
8.000D 02	1.47574568470 00	3.41151D-04
9.000D 02	1.53343594380 00	4.28317D-04
1.000D 03	1.59046608130 00	5.62355D-04

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.000D 00	1.00058881080 00	2.30398D-06
2.000D 00	1.00117801430 00	4.55751D-06
5.000D 00	1.00294796530 00	1.10844D-05
1.000D 01	1.00590558540 00	2.12574D-05
2.500D 01	1.01483435240 00	4.71119D-05
5.000D 01	1.02989037000 00	7.75091D-05
7.500D 01	1.04514507900 00	9.61903D-05
1.000D 02	1.06057742820 00	1.06937D-04
1.250D 02	1.07616812360 00	1.12602D-04
1.500D 02	1.09189948020 00	1.15254D-04
2.000D 02	1.12372069720 00	1.16643D-04
2.500D 02	1.15592703660 00	1.17081D-04
3.000D 02	1.18842289340 00	1.18815D-04
3.500D 02	1.22112829810 00	1.23442D-04
4.000D 02	1.25397653850 00	1.32569D-04
4.500D 02	1.28691212410 00	1.46899D-04
5.000D 02	1.31988904050 00	1.65558D-04
6.000D 02	1.38582144200 00	2.07187D-04
7.000D 02	1.45154362980 00	2.39776D-04
8.000D 02	1.51690195340 00	2.54137D-04
9.000D 02	1.58179615790 00	2.60293D-04
1.000D 03	1.64616313750 00	2.99801D-04

TABLE 13. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 25 DEGREE C (298.142 K ITS) ISOTHERM -- CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.000D 00	1.00056595960 00	2.68736D-06
2.000D 00	1.00113267810 00	5.31581D-06
5.000D 00	1.00283736020 00	1.29241D-05
1.000D 01	1.00569343140 00	2.47651D-05
2.500D 01	1.01437071350 00	5.47255D-05
5.000D 01	1.02917774480 00	8.95512D-05
7.500D 01	1.04438348190 00	1.10529D-04
1.000D 02	1.05995243770 00	1.22260D-04
1.250D 02	1.07585123260 00	1.28206D-04
1.500D 02	1.09204856620 00	1.30845D-04
2.000D 02	1.12522380600 00	1.32200D-04
2.500D 02	1.15926763240 00	1.33100D-04
3.000D 02	1.19399929660 00	1.35994D-04
3.500D 02	1.22926527530 00	1.42706D-04
4.000D 02	1.26493638960 00	1.54932D-04
4.500D 02	1.30090480610 00	1.73083D-04
5.000D 02	1.33708110520 00	1.95781D-04
6.000D 02	1.40977560210 00	2.44600D-04
7.000D 02	1.48257585520 00	2.82308D-04
8.000D 02	1.55518715060 00	2.99934D-04
9.000D 02	1.62741714780 00	3.06661D-04
1.000D 03	1.69914308270 00	3.38970D-04

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.000D 00	1.00050682390 00	4.92294D-06
2.000D 00	1.00101498370 00	9.73957D-06
5.000D 00	1.00254743720 00	2.36776D-05
1.000D 01	1.00512785900 00	4.53446D-05
2.500D 01	1.01306189870 00	9.99478D-05
5.000D 01	1.02689760750 00	1.62709D-04
7.500D 01	1.04144549520 00	1.99726D-04
1.000D 02	1.05664649060 00	2.19788D-04
1.250D 02	1.07244427980 00	2.29494D-04
1.500D 02	1.08878544520 00	2.33505D-04
2.000D 02	1.12289925160 00	2.35388D-04
2.500D 02	1.15862118930 00	2.37499D-04
3.000D 02	1.19563318380 00	2.44348D-04
3.500D 02	1.23366388740 00	2.59567D-04
4.000D 02	1.27248512670 00	2.85847D-04
4.500D 02	1.31190731340 00	3.22763D-04
5.000D 02	1.35177441850 00	3.66729D-04
6.000D 02	1.43235750350 00	4.56292D-04
7.000D 02	1.51347787840 00	5.22327D-04
8.000D 02	1.59464385100 00	5.52671D-04
9.000D 02	1.67554015340 00	5.63111D-04
1.000D 03	1.75596775830 00	6.06523D-04

TABLE 13. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00042894370 00	4.00127D-06
2.0000 00	1.00085990840 00	7.91825D-06
5.0000 00	1.00216485960 00	1.92493D-05
1.0000 01	1.00437956290 00	3.68392D-05
2.5000 01	1.01131431010 00	8.09484D-05
5.0000 01	1.02379136850 00	1.30942D-04
7.5000 01	1.03733051640 00	1.59653D-04
1.0000 02	1.05183635170 00	1.74603D-04
1.2500 02	1.06721929410 00	1.81402D-04
1.5000 02	1.08339576530 00	1.83939D-04
2.0000 02	1.11782459410 00	1.85006D-04
2.5000 02	1.15456991530 00	1.87254D-04
3.0000 02	1.19316354800 00	1.94540D-04
3.5000 02	1.23321345540 00	2.10037D-04
4.0000 02	1.27439484680 00	2.35148D-04
4.5000 02	1.31644124920 00	2.68049D-04
5.0000 02	1.35913584210 00	3.04725D-04
6.0000 02	1.44580294260 00	3.72872D-04
7.0000 02	1.53336940890 00	4.16800D-04
8.0000 02	1.62117950440 00	4.34772D-04
9.0000 02	1.70881876120 00	4.51362D-04
1.0000 03	1.79602817580 00	5.17589D-04

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00031486550 00	3.61713D-06
2.0000 00	1.00063251620 00	7.16145D-06
5.0000 00	1.00160210520 00	1.74148D-05
1.0000 01	1.00327309280 00	3.33171D-05
2.5000 01	1.00868988270 00	7.30245D-05
5.0000 01	1.01900639460 00	1.17407D-04
7.5000 01	1.03082901850 00	1.42150D-04
1.0000 02	1.04403808170 00	1.54404D-04
1.2500 02	1.05851678330 00	1.59506D-04
1.5000 02	1.07415249120 00	1.61097D-04
2.0000 02	1.10846999770 00	1.61621D-04
2.5000 02	1.14619874470 00	1.64271D-04
3.0000 02	1.18664589000 00	1.72764D-04
3.5000 02	1.22922106770 00	1.89976D-04
4.0000 02	1.27343315440 00	2.16154D-04
4.5000 02	1.31888171010 00	2.48337D-04
5.0000 02	1.36524528690 00	2.82229D-04
6.0000 02	1.45975125060 00	3.40802D-04
7.0000 02	1.55549833720 00	3.75174D-04
8.0000 02	1.65159937650 00	3.88640D-04
9.0000 02	1.74751815990 00	4.05965D-04
1.0000 03	1.84293396860 00	4.68910D-04

TABLE 13. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00017391200 00	4.90494D-06
2.0000 00	1.00035127520 00	9.68024D-06
5.0000 00	1.00090403720 00	2.32799D-05
1.0000 01	1.00189399770 00	4.36733D-05
2.5000 01	1.00537439370 00	9.01694D-05
5.0000 01	1.01284045360 00	1.31838D-04
7.5000 01	1.02230878560 00	1.47293D-04
1.0000 02	1.03367033990 00	1.50975D-04
1.2500 02	1.04680129860 00	1.51017D-04
1.5000 02	1.06156790020 00	1.51480D-04
2.0000 02	1.09545027540 00	1.60975D-04
2.5000 02	1.13421045670 00	1.85061D-04
3.0000 02	1.17681949640 00	2.16974D-04
3.5000 02	1.22238515060 00	2.46685D-04
4.0000 02	1.27017148170 00	2.69010D-04
4.5000 02	1.31959213290 00	2.84077D-04
5.0000 02	1.37019043330 00	2.94717D-04
6.0000 02	1.47360073230 00	3.12938D-04
7.0000 02	1.57848878850 00	3.29287D-04
8.0000 02	1.68375548770 00	3.42927D-04
9.0000 02	1.78877239210 00	3.89516D-04
1.0000 03	1.89318269840 00	5.44629D-04

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	9.99999872290-01	6.54207D-06
2.0000 00	1.00000401370 00	1.29123D-05
5.0000 00	1.00004205790 00	3.10202D-05
1.0000 01	1.00019087890 00	5.80350D-05
2.5000 01	1.00127738940 00	1.18609D-04
5.0000 01	1.00520748070 00	1.70194D-04
7.5000 01	1.01173416270 00	1.86951D-04
1.0000 02	1.02076049410 00	1.89471D-04
1.2500 02	1.03215470590 00	1.88852D-04
1.5000 02	1.04575755950 00	1.90449D-04
2.0000 02	1.07886406670 00	2.09476D-04
2.5000 02	1.11856591720 00	2.48410D-04
3.0000 02	1.16339463040 00	2.90946D-04
3.5000 02	1.21206950700 00	3.23839D-04
4.0000 02	1.26355108190 00	3.44865D-04
4.5000 02	1.31703388610 00	3.58440D-04
5.0000 02	1.37191096530 00	3.69706D-04
6.0000 02	1.48416514140 00	3.91862D-04
7.0000 02	1.59795819970 00	4.10931D-04
8.0000 02	1.71201842750 00	4.68467D-04
9.0000 02	1.82565914550 00	6.75621D-04
1.0000 03	1.93851230060 00	1.09145D-03

TABLE 13. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 25 DEGREE C (298.142 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	9.99820701350-01	7.57351D-06
2.0000 00	9.99645611440-01	1.49617D-05
5.0000 00	9.99145787930-01	3.59964D-05
1.0000 01	9.98398706940-01	6.74429D-05
2.5000 01	9.96822689170-01	1.38158D-04
5.0000 01	9.96528503150-01	1.98260D-04
7.5000 01	9.99300244540-01	2.17113D-04
1.0000 02	1.00521616430 00	2.19126D-04
1.2500 02	1.01424599740 00	2.17696D-04
1.5000 02	1.02626111360 00	2.19307D-04
2.0000 02	1.05837229730 00	2.42601D-04
2.5000 02	1.09944099130 00	2.89679D-04
3.0000 02	1.14725742740 00	3.39689D-04
3.5000 02	1.19992389670 00	3.77809D-04
4.0000 02	1.25597276320 00	4.02578D-04
4.5000 02	1.31432918140 00	4.19441D-04
5.0000 02	1.37422612690 00	4.34254D-04
6.0000 02	1.49663338200 00	4.66586D-04
7.0000 02	1.62050171110 00	4.97789D-04
8.0000 02	1.74447506180 00	5.36713D-04
9.0000 02	1.86786278340 00	6.38883D-04
1.0000 03	1.99031536670 00	8.73495D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM -- 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.:	REL. ERROR IN P
		RUN NO. HE-50-3		
0	1.0387652D 03	1.0387536D 03	1.15297D-02	1.10994D-05
1	5.9862490D 02	5.9865134D 02	-2.64413D-02	-4.41701D-05
2	3.6136629D 02	3.6137139D 02	-5.10220D-03	-1.41192D-05
3	2.2452026D 02	2.2452639D 02	-6.13409D-03	-2.73209D-05
4	1.4205181D 02	1.4205321D 02	-1.40434D-03	-9.88614D-06
5	9.0911665D 01	9.0913482D 01	-1.81636D-03	-1.99794D-05
6	5.8612354D 01	5.8614151D 01	-1.79733D-03	-3.06647D-05
7	3.7968526D 01	3.7969689D 01	-1.16266D-03	-3.06217D-05
8	2.4672296D 01	2.4672074D 01	2.22023D-04	8.99887D-06
9	1.6063178D 01	1.6063522D 01	-3.43896D-04	-2.14090D-05
10	1.0471594D 01	1.0472247D 01	-6.52943D-04	-6.23537D-05
11	6.8327166D 00	6.8329236D 00	-2.07056D-04	-3.03037D-05
12	4.4606691D 00	4.4608034D 00	-1.34288D-04	-3.01048D-05
13	2.9133270D 00	2.9132392D 00	8.77535D-05	3.01214D-05
14	1.9031551D 00	1.9030116D 00	1.43432D-04	7.53655D-05
		RUN NO. HE-50-4		
0	8.8723839D 02	8.8730824D 02	-6.98542D-02	-7.87322D-05
1	5.1906338D 02	5.1910043D 02	-3.70474D-02	-7.13735D-05
2	3.1627170D 02	3.1629047D 02	-1.87691D-02	-5.93450D-05
3	1.9765894D 02	1.9766841D 02	-9.46211D-03	-4.78709D-05
4	1.2551865D 02	1.2552368D 02	-5.02772D-03	-4.00556D-05
5	8.0520887D 01	8.0524423D 01	-3.53582D-03	-4.39119D-05
6	5.1993539D 01	5.1994929D 01	-1.39066D-03	-2.67468D-05
7	3.3714467D 01	3.3714896D 01	-4.28746D-04	-1.27170D-05
8	2.1923040D 01	2.1921339D 01	1.70128D-03	7.76023D-05
9	1.4278675D 01	1.4278485D 01	1.89432D-04	1.32668D-05
10	9.3108940D 00	9.3110462D 00	-1.52251D-04	-1.63519D-05
11	6.0763182D 00	6.0763342D 00	-1.59887D-05	-2.63131D-06
12	3.9672181D 00	3.9673278D 00	-1.09670D-04	-2.76441D-05
13	2.5911706D 00	2.5911570D 00	1.35479D-05	5.22850D-06
14	1.6927729D 00	1.6927013D 00	7.16049D-05	4.23004D-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.|	REL. ERROR IN P
		RUN NO. HE-50-5		
0	7.6462663D 02	7.6453813D 02	8.8496 6D-02	1.1573 8D-04
1	4.5310921D 02	4.5306458D 02	4.4629 9D-02	9.8497 1D-05
2	2.7829663D 02	2.7827317D 02	2.3468 1D-02	8.4327 6D-05
3	1.7479241D 02	1.7478493D 02	7.4821 3D-03	4.2805 8D-05
4	1.1135219D 02	1.1134632D 02	5.8613 6D-03	5.2638 0D-05
5	7.1577602D 01	7.1575314D 01	2.2883 8D-03	3.1970 6D-05
6	4.6278219D 01	4.6277206D 01	1.0124 5D-03	2.1877 4D-05
7	3.0033326D 01	3.0032901D 01	4.2487 8D-04	1.4146 9D-05
8	1.9540695D 01	1.9538103D 01	2.5918 2D-03	1.3263 7D-04
9	1.2731316D 01	1.2730738D 01	5.7839 1D-04	4.5430 6D-05
10	8.3037388D 00	8.3037002D 00	3.8635 0D-05	4.6527 2D-06
11	5.4195114D 00	5.4197744D 00	-2.6301 2D-04	-4.8530 6D-05
12	3.5389172D 00	3.5390033D 00	-8.6029 4D-05	-2.4309 5D-05
13	2.3114732D 00	2.3115586D 00	-8.5387 6D-05	-3.6940 8D-05
14	1.5100513D 00	1.5101148D 00	-6.3525 0D-05	-4.2068 1D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 2.4701 4D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.5301 7833D 00	S2N	6.6138 6D-11	SN	8.1325 7D-06
B	1.1700 1403D 01	S2B	4.7057 7D-04	SB	2.1692 8D-02
C	1.0505 7609D 02	S2C	4.0950 4D 00	SC	2.0236 2D 00
D	6.9556 2870D 02	S2D	3.0717 1D 03	SD	5.5423 0D 01
P1	1.0387 5362D 03	S2P1	1.1338 7D-02	SP1	1.0648 3D-01
P2	8.8730 8242D 02	S2P2	3.1208 9D-03	SP2	5.5864 9D-02
P3	7.6453 8133D 02	S2P3	1.7355 4D-03	SP3	4.1659 8D-02

COVARIANCES

S2BC	-4.1123 3D-02	S2BD	1.0397 8D 00
S2BP1	7.0935 0D-04	S2BP2	-1.1187 1D-04
S2BP3	-3.7503 3D-04	S2BN	-1.5154 5D-07
S2CD	-1.1001 6D 02	S2CP1	-9.7147 6D-02
S2CP2	5.3220 0D-03	S2CP3	4.1698 1D-02
S2CN	1.1439 6D-05	S2DP1	3.4489 1D 00
S2DP2	2.4119 4D-01	S2DP3	-9.8419 8D-01
S2DN	-2.7667 5D-04	S2P1P2	4.7351 0D-03
S2P1P3	1.6311 9D-03	S2P1N	-1.6199 3D-07
S2P2P3	1.7927 5D-03	S2P2N	3.4465 3D-08
S2P3N	9.4413 6D-08		

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.,	REL. ERROR IN P
		RUN NO. 90HE-10N2-50-1		
0	1.04279000 03	1.04273260 03	5.74291D-02	5.50726D-05
1	5.87095600 02	5.87130960 02	-3.53575D-02	-6.02245D-05
2	3.50245320 02	3.50249930 02	-4.60525D-03	-1.31486D-05
3	2.16302010 02	2.16305990 02	-3.97725D-03	-1.83875D-05
4	1.36427730 02	1.36433520 02	-5.78982D-03	-4.24387D-05
5	8.72029120 01	8.71892030 01	1.37091D-02	1.57209D-04
6	5.61872230 01	5.61818000 01	5.42225D-03	9.65033D-05
7	3.63906440 01	3.63934160 01	-2.77162D-03	-7.61629D-05
8	2.36538720 01	2.36552490 01	-1.37727D-03	-5.82259D-05
9	1.54094490 01	1.54095130 01	-6.40131D-05	-4.15415D-06
10	1.00524920 01	1.00524510 01	4.11939D-05	4.09788D-06
11	6.56383610 00	6.56386860 00	-3.25427D-05	-4.95788D-06
12	4.28853010 00	4.28856370 00	-3.36423D-05	-7.84472D-06
13	2.80316300 00	2.80308500 00	7.80689D-05	2.78503D-05
14	1.83259630 00	1.83262370 00	-2.74071D-05	-1.49553D-05
		RUN NO. 90HE-10N2-50-2		
0	9.33026590 02	9.33100310 02	-7.37249D-02	-7.90170D-05
1	5.32193200 02	5.32228600 02	-3.54018D-02	-6.65206D-05
2	3.19950450 02	3.19962680 02	-1.22347D-02	-3.82395D-05
3	1.98530150 02	1.98527170 02	2.98239D-03	1.50223D-05
4	1.25561890 02	1.25581090 02	-1.92056D-02	-1.52957D-04
5	8.04007620 01	8.03992230 01	1.53820D-03	1.91316D-05
6	5.18668370 01	5.18662680 01	5.68106D-04	1.09532D-05
7	3.36178040 01	3.36227710 01	-4.96675D-03	-1.47742D-04
8	2.18618960 01	2.18648210 01	-2.92513D-03	-1.33801D-04
9	1.42455230 01	1.42476140 01	-2.09086D-03	-1.46773D-04
10	9.29618010 00	9.29636010 00	-1.79946D-04	-1.93570D-05
11	6.07102770 00	6.07096950 00	5.81554D-05	9.57917D-06
12	3.96678470 00	3.96686460 00	-7.99306D-05	-2.01500D-05
13	2.59317790 00	2.59296210 00	2.15849D-04	8.32372D-05
14	1.69551310 00	1.69531010 00	2.03007D-04	1.19732D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.|	REL. ERROR IN P
		RUN NO. 90HE-10N2-50-3		
0	8.23676420 02	8.23660070 02	1.63560D-02	1.98573D-05
1	4.76212130 02	4.76184860 02	2.72675D-02	5.72591D-05
2	2.88606950 02	2.88592090 02	1.48583D-02	5.14828D-05
3	1.79944070 02	1.79942360 02	1.70507D-03	9.47555D-06
4	1.14173960 02	1.14170830 02	3.12289D-03	2.73520D-05
5	7.32391610 01	7.32339530 01	5.20807D-03	7.11104D-05
6	4.73049390 01	4.73014880 01	3.45129D-03	7.29584D-05
7	3.06902830 01	3.06876570 01	2.62550D-03	8.55483D-05
8	1.99679630 01	1.99662460 01	1.71608D-03	8.59414D-05
9	1.30154680 01	1.30147470 01	7.21048D-04	5.53993D-05
10	8.49430830 00	8.49375340 00	5.54912D-04	6.53275D-05
11	5.54788770 00	5.54760470 00	2.83021D-04	5.10143D-05
12	3.62529400 00	3.62522100 00	7.30793D-05	2.01582D-05
13	2.36963260 00	2.36978620 00	-1.53689D-04	-6.48579D-05
14	1.54924190 00	1.54945540 00	-2.13514D-04	-1.37818D-04
		RUN NO. 90HE-10N2-50-4		
0	7.15281680 02	7.15260960 02	2.07196D-02	2.89671D-05
1	4.19366550 02	4.19338180 02	2.83764D-02	6.76650D-05
2	2.56289060 02	2.56280030 02	9.02785D-03	3.52253D-05
3	1.60609850 02	1.60613950 02	-4.10065D-03	-2.55317D-05
4	1.02226620 02	1.02231520 02	-4.90708D-03	-4.80020D-05
5	6.57052580 01	6.57073550 01	-2.09742D-03	-3.19217D-05
6	4.24935180 01	4.24945900 01	-1.07171D-03	-2.52206D-05
7	2.75917160 01	2.75919040 01	-1.87813D-04	-6.80685D-06
8	1.79627310 01	1.79616790 01	1.05161D-03	5.85439D-05
9	1.17119000 01	1.17121700 01	-2.70314D-04	-2.30803D-05
10	7.64534770 00	7.64539230 00	-4.45928D-05	-5.83267D-06
11	4.99408580 00	4.99424510 00	-1.59307D-04	-3.18990D-05
12	3.26391900 00	3.26392950 00	-1.04516D-05	-3.20217D-06
13	2.13390980 00	2.13374670 00	1.63105D-04	7.64346D-05
14	1.39512740 00	1.39518140 00	-5.39209D-05	-3.86494D-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 7.94966D-08

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52879847D 00	S2N	1.14848D-10	SN	1.07167D-05
B	1.34403871D 01	S2B	9.38097D-04	SB	3.06284D-02
C	1.60716591D 02	S2C	9.20354D 00	SC	3.03373D 00
D	1.82991929D 03	S2D	7.95742D 03	SD	8.92044D 01
P1	1.04273259D 03	S2P1	2.19821D-02	SP1	1.48264D-01
P2	9.33100312D 02	S2P2	8.65107D-03	SP2	9.30111D-02
P3	8.23660067D 02	S2P3	4.09190D-03	SP3	6.39680D-02
P4	7.15260959D 02	S2P4	2.67939D-03	SP4	5.17628D-02

COVARIANCES

S2BC	-8.68810D-02	S2BD	2.36144D 00
S2BP1	1.48209D-03	S2BP2	2.65499D-04
S2BP3	-4.34311D-04	S2BP4	-7.04728D-04
S2BN	-2.82337D-07	S2CD	-2.65511D 02
S2CP1	-2.13864D-01	S2CP2	-5.40761D-02
S2CP3	4.24746D-02	S2CP4	8.54105D-02
S2CN	2.25315D-05	S2DP1	8.04950D 00
S2DP2	2.72428D 00	S2DP3	-6.13268D-01
S2DP4	-2.24494D 00	S2DN	-5.88488D-04
S2P1P2	1.23210D-02	S2P1P3	5.97368D-03
S2P1P4	1.88999D-03	S2P1N	-3.18386D-07
S2P2P3	4.79912D-03	S2P2P4	2.49234D-03
S2P2N	-4.46686D-08	S2P3P4	2.62900D-03
S2P3N	1.09135D-07	S2P4N	1.64649D-07

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 80HE-20N2-50-1		
0	1.04095830 03	1.04082790 03	1.304250-01	1.252930-04
1	5.72657100 02	5.72677810 02	-2.071380-02	-3.617130-05
2	3.37996310 02	3.37966730 02	2.958770-02	8.753850-05
3	2.07676240 02	2.07669340 02	6.904580-03	3.324690-05
4	1.30661690 02	1.30663640 02	-1.948650-03	-1.491370-05
5	8.33896460 01	8.33960570 01	-6.410700-03	-7.687650-05
6	5.36951710 01	5.37008130 01	-5.641920-03	-1.050730-04
7	3.47688150 01	3.47729560 01	-4.140750-03	-1.190940-04
8	2.25944250 01	2.25970550 01	-2.630080-03	-1.164040-04
9	1.47163910 01	1.47183870 01	-1.995370-03	-1.355880-04
10	9.60221530 00	9.60096750 00	1.247760-03	1.299450-04
11	6.26908620 00	6.26887910 00	2.070800-04	3.303190-05
12	4.09579230 00	4.09579710 00	-4.882570-06	-1.192090-06
13	2.67705770 00	2.67710550 00	-4.774690-05	-1.783560-05
14	1.75041890 00	1.75028630 00	1.325900-04	7.574760-05
		RUN NO. 80HE-20N2-50-2		
0	9.24743460 02	9.24681530 02	6.192550-02	6.696510-05
1	5.17056220 02	5.17024940 02	3.128090-02	6.049800-05
2	3.08005520 02	3.07965040 02	4.047490-02	1.314100-04
3	1.90259050 02	1.90255960 02	3.086000-03	1.622000-05
4	1.20084680 02	1.20092950 02	-8.275100-03	-6.891050-05
5	7.67992500 01	7.68008760 01	-1.626110-03	-2.117350-05
6	4.95252280 01	4.95153180 01	9.910160-03	2.001030-04
7	3.20895320 01	3.20880060 01	1.526320-03	4.756450-05
8	2.08639020 01	2.08628180 01	1.083960-03	5.195370-05
9	1.35932340 01	1.35932590 01	-2.528180-05	-1.859880-06
10	8.86897240 00	8.86891990 00	5.248720-05	5.918070-06
11	5.79147960 00	5.79169580 00	-2.162190-04	-3.733390-05
12	3.78439130 00	3.78436900 00	2.231280-05	5.896020-06
13	2.47354850 00	2.47369480 00	-1.462210-04	-5.911370-05
14	1.61732190 00	1.61735900 00	-3.711960-05	-2.295130-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 80HE-20N2-50-3		
0	8.0684698D 02	8.0707693D 02	-2.2995OD-01	-2.84998D-04
1	4.5901616D 02	4.5907092D 02	-5.4766 2D-02	-1.19312D-04
2	2.7613273D 02	2.7615460D 02	-2.18726D-02	-7.92106D-05
3	1.7156476D 02	1.7158881D 02	-2.40519D-02	-1.40191D-04
4	1.0867234D 02	1.0868523D 02	-1.28874D-02	-1.18589D-04
5	6.9645829D 01	6.9654031D 01	-8.20151D-03	-1.17760D-04
6	4.4964651D 01	4.4967953D 01	-3.30232D-03	-7.34426D-05
7	2.9164056D 01	2.9166105D 01	-2.04946D-03	-7.02737D-05
8	1.8973574D 01	1.8973531D 01	4.22310D-05	2.22578D-06
9	1.2365075D 01	1.2366699D 01	-1.62383D-03	-1.31324D-04
10	8.0715816D 00	8.0705216D 00	1.05995D-03	1.31318D-04
11	5.2711564D 00	5.2711112D 00	4.52390D-05	8.58236D-06
12	3.4447676D 00	3.4445514D 00	2.16144D-04	6.27457D-05
13	2.2515162D 00	2.2517140D 00	-1.97776D-04	-8.78411D-05
14	1.4725052D 00	1.4722846D 00	2.20515D-04	1.49755D-04
		RUN NO. 80HE-20N2-50-4		
0	6.9993795D 02	6.9994690D 02	-8.95082D-03	-1.27880D-05
1	4.0476763D 02	4.0471424D 02	5.33839D-02	1.31888D-04
2	2.4578892D 02	2.4576360D 02	2.53197D-02	1.03014D-04
3	1.5355924D 02	1.5355385D 02	5.38868D-03	3.50918D-05
4	9.7594820D 01	9.7588377D 01	6.44318D-03	6.60197D-05
5	6.2676957D 01	6.2672477D 01	4.47950D-03	7.14696D-05
6	4.0522375D 01	4.0513904D 01	8.47058D-03	2.09035D-04
7	2.6301417D 01	2.6299294D 01	2.12260D-03	8.07027D-05
8	1.7120256D 01	1.7117836D 01	2.42094D-03	1.41408D-04
9	1.1162033D 01	1.1161093D 01	9.39954D-04	8.42100D-05
10	7.2854938D 00	7.2854020D 00	9.17502D-05	1.25935D-05
11	4.7587090D 00	4.7590314D 00	-3.22499D-04	-6.77704D-05
12	3.1099260D 00	3.1102202D 00	-2.94215D-04	-9.46050D-05
13	2.0330138D 00	2.0332892D 00	-2.75375D-04	-1.35452D-04
14	1.3295411D 00	1.3295224D 00	1.86969D-05	1.40627D-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.35320D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528749800 00	S2N	1.92416D-10	SN	1.38714D-05
B	1.454549800 01	S2B	1.75013D-03	SB	4.18346D-02
C	2.236508170 02	S2C	1.90048D 01	SC	4.35945D 00
D	3.808359110 03	S2D	1.85158D 04	SD	1.36073D 02
P1	1.040827880 03	S2P1	3.71420D-02	SP1	1.92722D-01
P2	9.246815330 02	S2P2	1.45101D-02	SP2	1.20458D-01
P3	8.070769260 02	S2P3	6.60873D-03	SP3	8.12941D-02
P4	6.999468990 02	S2P4	4.30660D-03	SP4	6.56247D-02

COVARIANCES

S2BC	-1.70299D-01	S2BD	4.92464D 00
S2BP1	2.65194D-03	S2BP2	5.03630D-04
S2BP3	-7.50856D-04	S2BP4	-1.20036D-03
S2BN	-4.99359D-07	S2CD	-5.82233D 02
S2CP1	-4.03321D-01	S2CP2	-1.05918D-01
S2CP3	7.67384D-02	S2CP4	1.52198D-01
S2CN	4.17958D-05	S2DP1	1.60837D 01
S2DP2	5.56668D 00	S2DP3	-1.13868D 00
S2DP4	-4.18701D 00	S2DN	-1.16768D-03
S2P1P2	2.07005D-02	S2P1P3	9.77674D-03
S2P1P4	3.25241D-03	S2P1N	-5.40442D-07
S2P2P3	7.80833D-03	S2P2P4	4.11248D-03
S2P2N	-8.18290D-08	S2P3P4	4.24140D-03
S2P3N	1.79556D-07	S2P4N	2.67064D-07

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 70HE-30N2-50-1		
0	1.04537630 03	1.04536570 03	1.06366D-02	1.01749D-05
1	5.62599730 02	5.62548500 02	5.12320D-02	9.10629D-05
2	3.29061960 02	3.29044750 02	1.72093D-02	5.22979D-05
3	2.01451500 02	2.01436850 02	1.46476D-02	7.27104D-05
4	1.26562870 02	1.26552630 02	1.02433D-02	8.09341D-05
5	8.07326800 01	8.07285940 01	4.08529D-03	5.06027D-05
6	5.19742580 01	5.19752010 01	-9.42835D-04	-1.81404D-05
7	3.36527770 01	3.36549900 01	-2.21264D-03	-6.57490D-05
8	2.18690270 01	2.18709030 01	-1.87632D-03	-8.57979D-05
9	1.42483260 01	1.42455890 01	2.73777D-03	1.92147D-04
10	9.32004040 00	9.29253840 00	2.75020D-02	2.95085D-03
11	6.06735250 00	6.06739380 00	-4.13263D-05	-6.81126D-06
12	3.96405910 00	3.96404490 00	1.41632D-05	3.57291D-06
13	2.59109510 00	2.59089440 00	2.00684D-04	7.74516D-05
14	1.69362100 00	1.69384930 00	-2.28329D-04	-1.34817D-04
		RUN NO. 70HE-30N2-50-2		
0	9.31130980 02	9.31160100 02	-2.91143D-02	-3.12676D-05
1	5.10363150 02	5.10377280 02	-1.41275D-02	-2.76812D-05
2	3.01490570 02	3.01502100 02	-1.15295D-02	-3.82417D-05
3	1.85606340 02	1.85603310 02	3.02251D-03	1.62845D-05
4	1.16979830 02	1.16982570 02	-2.74214D-03	-2.34411D-05
5	7.47685590 01	7.47686210 01	-6.20377D-05	-8.29730D-07
6	4.81931860 01	4.81954140 01	-2.22749D-03	-4.62201D-05
7	3.12286750 01	3.12307940 01	-2.11903D-03	-6.78553D-05
8	2.03049310 01	2.03051370 01	-2.05733D-04	-1.01322D-05
9	1.32307240 01	1.32297420 01	9.82189D-04	7.42355D-05
10	8.63162580 00	8.63158110 00	4.46131D-05	5.16856D-06
11	5.63657300 00	5.63654880 00	2.41254D-05	4.28015D-06
12	3.68274650 00	3.68286230 00	-1.15821D-04	-3.14497D-05
13	2.40689950 00	2.40724320 00	-3.43704D-04	-1.42799D-04
14	1.57407290 00	1.57383880 00	2.34134D-04	1.48744D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 70HE-30N2-50-3		
0	8.0598533D 02	8.0600196D 02	-1.66362D-02	-2.06408D-05
1	4.5115162D 02	4.5118574D 02	-3.41210D-02	-7.56308D-05
2	2.6958365D 02	2.6960270D 02	-1.90538D-02	-7.06787D-05
3	1.6703767D 02	1.6704225D 02	-4.58066D-03	-2.74229D-05
4	1.0568535D 02	1.0568318D 02	2.17096D-03	2.05417D-05
5	6.7701032D 01	6.7701118D 01	-8.67170D-05	-1.28088D-06
6	4.3706040D 01	4.3701292D 01	4.74835D-03	1.08643D-04
7	2.8344989D 01	2.8343663D 01	1.32617D-03	4.67867D-05
8	1.8437952D 01	1.8438404D 01	-4.52755D-04	-2.45556D-05
9	1.2017715D 01	1.2017820D 01	-1.04924D-04	-8.73077D-06
10	7.8417110D 00	7.8427074D 00	-9.96463D-04	-1.27072D-04
11	5.1216884D 00	5.1221778D 00	-4.89487D-04	-9.55713D-05
12	3.3469925D 00	3.3471071D 00	-1.14661D-04	-3.42578D-05
13	2.1879488D 00	2.1879226D 00	2.62261D-05	1.19866D-05
14	1.4306788D 00	1.4305084D 00	1.70424D-04	1.19121D-04
		RUN NO. 70HE-30N2-50-4		
0	6.8831059D 02	6.8827323D 02	3.73533D-02	5.42681D-05
1	3.9335303D 02	3.9336357D 02	-1.05404D-02	-2.67964D-05
2	2.3773437D 02	2.3773918D 02	-4.80863D-03	-2.02269D-05
3	1.4825950D 02	1.4825787D 02	1.63223D-03	1.10093D-05
4	9.4161337D 01	9.4158369D 01	2.96756D-03	3.15157D-05
5	6.0456588D 01	6.0458494D 01	-1.90655D-03	-3.15359D-05
6	3.9079701D 01	3.9082382D 01	-2.68111D-03	-6.86061D-05
7	2.5368411D 01	2.5370950D 01	-2.53919D-03	-1.00092D-04
8	1.6513011D 01	1.6514115D 01	-1.10459D-03	-6.68918D-05
9	1.0769217D 01	1.0767607D 01	1.60979D-03	1.49481D-04
10	7.0290660D 00	7.0285207D 00	5.45287D-04	7.75760D-05
11	4.5913552D 00	4.5911381D 00	2.17110D-04	4.72866D-05
12	3.0006953D 00	3.0004019D 00	2.93449D-04	9.77936D-05
13	1.9613701D 00	1.9614197D 00	-4.95862D-05	-2.52814D-05
14	1.2823385D 00	1.2824716D 00	-1.33061D-04	-1.03765D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.29885D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52883419D 00	S2N	2.92986D-10	SN	1.71168D-05
B	1.46380984D 01	S2B	5.39834D-03	SB	7.34734D-02
C	3.43515177D 02	S2C	1.95717D 02	SC	1.39899D 01
D	2.27041573D 03	S2D	1.07263D 06	SD	1.03568D 03
E	9.39881401D 04	S2E	5.64682D 08	SE	2.37630D 04
P1	1.04536566D 03	S2P1	4.70812D-02	SP1	2.16982D-01
P2	9.31160097D 02	S2P2	1.50004D-02	SP2	1.22476D-01
P3	8.06001962D 02	S2P3	9.76010D-03	SP3	9.87932D-02
P4	6.88273234D 02	S2P4	6.77416D-03	SP4	8.23053D-02

COVARIANCES

S2BC	-9.71910D-01	S2BD	6.65935D 01
S2BE	-1.41312D 03	S2BP1	-3.74144D-03
S2BP2	1.16307D 03	S2BP3	2.69481D-03
S2BP4	1.92251D-03	S2BN	-1.11518D-06
S2CD	-1.42109D 04	S2CE	3.13626D 05
S2CP1	9.96946D-01	S2CP2	-2.42835D-01
S2CP3	-6.80406D-01	S2CP4	-5.34528D-01
S2CN	1.77712D-04	S2DE	-2.43483D 07
S2DP1	-9.23127D 01	S2DP2	1.54916D 01
S2DP3	5.73850D 01	S2DP4	4.91231D 01
S2DN	-1.16411D-02	S2EP1	2.54087D 03
S2EP2	-2.02500D 02	S2EP3	-1.35082D 03
S2EP4	-1.24213D 03	S2EN	2.39435D-01
S2P1P2	1.97626D-02	S2P1P3	3.75098D-03
S2PIP4	-2.46485D-03	S2P1N	5.64019D-07
S2P2P3	8.32947D-03	S2P2P4	4.30142D-03
S2P2N	-2.00404D-07	S2P3P4	6.96295D-03
S2P3N	-4.13197D-07	S2P4N	-2.70765D-07

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 60HE-40N2-50-1		
0	1.03462800 03	1.03482580 03	-1.978050-01	-1.911850-04
1	5.45287480 02	5.45509470 02	-2.219900-01	-4.071060-04
2	3.16632280 02	3.16720170 02	-8.789350-02	-2.775890-04
3	1.93455210 02	1.93506310 02	-5.109750-02	-2.641310-04
4	1.21524840 02	1.21551340 02	-2.650770-02	-2.181260-04
5	7.75496020 01	7.75648940 01	-1.529180-02	-1.971880-04
6	4.99508630 01	4.99586340 01	-7.770710-03	-1.555670-04
7	3.23538800 01	3.23605590 01	-6.679300-03	-2.064450-04
8	2.10310050 01	2.10355410 01	-4.536660-03	-2.157130-04
9	1.37010770 01	1.37044310 01	-3.353610-03	-2.447700-04
10	8.93851530 00	8.94105340 00	-2.538110-03	-2.839520-04
11	5.84025980 00	5.83870170 00	1.558080-03	2.667830-04
12	3.81585260 00	3.81507390 00	7.786900-04	2.040670-04
13	2.49416650 00	2.49377930 00	3.871480-04	1.552220-04
14	1.63077030 00	1.63050740 00	2.629290-04	1.612300-04
		RUN NO. 60HE-40N2-50-2		
0	9.20168960 02	9.19977850 02	1.911060-01	2.076860-04
1	4.95240350 02	4.95197730 02	4.262010-02	8.605940-05
2	2.90731520 02	2.90688220 02	4.330050-02	1.489360-04
3	1.78673430 02	1.78651080 02	2.235100-02	1.250940-04
4	1.12600220 02	1.12590190 02	1.002910-02	8.906850-05
5	7.19887730 01	7.19845860 01	4.187200-03	5.816460-05
6	4.64197490 01	4.64180950 01	1.654400-03	3.563990-05
7	3.00916890 01	3.00887000 01	2.989600-03	9.934970-05
8	1.95701450 01	1.95675600 01	2.584700-03	1.320740-04
9	1.27529650 01	1.27517170 01	1.247310-03	9.780550-05
10	8.32157790 00	8.32101980 00	5.581030-04	6.706700-05
11	5.43422990 00	5.43445530 00	-2.254760-04	-4.149180-05
12	3.55099110 00	3.55121010 00	-2.189740-04	-6.166560-05
13	2.32146290 00	2.32141800 00	4.492540-05	1.935220-05
14	1.51758870 00	1.51786230 00	-2.736180-04	-1.802980-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.|	REL. ERROR IN P
		RUN NO. 60HE-40N2-50-3		
0	8.08016500 02	8.07901300 02	1.152000-01	1.425720-04
1	4.44352190 02	4.44291620 02	6.056680-02	1.363040-04
2	2.63807850 02	2.63763820 02	4.402400-02	1.668790-04
3	1.63108900 02	1.63093390 02	1.551240-02	9.510470-05
4	1.03149110 02	1.03138400 02	1.071600-02	1.038890-04
5	6.60878300 01	6.60743640 01	1.346600-02	2.037590-04
6	4.26672130 01	4.26589520 01	8.261520-03	1.936270-04
7	2.76777730 01	2.76729100 01	4.863130-03	1.757050-04
8	1.80077790 01	1.80050970 01	2.682270-03	1.489510-04
9	1.17377930 01	1.17370770 01	7.164600-04	6.103870-05
10	7.66039660 00	7.66042930 00	-3.264430-05	-4.261430-06
11	5.00315830 00	5.00365990 00	-5.015910-04	-1.002550-04
12	3.26941070 00	3.26997170 00	-5.609720-04	-1.715820-04
13	2.13748250 00	2.13768800 00	-2.055140-04	-9.614780-05
14	1.39775870 00	1.39777930 00	-2.058360-05	-1.472620-05
		RUN NO. 60HE-40N2-50-4		
0	6.69297990 02	6.69299280 02	-1.286760-03	-1.922560-06
1	3.78533320 02	3.78510400 02	2.291650-02	6.054030-05
2	2.28062960 02	2.28050930 02	1.203250-02	5.275950-05
3	1.42 4811D 02	1.42149320 02	-1.210240-03	-8.513950-06
4	9.03043310 01	9.03060430 01	-1.711880-03	-1.895680-05
5	5.80106360 01	5.80104060 01	2.300680-04	3.965960-06
6	3.75130100 01	3.75146270 01	-1.616710-03	-4.309740-05
7	2.43588360 01	2.43608630 01	-2.027670-03	-8.324170-05
8	1.58584340 01	1.58604920 01	-2.058540-03	-1.298070-04
9	1.03424530 01	1.03433810 01	-9.276460-04	-8.969310-05
10	6.75327100 00	6.75262530 00	6.457290-04	9.561720-05
11	4.41209240 00	4.41146780 00	6.246060-04	1.415670-04
12	2.88315750 00	2.88329180 00	-1.343030-04	-4.658200-05
13	1.88505750 00	1.88504200 00	1.546830-05	8.205760-06

TABLE 14.1 - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 3.37661D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528722970 00	S2N	8.65359D-10	SN	2.94170D-05
B	1.462747010 01	S2B	1.60944D-02	SB	1.26864D-01
C	4.050410430 02	S2C	6.25731D 02	SC	2.50146D 01
D	6.035319590 03	S2D	3.72540D 06	SD	1.93013D 03
E	1.060465080 05	S2E	2.11760D 09	SE	4.60174D 04
P1	1.034825830 03	S2P1	1.18847D-01	SP1	3.44742D-01
P2	9.199778500 02	S2P2	3.83917D-02	SP2	1.95938D-01
P3	8.079012980 02	S2P3	2.54448D-02	SP3	1.59514D-01
P4	6.692992800 02	S2P4	1.73050D-02	SP4	1.31548D-01

COVARIANCES

S2BC	-3.00339D 00	S2BD	2.14896D 02
S2BE	-4.73983D 03	S2BP1	-1.04526D-02
S2BP2	2.70707D-03	S2BP3	7.16479D-03
S2BP4	5.76068D-03	S2BN	-3.31755D-06
S2CD	-4.73783D 04	S2CE	1.08688D 06
S2CP1	2.88017D 00	S2CP2	-5.85004D-01
S2CP3	-1.86488D 00	S2CP4	-1.59409D 00
S2CN	5.48641D-04	S2DE	-8.78737D 07
S2DP1	-2.76704D 02	S2DP2	3.72629D 01
S2DP3	1.62017D 02	S2DP4	1.50153D 02
S2DN	-3.75641D-02	S2EP1	7.89148D 03
S2EP2	-4.12457D 02	S2EP3	-3.91122D 03
S2EP4	-3.91754D 03	S2EN	8.01928D-01
S2P1P2	5.08260D-02	S2P1P3	1.33257D-02
S2P1P4	-6.68824D-03	S2P1N	1.55790D-06
S2P2P3	2.24101D-02	S2P2P4	1.03273D-02
S2P2N	-4.45988D-07	S2P3P4	1.71164D-02
S2P3N	-1.07481D-06	S2P4N	-8.88012D-07

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-50-1		
0	6.35670110 02	6.35639320 02	3.079420-02	4.844370-05
1	3.56479440 02	3.56479320 02	1.164250-04	3.265950-07
2	2.14577510 02	2.14574670 02	2.837030-03	1.322150-05
3	1.33921340 02	1.33912130 02	9.216220-03	6.881810-05
4	8.52162510 01	8.52083070 01	7.944070-03	9.322250-05
5	5.48129140 01	5.48118790 01	1.035460-03	1.889080-05
6	3.54826640 01	3.54838370 01	-1.173070-03	-3.306050-05
7	2.30594070 01	2.30595940 01	-1.877760-04	-8.143150-06
8	1.50178420 01	1.50210690 01	-3.227450-03	-2.149080-04
9	9.80228490 00	9.79932620 00	2.958700-03	3.018380-04
10	6.39949970 00	6.39886550 00	6.342140-04	9.910360-05
11	4.18132250 00	4.18094070 00	3.818250-04	9.131670-05
12	2.73278510 00	2.73285010 00	-6.496510-05	-2.377250-05
13	1.78644040 00	1.78676910 00	-3.286790-04	-1.839850-04
		RUN NO. 50HE-50N2-50-2		
0	7.31154250 02	7.30918280 02	2.359670-01	3.227320-04
1	4.00744210 02	4.00662460 02	8.175810-02	2.040160-04
2	2.38478480 02	2.38432960 02	4.552240-02	1.908870-04
3	1.47943600 02	1.47918220 02	2.537780-02	1.715370-04
4	9.38341660 01	9.38137460 01	2.042010-02	2.176190-04
5	6.02539280 01	6.02349270 01	1.900170-02	3.153600-04
6	3.89605980 01	3.89514490 01	9.149020-03	2.348270-04
7	2.52989790 01	2.52959900 01	2.988960-03	1.181450-04
8	1.64719250 01	1.64709400 01	9.854670-04	5.982710-05
9	1.07426360 01	1.07423260 01	3.094080-04	2.880180-05
10	7.01340240 00	7.01344370 00	-4.130320-05	-5.889190-06
11	4.58183920 00	4.58199700 00	-1.577730-04	-3.443450-05
12	2.99464160 00	2.99478610 00	-1.444910-04	-4.825000-05
13	1.95748400 00	1.95793570 00	-4.516980-04	-2.307540-04
14	1.28023110 00	1.28029530 00	-6.412960-05	-5.009220-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-50-3		
0	8.41325620 02	8.41248580 02	7.70447D-02	9.15754D-05
1	4.49616520 02	4.49609540 02	6.97953D-03	1.55233D-05
2	2.64214580 02	2.64209370 02	5.21354D-03	1.97322D-05
3	1.62844120 02	1.62845840 02	-1.71830D-03	-1.05518D-05
4	1.02918150 02	1.02917110 02	1.03614D-03	1.00676D-05
5	6.59479660 01	6.59476430 01	3.23089D-04	4.89914D-06
6	4.25975510 01	4.25953480 01	2.20290D-03	5.17143D-05
7	2.76389940 01	2.76426430 01	-3.64910D-03	-1.32027D-04
8	1.79866590 01	1.79909270 01	-4.26870D-03	-2.37326D-04
9	1.17326590 01	1.17303770 01	2.28179D-03	1.94482D-04
10	7.65773110 00	7.65715410 00	5.77025D-04	7.53520D-05
11	5.00203290 00	5.00196870 00	6.41940D-05	1.28336D-05
12	3.26909270 00	3.26903600 00	5.67314D-05	1.73539D-05
13	2.13685060 00	2.13713200 00	-2.81454D-04	-1.31714D-04
14	1.39751970 00	1.39742790 00	9.18291D-05	6.57086D-05
		RUN NO. 50HE-50N2-50-4		
0	9.31878310 02	9.32053260 02	-1.74945D-01	-1.87734D-04
1	4.88197620 02	4.88314890 02	-1.17270D-01	-2.40211D-04
2	2.84068570 02	2.84126110 02	-5.75356D-02	-2.02541D-04
3	1.74209840 02	1.74235630 02	-2.57899D-02	-1.48039D-04
4	1.09806600 02	1.09815280 02	-8.67775D-03	-7.90276D-05
5	7.02506520 01	7.02598060 01	-9.15478D-03	-1.30316D-04
6	4.53313890 01	4.53397540 01	-8.36502D-03	-1.84530D-04
7	2.94009950 01	2.94076770 01	-6.68245D-03	-2.27287D-04
8	1.91278370 01	1.91333590 01	-5.42205D-03	-2.83464D-04
9	1.24684400 01	1.24725620 01	-4.12159D-03	-3.30562D-04
10	8.14198510 00	8.14052960 00	1.45552D-03	1.78767D-04
11	5.31780620 00	5.31726990 00	5.36288D-04	1.00848D-04
12	3.47515630 00	3.47490690 00	2.49407D-04	7.17687D-05
13	2.27196050 00	2.27163770 00	3.22786D-04	1.42074D-04
14	1.48554040 00	1.48534340 00	1.96951D-04	1.32579D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 50HE-50N2-50-5		
0	1.03050060 03	1.03052650 03	-2.586570-02	-2.510020-05
1	5.28778250 02	5.28861000 02	-8.274580-02	-1.564850-04
2	3.04529640 02	3.04568320 02	-3.868260-02	-1.270240-04
3	1.85780350 02	1.85796350 02	-1.599510-02	-8.609660-05
4	1.16785670 02	1.16774540 02	1.112680-02	9.527550-05
5	7.45911890 01	7.45954250 01	-4.236450-03	-5.679560-05
6	4.80903330 01	4.80937070 01	-3.374490-03	-7.016980-05
7	3.11751480 01	3.11768060 01	-1.657550-03	-5.316910-05
8	2.02721760 01	2.02774350 01	-5.258940-03	-2.594170-04
9	1.32174290 01	1.32156210 01	1.807480-03	1.367500-04
10	8.62527300 00	8.62434180 00	9.312020-04	1.079620-04
11	5.63276330 00	5.63280050 00	-3.718210-05	-6.601040-06
12	3.68074500 00	3.68090430 00	-1.592760-04	-4.327270-05
13	2.40633910 00	2.40621620 00	1.228480-04	5.105170-05
14	1.57336580 00	1.57330240 00	6.345860-05	4.033310-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 4.044670-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528761430 00	S2N	6.105380-10	SN	2.470910-05
B	1.338834630 01	S2B	1.245370-02	SB	1.115960-01
C	5.703465120 02	S2C	5.329770 02	SC	2.308630 01
D	4.820034140 03	S2D	3.469800 06	SD	1.862740 03
E	2.969762650 05	S2E	2.141980 09	SE	4.628150 04
P1	6.356393200 02	S2P1	1.143600-02	SP1	1.069390-01
P2	7.309182840 02	S2P2	1.595240-02	SP2	1.263030-01
P3	8.412485790 02	S2P3	2.108880-02	SP3	1.452200-01
P4	9.320532580 02	S2P4	3.621460-02	SP4	1.903010-01
P5	1.030526500 03	S2P5	9.748490-02	SP5	3.122260-01

COVARIANCES

S2BC	-2.438330 00	S2BD	1.824470 02
S2BE	-4.183330 03	S2BP1	3.920550-03
S2BP2	5.147830-03	S2BP3	4.230090-03
S2BP4	6.268360-05	S2BP5	-8.893230-03
S2BN	-2.446100-06	S2CD	-4.219700 04
S2CE	1.007590 06	S2CP1	-1.146750 00
S2CP2	-1.451430 00	S2CP3	-1.099360 00
S2CP4	9.964000-02	S2CP5	2.559650 00

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

COVARIANCES

S2CN	4.24211D-04	S2DE	-8.52509D 07
S2DP1	1.13831D 02	S2DP2	1.36205D 02
S2DP3	9.39857D 01	S2DP4	-2.38073D 01
S2DP5	-2.55909D 02	S2DN	-3.03859D-02
S2EP1	-3.11043D 03	S2EP2	-3.54521D 03
S2EP3	-2.16267D 03	S2EP4	1.18860D 03
S2EP5	7.57284D 03	S2EN	6.72938D-01
S2P1P2	1.15403D-02	S2P1P3	9.67469D-03
S2P1P4	4.34772D-03	S2P1P5	-6.02483D-03
S2P1N	-5.76355D-07	S2P2P3	1.41792D-02
S2P2P4	1.02809D-02	S2P2P5	1.33553D-03
S2P2N	-7.17449D-07	S2P3P4	2.08581D-02
S2P3P5	2.13489D-02	S2P3N	-6.26153D-07
S2P4P5	4.93035D-02	S2P4N	-4.13980D-08
S2P5N	1.26512D-06		

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 40HE-60N2-50-1		
0	6.3774033D 02	6.37714060 02	2.62687D-02	4.11903D-05
1	3.52976920 02	3.52972470 02	4.45678D-03	1.26263D-05
2	2.11755140 02	2.11754390 02	7.48143D-04	3.53306D-06
3	1.32145450 02	1.32136140 02	9.30693D-03	7.04294D-05
4	8.41458210 01	8.41406620 01	5.15890D-03	6.13090D-05
5	5.41821370 01	5.41703090 01	1.18275D-02	2.18291D-04
6	3.50920860 01	3.50934990 01	-1.41333D-03	-4.02750D-05
7	2.28144240 01	2.28186800 01	-4.25540D-03	-1.86522D-04
8	1.48662070 01	1.48705030 01	-4.29611D-03	-2.88985D-04
9	9.70006680 00	9.70430420 00	-4.23746D-03	-4.36849D-04
10	6.34077840 00	6.33846910 00	2.30924D-03	3.64189D-04
11	4.14331450 00	4.14236080 00	9.53700D-04	2.30178D-04
12	2.70852000 00	2.70812240 00	3.97603D-04	1.46797D-04
13	1.77057520 00	1.77088440 00	-3.09155D-04	-1.74607D-04
		RUN NO. 40HE-60N2-50-2		
0	7.30384830 02	7.30497660 02	-1.12834D-01	-1.54485D-04
1	3.94377200 02	3.94433460 02	-5.62560D-02	-1.42645D-04
2	2.33798690 02	2.33828380 02	-2.96932D-02	-1.27003D-04
3	1.45039520 02	1.45046260 02	-6.74608D-03	-4.65120D-05
4	9.20703090 01	9.20726130 01	-2.30447D-03	-2.50295D-05
5	5.91730130 01	5.91740930 01	-1.08021D-03	-1.82550D-05
6	3.82919420 01	3.82966470 01	-4.70523D-03	-1.22878D-04
7	2.48814630 01	2.48864860 01	-5.02312D-03	-2.01882D-04
8	1.62062100 01	1.62120670 01	-5.85633D-03	-3.61364D-04
9	1.05727490 01	1.05773450 01	-4.59591D-03	-4.34694D-04
10	6.90986950 00	6.90769030 00	2.17919D-03	3.15374D-04
11	4.51483730 00	4.51393680 00	9.00483D-04	1.99450D-04
12	2.95128340 00	2.95086560 00	4.17739D-04	1.41545D-04
13	1.92968950 00	1.92954190 00	1.47572D-04	7.64743D-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.I	REL. ERROR IN P
		RUN NO. 40HE-60N2-50-3		
0	8.38909100 02	8.38411770 02	4.97325D-01	5.92824D-04
1	4.40599110 02	4.40411000 02	1.88111D-01	4.26944D-04
2	2.57753850 02	2.57657950 02	9.59021D-02	3.72068D-04
3	1.58850060 02	1.58787990 02	6.20750D-02	3.90777D-04
4	1.00499210 02	1.00452910 02	4.63045D-02	4.60745D-04
5	6.44693080 01	6.44393590 01	2.99491D-02	4.64549D-04
6	4.16849360 01	4.16595040 01	2.54313D-02	6.10085D-04
7	2.70678930 01	2.70545070 01	1.33862D-02	4.94540D-04
8	1.76248470 01	1.76175240 01	7.32298D-03	4.15492D-04
9	1.14934740 01	1.14915150 01	1.95885D-03	1.70432D-04
10	7.50358410 00	7.50354350 00	4.06003D-05	5.41078D-06
11	4.90232660 00	4.90282130 00	-4.94775D-04	-1.00927D-04
12	3.20429370 00	3.20488410 00	-5.90336D-04	-1.84233D-04
13	2.09468990 00	2.09555540 00	-8.65475D-04	-4.13176D-04
14	1.37005740 00	1.37045320 00	-3.95824D-04	-2.88910D-04
		RUN NO. 40HE-60N2-50-4		
0	9.30008980 02	9.29680940 02	3.28043D-01	3.52731D-04
1	4.77729590 02	4.77651730 02	7.78594D-02	1.62978D-04
2	2.76520280 02	2.76481080 02	3.92020D-02	1.41769D-04
3	1.69518930 02	1.69499860 02	1.90686D-02	1.12487D-04
4	1.06955290 02	1.06940120 02	1.51749D-02	1.41880D-04
5	6.85118370 01	6.84998960 01	1.19413D-02	1.74296D-04
6	4.42534720 01	4.42474510 01	6.02180D-03	1.36075D-04
7	2.87223580 01	2.87209060 01	1.45263D-03	5.05748D-05
8	1.86966110 01	1.86970050 01	-3.93968D-04	-2.10716D-05
9	1.21989720 01	1.21933420 01	5.62988D-03	4.61505D-04
10	7.96348730 00	7.96086310 00	2.62415D-03	3.29523D-04
11	5.20181140 00	5.20123860 00	5.72883D-04	1.10131D-04
12	3.39950870 00	3.39978720 00	-2.78540D-04	-8.19353D-05
13	2.22247730 00	2.22292480 00	-4.47505D-04	-2.01354D-04
14	1.45322100 00	1.45372030 00	-4.99299D-04	-3.43581D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 40HE-60N2-50-5		
0	1.0378426D 03	1.0384152D 03	-5.72595D-01	-5.51716D-04
1	5.1995746D 02	5.2030676D 02	-3.49301D-01	-6.71788D-04
2	2.9737609D 02	2.9754064D 02	-1.64546D-01	-5.53328D-04
3	1.8125106D 02	1.8133608D 02	-8.50247D-02	-4.69099D-04
4	1.1402041D 02	1.1406157D 02	-4.11663D-02	-3.61043D-04
5	7.2914619D 01	7.2941793D 01	-2.71737D-02	-3.72678D-04
6	4.7054117D 01	4.7072922D 01	-1.88055D-02	-3.99657D-04
7	3.0522366D 01	3.0538197D 01	-1.58314D-02	-5.18683D-04
8	1.9860163D 01	1.9873443D 01	-1.32802D-02	-6.68685D-04
9	1.2947948D 01	1.2957891D 01	-9.94290D-03	-7.67913D-04
10	8.4514812D 00	8.4589259D 00	-7.44471D-03	-8.80877D-04
11	5.5298641D 00	5.5261894D 00	3.67472D-03	6.64522D-04
12	3.6140661D 00	3.6119980D 00	2.06809D-03	5.72233D-04
13	2.3627064D 00	2.3615955D 00	1.11093D-03	4.70193D-04
14	1.5449423D 00	1.5443717D 00	5.70503D-04	3.69272D-04

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 2.67788D-06

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52858052D 00	S2N	4.54932D-09	SN	6.74486D-05
B	1.23271966D 01	S2B	9.04026D-02	SB	3.00670D-01
C	6.63997183D 02	S2C	3.97315D 03	SC	6.30329D 01
D	6.55647056D 03	S2D	2.69436D 07	SD	5.19073D 03
E	4.40430958D 05	S2E	1.72588D 10	SE	1.31373D 05
P1	6.37714057D 02	S2P1	7.82802D-02	SP1	2.79786D-01
P2	7.30497660D 02	S2P2	1.08550D-01	SP2	3.29470D-01
P3	8.38411773D 02	S2P3	1.39840D-01	SP3	3.73951D-01
P4	9.29680938D 02	S2P4	2.38497D-01	SP4	4.88361D-01
P5	1.03841522D 03	S2P5	6.72316D-01	SP5	8.19949D-01

COVARIANCES

S2BC	-1.79452D 01	S2BD	1.37098D 03
S2BE	-3.19338D 04	S2BP1	2.81665D-02
S2BP2	3.80957D-02	S2BP3	2.75944D-02
S2BP4	9.27224D-05	S2BP5	-6.46014D-02
S2BN	-1.80410D-05	S2CD	-3.21068D 05
S2CE	7.80030D 06	S2CP1	-8.31909D 00
S2CP2	-1.04726D 01	S2CP3	-7.31529D 00
S2CP4	7.31040D-01	S2CP5	1.87765D 01

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

COVARIANCES

S2CN	3.17465D-03	S2DE	-6.73997D 08
S2DP1	8.35882D 02	S2DP2	9.86509D 02
S2DP3	6.36525D 02	S2DP4	-1.71617D 02
S2DP5	-1.91107D 03	S2DN	-2.32143D-01
S2EP1	-2.31441D 04	S2EP2	-2.58739D 04
S2EP3	-1.47794D 04	S2EP4	8.71128D 03
S2EP5	5.75525D 04	S2EN	5.20580D 00
S2P1P2	7.71913D-02	S2P1P3	6.54379D-02
S2P1P4	3.25989D-02	S2P1P5	-3.82991D-02
S2P1N	-4.12769D-06	S2P2P3	9.36819D-02
S2P2P4	7.11775D-02	S2P2P5	1.25139D-02
S2P2N	-5.92700D-06	S2P3P4	1.38380D-01
S2P3P5	1.45454D-01	S2P3N	-4.02106D-06
S2P4P5	3.27643D-01	S2P4N	-1.40628D-07
S2P5N	9.37404D-06		

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-50-1		
0	6.33530210 02	6.33568140 02	-3.79302D-02	-5.98711D-05
1	3.45303460 02	3.45269250 02	3.42188D-02	9.90977D-05
2	2.06576880 02	2.06572680 02	4.19910D-03	2.03271D-05
3	1.29047260 02	1.29043700 02	3.55963D-03	2.75840D-05
4	8.23222450 01	8.23187110 01	3.53362D-03	4.29242D-05
5	5.30821970 01	5.30816610 01	5.35554D-04	1.00891D-05
6	3.44274500 01	3.44299430 01	-2.49291D-03	-7.24104D-05
7	2.24030260 01	2.24066640 01	-3.63801D-03	-1.62389D-04
8	1.46069800 01	1.46108250 01	-3.84501D-03	-2.63231D-04
9	9.54206040 00	9.53880260 00	3.25775D-03	3.41410D-04
10	6.23338340 00	6.23214620 00	1.23713D-03	1.98468D-04
11	4.07395300 00	4.07367830 00	2.74658D-04	6.74181D-05
12	2.66350110 00	2.66358850 00	-8.73507D-05	-3.27954D-05
13	1.74169260 00	1.74193570 00	-2.43110D-04	-1.39583D-04
		RUN NO. 30HE-70N2-50-2		
0	7.32765410 02	7.32407710 02	3.57701D-01	4.88152D-04
1	3.87531900 02	3.87335900 02	1.96001D-01	5.05767D-04
2	2.28670550 02	2.28573490 02	9.70629D-02	4.24466D-04
3	1.41916840 02	1.41865880 02	5.09536D-02	3.59039D-04
4	9.02527500 01	9.02065170 01	4.62325D-02	5.12255D-04
5	5.80987570 01	5.80688920 01	2.98652D-02	5.14042D-04
6	3.76470720 01	3.76291210 01	1.79508D-02	4.76819D-04
7	2.44844300 01	2.44752220 01	9.20828D-03	3.76087D-04
8	1.59583050 01	1.59544290 01	3.87575D-03	2.42867D-04
9	1.04152970 01	1.04138770 01	1.42017D-03	1.36354D-04
10	6.80287300 00	6.80300860 00	-1.35622D-04	-1.99359D-05
11	4.44565740 00	4.44646650 00	-8.09164D-04	-1.82012D-04
12	2.90625260 00	2.90718650 00	-9.33901D-04	-3.21342D-04
13	1.90033890 00	1.90118050 00	-8.41570D-04	-4.42853D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-50-3		
0	8.41702240 02	8.41988760 02	-2.865200-01	-3.404050-04
1	4.31389830 02	4.31487420 02	-9.758230-02	-2.262040-04
2	2.50910670 02	2.50955930 02	-4.526420-02	-1.804000-04
3	1.54678470 02	1.54706860 02	-2.839490-02	-1.835730-04
4	9.80236740 01	9.80439870 01	-2.031330-02	-2.072290-04
5	6.29935560 01	6.30042420 01	-1.068590-02	-1.696340-04
6	4.07844430 01	4.07881320 01	-3.689200-03	-9.045600-05
7	2.65073350 01	2.65153160 01	-7.981360-03	-3.011000-04
8	1.72717480 01	1.72786040 01	-6.856640-03	-3.969860-04
9	1.12705130 01	1.12759290 01	-5.416010-03	-4.805470-04
10	7.36919030 00	7.36522880 00	3.961570-03	5.375860-04
11	4.81487230 00	4.81355060 00	1.321630-03	2.744890-04
12	3.14752460 00	3.14703210 00	4.924460-04	1.564550-04
13	2.05812070 00	2.05796160 00	1.590820-04	7.729490-05
14	1.34597940 00	1.34597910 00	2.888800-07	2.146250-07
		RUN NO. 30HE-70N2-50-4		
0	9.43771430 02	9.43109320 02	6.621170-01	7.015650-04
1	4.70422030 02	4.70264460 02	1.575770-01	3.349700-04
2	2.70137630 02	2.70045910 02	9.172470-02	3.395480-04
3	1.65541660 02	1.65496330 02	4.532930-02	2.738240-04
4	1.04612470 02	1.04580370 02	3.209950-02	3.068420-04
5	6.71267870 01	6.71045820 01	2.220520-02	3.307940-04
6	4.34382600 01	4.34073280 01	3.093220-02	7.120950-04
7	2.82185400 01	2.82048820 01	1.365750-02	4.839900-04
8	1.83825420 01	1.83745420 01	8.000090-03	4.352000-04
9	1.19915630 01	1.19891170 01	2.446160-03	2.039900-04
10	7.83012930 00	7.83024940 00	-1.201020-04	-1.533850-05
11	5.11681630 00	5.11712570 00	-3.094540-04	-6.047790-05
12	3.34477180 00	3.34536320 00	-5.914600-04	-1.768310-04
13	2.18699640 00	2.18759780 00	-6.014430-04	-2.750090-04
14	1.43016620 00	1.43074040 00	-5.741690-04	-4.014700-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 30HE-70N2-50-5		
0	1.0394328D 03	1.0399511D 03	-5.18235D-01	-4.98575D-04
1	5.0547963D 02	5.0589085D 02	-4.11225D-01	-8.13534D-04
2	2.8697872D 02	2.8714212D 02	-1.63401D-01	-5.69385D-04
3	1.7492212D 02	1.7503229D 02	-1.10170D-01	-6.29826D-04
4	1.1025839D 02	1.1031952D 02	-6.11220D-02	-5.54352D-04
5	7.0652514D 01	7.0692773D 01	-4.02592D-02	-5.69820D-04
6	4.5670050D 01	4.5695313D 01	-2.52630D-02	-5.53164D-04
7	2.9661854D 01	2.9679347D 01	-1.74935D-02	-5.89763D-04
8	1.9317416D 01	1.9330415D 01	-1.29991D-02	-6.72919D-04
9	1.2601542D 01	1.2610949D 01	-9.40713D-03	-7.46507D-04
10	8.2285726D 00	8.2356197D 00	-7.04706D-03	-8.56413D-04
11	5.3854302D 00	5.3817259D 00	3.70428D-03	6.87833D-04
12	3.5200092D 00	3.5182173D 00	1.79195D-03	5.09075D-04
13	2.3018359D 00	2.3005755D 00	1.26036D-03	5.47544D-04
14	1.5053187D 00	1.5046071D 00	7.11586D-04	4.72714D-04

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 3.08322D-06

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.5285432 4D 00	S2N	5.21295D-09	SN	7.22007D-05
B	1.0353426 1D 01	S2B	1.07779D-01	SB	3.28297D-01
C	7.8579946 4D 02	S2C	5.04889D 03	SC	7.10555D 01
D	9.0455395 8D 03	S2D	3.62598D 07	SD	6.02161D 03
E	6.7665331 6D 05	S2E	2.43317D 10	SE	1.55986D 05
P1	6.3356814 1D 02	S2P1	9.07842D-02	SP1	3.01304D-01
P2	7.3240771 1D 02	S2P2	1.25482D-01	SP2	3.54234D-01
P3	8.4198876 0D 02	S2P3	1.62666D-01	SP3	4.03318D-01
P4	9.4310931 5D 02	S2P4	3.01443D-01	SP4	5.49038D-01
P5	1.0399510 5D 03	S2P5	7.26296D-01	SP5	8.52230D-01

COVARIANCES

S2BC	-2.2108 4D 01	S2BD	1.74059D 03
S2BE	-4.1443 6D 04	S2BP1	3.48029D-02
S2BP2	4.5081 7D-02	S2BP3	2.96644D-02
S2BP4	-8.0282 6D-03	S2BP5	-7.31704D-02
S2BN	-2.1079 3D-05	S2CD	-4.20015D 05
S2CE	1.0440 5D 07	S2CP1	-1.04389D 01
S2CP2	-1.2618 7D 01	S2CP3	-8.01199D 00
S2CP4	3.1997 1D 00	S2CP5	2.18271D 01

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

COVARIANCES

S2CN	3.83718D-03	S2DE	-9.28143D 08
S2DP1	1.06510D 03	S2DP2	1.20926D 03
S2DP3	7.04641D 02	S2DP4	-4.40287D 02
S2DP5	-2.27882D 03	S2DN	-2.89331D-01
S2EP1	-2.99608D 04	S2EP2	-3.21625D 04
S2EP3	-1.62444D 04	S2EP4	1.75606D 04
S2EP5	7.02774D 04	S2EN	6.61397D 00
S2P1P2	8.78956D-02	S2P1P3	7.27783D-02
S2P1P4	3.09013D-02	S2P1P5	-3.72220D-02
S2P1N	-5.04420D-06	S2P2P3	1.06291D-01
S2P2P4	7.94969D-02	S2P2P5	2.68017D-02
S2P2N	-6.93947D-06	S2P3P4	1.63478D-01
S2P3P5	1.77244D-01	S2P3N	-4.24339D-06
S2P4P5	3.96001D-01	S2P4N	1.02791D-06
S2P5N	1.04470D-05		

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-50-1		
0	6.3927581D 02	6.39805400 02	-5.29589D-01	-8.28421D-04
1	3.40963830 02	3.41142080 02	-1.78255D-01	-5.22796D-04
2	2.03169720 02	2.03280560 02	-1.10839D-01	-5.45548D-04
3	1.27085930 02	1.27142590 02	-5.66583D-02	-4.45827D-04
4	8.12670130 01	8.12923850 01	-2.53714D-02	-3.12199D-04
5	5.25236850 01	5.25306360 01	-6.95150D-03	-1.32350D-04
6	3.41181430 01	3.41281930 01	-1.00504D-02	-2.94576D-04
7	2.22294010 01	2.22362190 01	-6.81814D-03	-3.06717D-04
8	1.45131210 01	1.45112380 01	1.88292D-03	1.29739D-04
9	9.47965470 00	9.47877010 00	8.84584D-04	9.33140D-05
10	6.19554790 00	6.19500860 00	5.39329D-04	8.70511D-05
11	4.05064170 00	4.05024230 00	3.99400D-04	9.86017D-05
12	2.64908160 00	2.64858350 00	4.98062D-04	1.88013D-04
13	1.73258140 00	1.73223110 00	3.50332D-04	2.02202D-04
		RUN NO. 20HE-80N2-50-2		
0	7.20555030 02	7.20766560 02	-2.11533D-01	-2.93570D-04
1	3.73647140 02	3.73687030 02	-3.98927D-02	-1.06766D-04
2	2.19929290 02	2.19968930 02	-3.96432D-02	-1.80254D-04
3	1.36819160 02	1.36839120 02	-1.99626D-02	-1.45905D-04
4	8.72799600 01	8.72714840 01	8.47634D-03	9.71167D-05
5	5.63330370 01	5.63239590 01	9.07798D-03	1.61148D-04
6	3.65737830 01	3.65689050 01	4.87792D-03	1.33372D-04
7	2.38196910 01	2.38180350 01	1.65584D-03	6.95158D-05
8	1.55400150 01	1.55403930 01	-3.77859D-04	-2.43152D-05
9	1.01498590 01	1.01498110 01	4.87555D-05	4.80356D-06
10	6.63324280 00	6.63309930 00	1.43525D-04	2.16372D-05
11	4.33623770 00	4.33646760 00	-2.29845D-04	-5.30056D-05
12	2.83550930 00	2.83567500 00	-1.65674D-04	-5.84285D-05
13	1.85468030 00	1.85455940 00	1.20882D-04	6.51770D-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-50-3		
0	8.34594970 02	8.34089160 02	5.058130-01	6.060580-04
1	4.16965860 02	4.16721670 02	2.441980-01	5.856560-04
2	2.41449090 02	2.41334050 02	1.150430-01	4.764690-04
3	1.49108970 02	1.49060050 02	4.891720-02	3.280630-04
4	9.47826980 01	9.47514630 01	3.123460-02	3.295390-04
5	6.10709500 01	6.10524320 01	1.851830-02	3.032260-04
6	3.96297180 01	3.96058080 01	2.390930-02	6.033180-04
7	2.57927780 01	2.57843730 01	8.404680-03	3.258540-04
8	1.68222920 01	1.68190610 01	3.231230-03	1.920800-04
9	1.09840600 01	1.09832940 01	7.660930-04	6.974590-05
10	7.17676440 00	7.17714640 00	-3.819670-04	-5.322270-05
11	4.69127460 00	4.69188140 00	-6.068910-04	-1.293660-04
12	3.06708520 00	3.06797650 00	-8.912890-04	-2.905980-04
13	2.00596090 00	2.00644160 00	-4.807080-04	-2.396400-04
14	1.31215420 00	1.31233730 00	-1.831840-04	-1.396060-04
		RUN NO. 20HE-80N2-50-4		
0	9.25867790 02	9.25186950 02	6.808360-01	7.353490-04
1	4.49746290 02	4.49523230 02	2.230560-01	4.959610-04
2	2.57225910 02	2.57109520 02	1.163950-01	4.525020-04
3	1.58000390 02	1.57943770 02	5.661510-02	3.583230-04
4	1.00178250 02	1.00148750 02	2.950140-02	2.944890-04
5	6.44705060 01	6.44521540 01	1.835220-02	2.846600-04
6	4.17939790 01	4.17854080 01	8.570250-03	2.050590-04
7	2.71971830 01	2.71943090 01	2.873750-03	1.056640-04
8	1.77426630 01	1.77354490 01	7.213850-03	4.065820-04
9	1.15836690 01	1.15804590 01	3.210190-03	2.771300-04
10	7.56785960 00	7.56687350 00	9.860680-04	1.302970-04
11	4.94609270 00	4.94645560 00	-3.628420-04	-7.335930-05
12	3.23396790 00	3.23435770 00	-3.898090-04	-1.205360-04
13	2.11455920 00	2.11521980 00	-6.605980-04	-3.124040-04
14	1.38303330 00	1.38347070 00	-4.373980-04	-3.162600-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 20HE-80N2-50-5		
0	1.03796670 03	1.03870280 03	-7.360920-01	-7.091670-04
1	4.88103060 02	4.88533320 02	-4.302620-01	-8.814990-04
2	2.75163490 02	2.75332110 02	-1.686150-01	-6.127810-04
3	1.67941140 02	1.68057560 02	-1.164270-01	-6.932610-04
4	1.06200070 02	1.06251260 02	-5.119100-02	-4.820240-04
5	6.82397600 01	6.82833980 01	-4.363810-02	-6.394820-04
6	4.42073300 01	4.42376280 01	-3.029810-02	-6.853640-04
7	2.87546730 01	2.87792480 01	-2.457530-02	-8.546530-04
8	1.87500960 01	1.87651060 01	-1.500990-02	-8.005260-04
9	1.22386050 01	1.22512620 01	-1.265760-02	-1.034240-03
10	7.99525990 00	8.00459320 00	-9.333280-03	-1.167350-03
11	5.23524530 00	5.23235300 00	2.892280-03	5.524630-04
12	3.42290790 00	3.42120040 00	1.707540-03	4.988560-04
13	2.23841050 00	2.23737120 00	1.039380-03	4.643390-04
14	1.46411760 00	1.46334730 00	7.703920-04	5.261820-04
		RUN NO. 20HE-80N2-50-6		
0	6.63692440 02	6.63401360 02	2.910720-01	4.385640-04
1	3.51002560 02	3.50799090 02	2.034750-01	5.796950-04
2	2.08370630 02	2.08281580 02	8.904700-02	4.273490-04
3	1.30111370 02	1.30062140 02	4.922810-02	3.783530-04
4	8.31223180 01	8.30966860 01	2.563220-02	3.083670-04
5	5.36887790 01	5.36765880 01	1.219040-02	2.270560-04
6	3.48712800 01	3.48659310 01	5.348600-03	1.533810-04
7	2.27231530 01	2.27144830 01	8.670750-03	3.815820-04
8	1.48252880 01	1.48224530 01	2.834500-03	1.911940-04
9	9.68209960 00	9.68171060 00	3.890230-04	4.017960-05
10	6.32698670 00	6.32750600 00	-5.192590-04	-8.207050-05
11	4.13578660 00	4.13681190 00	-1.025380-03	-2.479280-04
12	2.70447680 00	2.70517100 00	-6.942040-04	-2.566870-04
13	1.76892370 00	1.76923090 00	-3.071510-04	-1.736370-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 2.852860-06

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.528618210 00	S2N	3.441980-09	SN	5.866840-05
B	7.134379290 00	S2B	7.190230-02	SB	2.681460-01
C	1.011525980 03	S2C	3.555290 03	SC	5.962620 01
D	4.771503890 03	S2D	2.713900 07	SD	5.209510 03
E	1.205873050 06	S2E	1.937530 10	SE	1.391950 05
P1	6.398054030 02	S2P1	5.927570-02	SP1	2.434660-01
P2	7.207665590 02	S2P2	7.650960-02	SP2	2.766040-01
P3	8.340891560 02	S2P3	1.113060-01	SP3	3.336250-01
P4	9.251869530 02	S2P4	2.078040-01	SP4	4.558550-01
P5	1.038702750 03	S2P5	5.569700-01	SP5	7.463040-01
P6	6.634013630 02	S2P6	6.448000-02	SP6	2.539290-01

COVARIANCES

S2BC	-1.515480 01	S2BD	1.227650 03
S2BE	-2.989660 04	S2BP1	2.290050-02
S2BP2	2.613290-02	S2BP3	1.360470-02
S2BP4	-8.173480-03	S2BP5	-5.708920-02
S2BP6	2.452830-02	S2BN	-1.400720-05
S2CD	-3.046930 05	S2CE	7.778330 06
S2CP1	-6.924510 00	S2CP2	-7.427770 00
S2CP3	-3.582310 00	S2CP4	3.143850 00
S2CP5	1.739800 01	S2CP6	-7.276680 00
S2CN	2.621390-03	S2DE	-7.153660 08
S2DP1	7.150700 02	S2DP2	7.246450 02
S2DP3	2.959150 02	S2DP4	-4.175500 02
S2DP5	-1.869240 03	S2DP6	7.389100 02
S2DN	-2.030870-01	S2EP1	-2.036910 04
S2EP2	-1.947350 04	S2EP3	-5.657190 03
S2EP4	1.623510 04	S2EP5	5.929340 04
S2EP6	-2.072970 04	S2EN	4.718720 00
S2P1P2	5.284750-02	S2P1P3	4.449220-02
S2P1P4	2.489090-02	S2P1P5	-1.743160-02
S2P1P6	5.096530-02	S2P1N	-3.349670-06
S2P2P3	6.349870-02	S2P2P4	5.423380-02
S2P2P5	2.699260-02	S2P2P6	5.603270-02
S2P2N	-4.050740-06	S2P3P4	1.157660-01
S2P3P5	1.435260-01	S2P3P6	4.988550-02
S2P3N	-1.948880-06	S2P4P5	2.832150-01
S2P4P6	3.230270-02	S2P4N	1.040980-06
S2P5P6	-7.430600-03	S2P5N	8.220870-06
S2P6N	-3.650100-06		

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 10HE-90N2-50-1		
0	6.2962665D 02	6.2921666D 02	4.09993D-01	6.51168D-04
1	3.3005468D 02	3.2982391D 02	2.30765D-01	6.99173D-04
2	1.9645161D 02	1.9637952D 02	7.20888D-02	3.66955D-04
3	1.2324292D 02	1.2321249D 02	3.04301D-02	2.46912D-04
4	7.9057978D 01	7.9046901D 01	1.10775D-02	1.40119D-04
5	5.1226835D 01	5.1220796D 01	6.03865D-03	1.17881D-04
6	3.3347875D 01	3.3345562D 01	2.31298D-03	6.93590D-05
7	2.1757659D 01	2.1758192D 01	-5.32903D-04	-2.44927D-05
8	1.4212323D 01	1.4213954D 01	-1.63096D-03	-1.14757D-04
9	9.2933701D 00	9.2913334D 00	2.03667D-03	2.19153D-04
10	6.0756521D 00	6.0756460D 00	6.10568D-06	1.00494D-06
11	3.9734134D 00	3.9736961D 00	-2.82762D-04	-7.11636D-05
12	2.5988796D 00	2.5992586D 00	-3.78919D-04	-1.45801D-04
13	1.6999924D 00	1.7003436D 00	-3.51240D-04	-2.06613D-04
		RUN NO. 10HE-90N2-50-2		
0	7.2189361D 02	7.2227006D 02	-3.76446D-01	-5.21471D-04
1	3.6505281D 02	3.6509748D 02	-4.46699D-02	-1.22366D-04
2	2.1408183D 02	2.1411993D 02	-3.81012D-02	-1.77975D-04
3	1.3348228D 02	1.3350406D 02	-2.17802D-02	-1.63169D-04
4	8.5412104D 01	8.5415685D 01	-3.58043D-03	-4.19194D-05
5	5.5276918D 01	5.5278390D 01	-1.47254D-03	-2.66394D-05
6	3.5961622D 01	3.5965582D 01	-3.95920D-03	-1.10095D-04
7	2.3456746D 01	2.3460760D 01	-4.01407D-03	-1.71126D-04
8	1.5319885D 01	1.5323801D 01	-3.91594D-03	-2.55612D-04
9	1.0019001D 01	1.0015964D 01	3.03703D-03	3.03127D-04
10	6.5505103D 00	6.5491685D 00	1.34173D-03	2.04828D-04
11	4.2835564D 00	4.2832752D 00	2.81143D-04	6.56330D-05
12	2.8017564D 00	2.8017108D 00	4.56521D-05	1.62941D-05
13	1.8327860D 00	1.8327610D 00	2.49557D-05	1.36163D-05

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K TIS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. 10HE-90N2-50-3		
0	8.2861157D 02	8.2843145D 02	1.80121D-01	2.17377D-04
1	4.0299638D 02	4.0286045D 02	1.35938D-01	3.37318D-04
2	2.3248641D 02	2.3242689D 02	5.95207D-02	2.56018D-04
3	1.4396485D 02	1.4394374D 02	2.11085D-02	1.46622D-04
4	9.1862881D 01	9.1826718D 01	3.61630D-02	3.93663D-04
5	5.9374741D 01	5.9348669D 01	2.60716D-02	4.39103D-04
6	3.8605243D 01	3.8589510D 01	1.57323D-02	4.07518D-04
7	2.5172645D 01	2.5164530D 01	8.11519D-03	3.22381D-04
8	1.6437458D 01	1.6433994D 01	3.46405D-03	2.10741D-04
9	1.0741840D 01	1.0740671D 01	1.16880D-03	1.08809D-04
10	7.0227849D 00	7.0226886D 00	9.62636D-05	1.37073D-05
11	4.5923607D 00	4.5928331D 00	-4.72347D-04	-1.02855D-04
12	3.0036108D 00	3.0041415D 00	-5.30640D-04	-1.76667D-04
13	1.9645957D 00	1.9651614D 00	-5.65666D-04	-2.87930D-04
14	1.2854261D 00	1.2855822D 00	-1.56083D-04	-1.21425D-04
		RUN NO. 10HE-90N2-50-4		
0	9.1728025D 02	9.1792528D 02	-6.45034D-01	-7.03202D-04
1	4.3277805D 02	4.3300663D 02	-2.28580D-01	-5.28169D-04
2	2.4644988D 02	2.4656186D 02	-1.11981D-01	-4.54375D-04
3	1.5180452D 02	1.5187754D 02	-7.30169D-02	-4.80993D-04
4	9.6629987D 01	9.6664378D 01	-3.43909D-02	-3.55903D-04
5	6.2392085D 01	6.2410159D 01	-1.80735D-02	-2.89677D-04
6	4.0552203D 01	4.0560163D 01	-7.96013D-03	-1.96293D-04
7	2.6432027D 01	2.6443195D 01	-1.11675D-02	-4.22498D-04
8	1.7257567D 01	1.7266887D 01	-9.31980D-03	-5.40041D-04
9	1.1276698D 01	1.1284263D 01	-7.56495D-03	-6.70848D-04
10	7.3803658D 00	7.3778333D 00	2.53255D-03	3.43147D-04
11	4.8261110D 00	4.8249913D 00	1.11962D-03	2.31992D-04
12	3.1564800D 00	3.1559528D 00	5.27148D-04	1.67005D-04
13	2.0649411D 00	2.0644520D 00	4.89036D-04	2.36828D-04
14	1.3509977D 00	1.3505298D 00	4.67869D-04	3.46314D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.I	REL. ERROR IN P
		RUN NO. 10HE-90N2-50-5		
0	1.0398544D 03	1.0393279D 03	5.26504D-01	5.06325D-04
1	4.7181110D 02	4.7188030D 02	-6.92058D-02	-1.46681D-04
2	2.6418718D 02	2.6420221D 02	-1.50243D-02	-5.68698D-05
3	1.6159007D 02	1.6162335D 02	-3.32825D-02	-2.05969D-04
4	1.0255552D 02	1.0256486D 02	-9.33749D-03	-9.10481D-05
5	6.6131909D 01	6.6132290D 01	-3.81184D-04	-5.76400D-06
6	4.2952687D 01	4.2952508D 01	1.79023D-04	4.16791D-06
7	2.8001045D 01	2.7994376D 01	6.66913D-03	2.38174D-04
8	1.8279087D 01	1.8276937D 01	2.14993D-03	1.17617D-04
9	1.1943663D 01	1.1943358D 01	3.05390D-04	2.55692D-05
10	7.8084527D 00	7.8083972D 00	5.55304D-05	7.11157D-06
11	5.1060674D 00	5.1064358D 00	-3.68437D-04	-7.21566D-05
12	3.3396749D 00	3.3399873D 00	-3.12405D-04	-9.35435D-05
13	2.1846102D 00	2.1848155D 00	-2.05324D-04	-9.39865D-05
14	1.4293672D 00	1.4292606D 00	1.06538D-04	7.45353D-05

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 1.18241D-06

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.52846661D 00	S2N	1.93619D-09	SN	4.40022D-05
B	3.70267255D 00	S2B	4.29994D-02	SB	2.07363D-01
C	1.22925458D 03	S2C	2.31018D 03	SC	4.80644D 01
D	-4.20843219D 02	S2D	1.86831D 07	SD	4.32240D 03
E	1.90336572D 06	S2E	1.38618D 10	SE	1.17736D 05
P1	6.29216660D 02	S2P1	3.49556D-02	SP1	1.86964D-01
P2	7.22270056D 02	S2P2	4.53462D-02	SP2	2.12947D-01
P3	8.28431448D 02	S2P3	6.05112D-02	SP3	2.45990D-01
P4	9.17925280D 02	S2P4	1.03316D-01	SP4	3.21428D-01
P5	1.03932788D 03	S2P5	2.76227D-01	SP5	5.25573D-01

COVARIANCES

S2BC	-9.46042D 00	S2BD	7.90878D 02
S2BE	-1.96581D 04	S2BP1	1.47764D-02
S2BP2	1.64508D-02	S2BP3	8.90372D-03
S2BP4	-3.14759D-03	S2BP5	-3.08754D-02
S2BN	-8.09174D-06	S2CD	-2.03952D 05
S2CE	5.31419D 06	S2CP1	-4.58032D 00
S2CP2	-4.81100D 00	S2CP3	-2.50244D 00
S2CP4	1.29454D 00	S2CP5	9.73130D 00

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

COVARIANCES

S2CN	1.58135D-03	S2DE	-5.02179D 08
S2DP1	4.81441D 02	S2DP2	4.78902D 02
S2DP3	2.22457D 02	S2DP4	-1.86225D 02
S2DP5	-1.06721D 03	S2DN	-1.26487D-01
S2EP1	-1.39415D 04	S2EP2	-1.30894D 04
S2EP3	-4.85765D 03	S2EP4	7.81298D 03
S2EP5	3.43970D 04	S2EN	2.98959D 00
S2P1P2	3.15945D-02	S2P1P3	2.63784D-02
S2P1P4	1.53614D-02	S2P1P5	-9.71106D-03
S2P1N	-2.10907D-06	S2P2P3	3.74754D-02
S2P2P4	3.23356D-02	S2P2P5	1.67517D-02
S2P2N	-2.48641D-06	S2P3P4	5.99230D-02
S2P3P5	7.16275D-02	S2P3N	-1.21387D-06
S2P4P5	1.37190D-01	S2P4N	4.10432D-07
S2P5N	4.27000D-06		

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-50-1		
0	4.89870400 02	4.89878730 02	-8.32379D-03	-1.69918D-05
1	2.67185030 02	2.67134240 02	5.07924D-02	1.90102D-04
2	1.62674510 02	1.62663660 02	1.08515D-02	6.67066D-05
3	1.03365070 02	1.03358520 02	6.54139D-03	6.32843D-05
4	6.67934240 01	6.67871320 01	6.29191D-03	9.41995D-05
5	4.34572780 01	4.34491870 01	8.09079D-03	1.86178D-04
6	2.83481890 01	2.83446340 01	3.55487D-03	1.25400D-04
7	1.85129070 01	1.85118200 01	1.08632D-03	5.86790D-05
8	1.20956630 01	1.20955070 01	1.56053D-04	1.29016D-05
9	7.90409040 00	7.90452650 00	-4.36084D-04	-5.51720D-05
10	5.16553340 00	5.16601880 00	-4.85408D-04	-9.39706D-05
11	3.37567270 00	3.37633340 00	-6.60730D-04	-1.95733D-04
12	2.20638300 00	2.20666680 00	-2.83837D-04	-1.28644D-04
13	1.44244630 00	1.44220790 00	2.38418D-04	1.65287D-04
		RUN NO. N2-50-2		
0	1.04004190 03	1.04062500 03	-5.83079D-01	-5.60630D-04
1	4.52169290 02	4.52528540 02	-3.59249D-01	-7.94502D-04
2	2.51291230 02	2.51394560 02	-1.03335D-01	-4.11216D-04
3	1.54119180 02	1.54181620 02	-6.24386D-02	-4.05132D-04
4	9.82114220 01	9.82434930 01	-3.20707D-02	-3.26547D-04
5	6.35351500 01	6.35532100 01	-1.80602D-02	-2.84255D-04
6	4.13539120 01	4.13642070 01	-1.02953D-02	-2.48956D-04
7	2.69820560 01	2.69895040 01	-7.44737D-03	-2.76012D-04
8	1.76227250 01	1.76281190 01	-5.39392D-03	-3.06078D-04
9	1.15195560 01	1.15184470 01	1.10959D-03	9.63220D-05
10	7.52783510 00	7.52749760 00	3.37504D-04	4.48341D-05
11	4.91968620 00	4.91963010 00	5.61466D-05	1.14126D-05
12	3.21576640 00	3.21530570 00	4.60655D-04	1.43249D-04
13	2.10175780 00	2.10142420 00	3.33529D-04	1.58690D-04
14	1.37382990 00	1.37342440 00	4.05558D-04	2.95202D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.	REL. ERROR IN P
		RUN NO. N2-50-3		
0	8.92030040 02	8.91202720 02	8.27327D-01	9.27465D-04
1	4.08556630 02	4.08360760 02	1.95864D-01	4.79404D-04
2	2.32053120 02	2.31955410 02	9.77152D-02	4.21090D-04
3	1.43522100 02	1.43482240 02	3.98526D-02	2.77676D-04
4	9.17550200 01	9.17328640 01	2.21554D-02	2.41462D-04
5	5.94346780 01	5.94215270 01	1.31508D-02	2.21265D-04
6	3.87071520 01	3.86963070 01	1.08455D-02	2.80193D-04
7	2.52604080 01	2.52544000 01	6.00799D-03	2.37842D-04
8	1.64984880 01	1.64963350 01	2.15269D-03	1.30478D-04
9	1.07799310 01	1.07793090 01	6.22110D-04	5.77100D-05
10	7.04447010 00	7.04455330 00	-8.32255D-05	-1.18143D-05
11	4.60367630 00	4.60402070 00	-3.44417D-04	-7.48134D-05
12	3.00867210 00	3.00903760 00	-3.65412D-04	-1.21453D-04
13	1.96625970 00	1.96661380 00	-3.54075D-04	-1.80075D-04
14	1.28501730 00	1.28531610 00	-2.98856D-04	-2.32569D-04
		RUN NO. N2-50-4		
0	7.48540230 02	7.48597450 02	-5.72213D-02	-7.64439D-05
1	3.62788060 02	3.62758970 02	2.90869D-02	8.01761D-05
2	2.10849160 02	2.10844360 02	4.79621D-03	2.27471D-05
3	1.31574410 02	1.31582500 02	-8.09039D-03	-6.14891D-05
4	8.44122310 01	8.44184320 01	-6.20112D-03	-7.34623D-05
5	5.47552720 01	5.47603390 01	-5.06746D-03	-9.25474D-05
6	3.56758780 01	3.56813050 01	-5.42631D-03	-1.52100D-04
7	2.33023920 01	2.32921600 01	1.02316D-02	4.39080D-04
8	1.52208360 01	1.52160200 01	4.81679D-03	3.16460D-04
9	9.94508600 00	9.94307100 00	2.01497D-03	2.02610D-04
10	6.49862210 00	6.49813950 00	4.82635D-04	7.42673D-05
11	4.24671010 00	4.24692710 00	-2.17000D-04	-5.10983D-05
12	2.77525890 00	2.77565580 00	-3.96889D-04	-1.43010D-04
13	1.81378510 00	1.81408250 00	-2.97397D-04	-1.63965D-04

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

R	P, OBS., ATM	P, CAL., ATM	P,OBS.-P,CAL.I	REL. ERROR IN P
		RUN NO. N2-50-5		
0	6.1975706D 02	6.1985963D 02	-1.02574D-01	-1.65507D-04
1	3.1775123D 02	3.1771381D 02	3.74233D-02	1.17776D-04
2	1.8884479D 02	1.8884482D 02	-3.15713D-05	-1.67181D-07
3	1.1887018D 02	1.1887537D 02	-5.18813D-03	-4.36453D-05
4	7.6523765D 01	7.6527234D 01	-3.46904D-03	-4.53328D-05
5	4.9707105D 01	4.9710243D 01	-3.13817D-03	-6.31333D-05
6	3.2404992D 01	3.2409021D 01	-4.02883D-03	-1.24327D-04
7	2.1156141D 01	2.1160936D 01	-4.79536D-03	-2.26665D-04
8	1.3820560D 01	1.3825036D 01	-4.47576D-03	-3.23848D-04
9	9.0355698D 00	9.0344418D 00	1.12803D-03	1.24844D-04
10	5.9044502D 00	5.9043963D 00	5.39619D-05	9.13920D-06
11	3.8586828D 00	3.8588960D 00	-2.13236D-04	-5.52614D-05
12	2.5221065D 00	2.5220533D 00	5.31990D-05	2.10931D-05
13	1.6487009D 00	1.6483354D 00	3.65533D-04	2.21709D-04

SUM OF THE WEIGHTED SQUARES OF THE RESIDUALS OF P 8.02264D-07

	PARAMETERS		VARIANCES		STANDARD ERRORS
N	1.53007642D 00	S2N	2.10517D-09	SN	4.58821D-05
B	-4.87876824D-01	S2B	7.81031D-02	SB	2.79469D-01
C	1.36874293D 03	S2C	9.76886D 03	SC	9.88376D 01
D	1.13968674D 04	S2D	2.28378D 08	SD	1.51122D 04
E	1.58391310D 06	S2E	9.25968D 11	SE	9.62272D 05
F	2.97592202D 07	S2F	4.68214D 14	SF	2.16382D 07
P1	4.89878728D 02	S2P1	1.16604D-02	SP1	1.07983D-01
P2	1.04062498D 03	S2P2	2.62625D-01	SP2	5.12470D-01
P3	8.91202718D 02	S2P3	7.78971D-02	SP3	2.79101D-01
P4	7.48597454D 02	S2P4	5.56433D-02	SP4	2.35888D-01
P5	6.19859629D 02	S2P5	3.14904D-02	SP5	1.77455D-01

COVARIANCES

S2BC	-2.64552D 01	S2BD	3.77582D 03
S2BE	-2.23103D 05	S2BF	4.71093D 06
S2BP1	3.93757D-03	S2BP2	2.81217D-02
S2BP3	-1.52014D-02	S2BP4	-1.93361D-02
S2BP5	-8.78143D-03	S2BN	-1.16330D-05
S2CD	-1.46672D 06	S2CE	8.98381D 07
S2CF	-1.93896D 09	S2CP1	-1.42818D 00
S2CP2	-1.33811D 01	S2CP3	6.51602D 00

TABLE 14. - EXPERIMENTAL PRESSURES, CALCULATED PRESSURES, PARAMETERS, STANDARD ERRORS, VARIANCES, AND COVARIANCES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

COVARIANCES

S2CP4	9.27622D 00	S2CP5	4.62417D 00
S2CN	3.57504D-03	S2DE	-1.43819D 10
S2DF	3.16334D 11	S2DP1	1.64235D 02
S2DP2	2.51815D 03	S2DP3	-1.09036D 03
S2DP4	-1.71341D 03	S2DP5	-9.37911D 02
S2DN	-4.88635D-01	S2EF	-2.06950D 13
S2EP1	-4.22650D 03	S2EP2	-1.89367D 05
S2EP3	7.06654D 04	S2EP4	1.23557D 05
S2EP5	7.36546D 04	S2EN	2.80128D 01
S2FP1	-4.54710D 04	S2FP2	4.87367D 06
S2FP3	-1.50017D 06	S2FP4	-2.96146D 06
S2FP5	-1.88660D 06	S2FN	-5.83024D 02
S2P1P2	-1.07734D-02	S2P1P3	4.24295D-03
S2P1P4	1.17714D-02	S2P1P5	1.30836D-02
S2P1N	-4.78595D-07	S2P2P3	8.35338D-02
S2P2P4	3.17019D-03	S2P2P5	-1.87522D-02
S2P2N	-3.15104D-06	S2P3P4	4.38858D-02
S2P3P5	2.18926D-02	S2P3N	1.88530D-06
S2P4P5	3.35956D-02	S2P4N	2.04550D-06
S2P5N	8.84714D-07		

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	4.08576D-10	2.32411D-07	-1.63013D-05
2.0000 00	9.02793D-10	1.77227D-07	-1.13048D-05
5.0000 00	4.21693D-09	-3.65536D-07	2.97825D-05
1.0000 01	2.12532D-08	-1.51734D-06	1.09552D-04
2.5000 01	1.67839D-07	-3.46599D-06	1.89829D-04
5.0000 01	7.54705D-07	6.36362D-07	-3.24166D-04
7.5000 01	2.21309D-06	1.20829D-05	-1.42093D-03
1.0000 02	5.19954D-06	2.77383D-05	-2.78456D-03
1.2500 02	1.00544D-05	4.47727D-05	-4.14327D-03
1.5000 02	1.67117D-05	6.08804D-05	-5.28249D-03
2.0000 02	3.43318D-05	8.36430D-05	-6.30863D-03
2.5000 02	5.76446D-05	8.70228D-05	-5.11512D-03
3.0000 02	9.22264D-05	6.77043D-05	-1.52275D-03
3.5000 02	1.49566D-04	2.64851D-05	4.24335D-03
4.0000 02	2.42478D-04	-3.29559D-05	1.16797D-02
4.5000 02	3.79119D-04	-1.04988D-04	2.00987D-02
5.0000 02	5.58485D-04	-1.82722D-04	2.86982D-02
6.0000 02	9.93252D-04	-3.24379D-04	4.29480D-02
7.0000 02	1.42237D-03	-3.93903D-04	4.73312D-02
8.0000 02	1.94776D-03	-3.28241D-04	3.49938D-02
9.0000 02	3.41288D-03	-6.91374D-05	-3.15029D-04
1.0000 03	8.03330D-03	4.35243D-04	-6.41018D-02

PRESSURE, ATM	S2DP
1.0000 00	3.86723D-04
2.0000 00	2.61641D-04
5.0000 00	-7.26024D-04
1.0000 01	-2.58847D-03
2.5000 01	-4.01000D-03
5.0000 01	9.74639D-03
7.5000 01	3.72738D-02
1.0000 02	7.01566D-02
1.2500 02	1.01291D-01
1.5000 02	1.25163D-01
2.0000 02	1.36276D-01
2.5000 02	8.57213D-02
3.0000 02	-2.89740D-02
3.5000 02	-1.99491D-01
4.0000 02	-4.10158D-01
4.5000 02	-6.40504D-01
5.0000 02	-8.67143D-01
6.0000 02	-1.20901D 00
7.0000 02	-1.23359D 00
8.0000 02	-7.47599D-01
9.0000 02	4.24042D-01
1.0000 03	2.43473D 00

TABLE 15.- VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	7.58201D-10	4.11667D-07	-3.03632D-05
2.0000 00	1.83395D-09	2.90217D-07	-1.90633D-05
5.0000 00	9.45257D-09	-7.54733D-07	6.40786D-05
1.0000 01	4.59186D-08	-2.86520D-06	2.18044D-04
2.5000 01	3.44290D-07	-6.04471D-06	3.27570D-04
5.0000 01	1.55615D-06	3.11085D-06	-8.24439D-04
7.5000 01	4.54385D-06	2.59009D-05	-3.09933D-03
1.0000 02	1.04439D-05	5.57517D-05	-5.80184D-03
1.2500 02	1.96988D-05	8.69870D-05	-8.35880D-03
1.5000 02	3.20416D-05	1.15156D-04	-1.03363D-02
2.0000 02	6.41956D-05	1.50098D-04	-1.14284D-02
2.5000 02	1.08214D-04	1.45339D-04	-7.80424D-03
3.0000 02	1.77174D-04	9.71479D-05	6.00343D-04
3.5000 02	2.92676D-04	9.59418D-06	1.30478D-02
4.0000 02	4.74717D-04	-1.08219D-04	2.82967D-02
4.5000 02	7.31530D-04	-2.44138D-04	4.48136D-02
5.0000 02	1.05428D-03	-3.84363D-04	6.09211D-02
6.0000 02	1.79551D-03	-6.19829D-04	8.50524D-02
7.0000 02	2.53488D-03	-7.01200D-04	8.74816D-02
8.0000 02	3.62266D-03	-5.25489D-04	5.64468D-02
9.0000 02	6.68472D-03	-4.64199D-06	-1.79634D-02
1.0000 03	1.54069D-02	9.33819D-04	-1.43804D-01

PRESSURE, ATM	S2DP
1.0000 00	7.79592D-04
2.0000 00	4.77712D-04
5.0000 00	-1.67612D-03
1.0000 01	-5.55494D-03
2.5000 01	-7.38026D-03
5.0000 01	2.51057D-02
7.5000 01	8.58097D-02
1.0000 02	1.54958D-01
1.2500 02	2.16551D-01
1.5000 02	2.58704D-01
2.0000 02	2.54966D-01
2.5000 02	1.12480D-01
3.0000 02	-1.65276D-01
3.5000 02	-5.52068D-01
4.0000 02	-1.00758D 00
4.5000 02	-1.48358D 00
5.0000 02	-1.92814D 00
6.0000 02	-2.51341D 00
7.0000 02	-2.36286D 00
8.0000 02	-1.12339D 00
9.0000 02	1.50021D 00
1.0000 03	5.74611D 00

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.000D 00	1.21557D-09	6.92802D-07	-5.33490D-05
2.000D 00	2.96715D-09	4.49241D-07	-3.00694D-05
5.000D 00	1.58566D-08	-1.44778D-06	1.27381D-04
1.000D 01	7.75811D-08	-5.18428D-06	4.07197D-04
2.500D 01	5.75158D-07	-1.00325D-05	5.31493D-04
5.000D 01	2.65220D-06	8.44844D-06	-1.82249D-03
7.500D 01	7.91446D-06	5.08741D-05	-6.20637D-03
1.000D 02	1.82219D-05	1.04496D-04	-1.12137D-02
1.250D 02	3.40815D-05	1.58675D-04	-1.57236D-02
1.500D 02	5.48563D-05	2.05334D-04	-1.89181D-02
2.000D 02	1.08643D-04	2.55083D-04	-1.93738D-02
2.500D 02	1.85310D-04	2.29538D-04	-1.05910D-02
3.000D 02	3.11432D-04	1.26197D-04	7.04306D-03
3.500D 02	5.24133D-04	-4.36321D-05	3.16704D-02
4.000D 02	8.51769D-04	-2.60473D-04	6.06000D-02
4.500D 02	1.29860D-03	-5.00574D-04	9.07414D-02
5.000D 02	1.84064D-03	-7.38520D-04	1.18890D-01
6.000D 02	3.03670D-03	-1.10748D-03	1.56845D-01
7.000D 02	4.26741D-03	-1.16060D-03	1.51843D-01
8.000D 02	6.33551D-03	-8.01703D-04	8.53636D-02
9.000D 02	1.20365D-02	1.52101D-04	-5.69024D-02
1.000D 03	2.70259D-02	1.77333D-03	-2.85529D-01

PRESSURE, ATM	S2DP
1.000D 00	1.46990D-03
2.000D 00	8.11066D-04
5.000D 00	-3.54529D-03
1.000D 01	-1.10931D-02
2.500D 01	-1.27481D-02
5.000D 01	5.67172D-02
7.500D 01	1.79945D-01
1.000D 02	3.14632D-01
1.250D 02	4.27690D-01
1.500D 02	4.95476D-01
2.000D 02	4.40285D-01
2.500D 02	9.98170D-02
3.000D 02	-5.03088D-01
3.500D 02	-1.30167D 00
4.000D 02	-2.20494D 00
4.500D 02	-3.11093D 00
5.000D 02	-3.91542D 00
6.000D 02	-4.82209D 00
7.000D 02	-4.20319D 00
8.000D 02	-1.47424D 00
9.000D 02	3.81164D 00
1.000D 03	1.19810D 01

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.26793D-09	1.30794D-06	-1.93274D-04
2.0000 00	2.87159D-09	6.31915D-07	-7.84143D-05
5.0000 00	1.67907D-08	-3.41221D-06	5.42901D-04
1.0000 01	8.35398D-08	-9.77412D-06	1.39044D-03
2.5000 01	5.76312D-07	-7.26736D-06	-1.11584D-04
5.0000 01	3.22940D-06	5.53415D-05	-1.21359D-02
7.5000 01	1.00616D-05	1.40898D-04	-2.59347D-02
1.0000 02	2.09119D-05	2.06049D-04	-3.34021D-02
1.2500 02	3.51133D-05	2.27057D-04	-3.05659D-02
1.5000 02	5.43765D-05	1.95434D-04	-1.65395D-02
2.0000 02	1.26123D-04	-1.02551D-05	3.90041D-02
2.5000 02	2.66684D-04	-3.28484D-04	1.11723D-01
3.0000 02	4.68859D-04	-6.44197D-04	1.75446D-01
3.5000 02	7.00924D-04	-8.54619D-04	2.08312D-01
4.0000 02	9.61946D-04	-8.89405D-04	1.96563D-01
4.5000 02	1.31938D-03	-7.16559D-04	1.35398D-01
5.0000 02	1.89473D-03	-3.40789D-04	2.83072D-02
6.0000 02	4.07940D-03	8.49583D-04	-2.76463D-01
7.0000 02	7.23245D-03	2.12900D-03	-5.77863D-01
8.0000 02	9.72224D-03	2.73222D-03	-6.92827D-01
9.0000 02	1.26328D-02	1.82409D-03	-4.25832D-01
1.0000 03	2.84863D-02	-1.44027D-03	4.10597D-01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	1.23711D-02	-2.50157D-01
2.0000 00	4.76583D-03	-9.25173D-02
5.0000 00	-3.50508D-02	7.13449D-01
1.0000 01	-8.60280D-02	1.69538D 00
2.5000 01	3.74644D-02	-1.20607D 00
5.0000 01	8.48674D-01	-1.81863D 01
7.5000 01	1.69174D 00	-3.45468D 01
1.0000 02	2.01034D 00	-3.85295D 01
1.2500 02	1.55375D 00	-2.51953D 01
1.5000 02	2.94680D-01	5.48029D 00
2.0000 02	-4.06038D 00	1.04293D 02
2.5000 02	-9.29078D 00	2.15984D 02
3.0000 02	-1.33901D 01	2.94907D 02
3.5000 02	-1.47574D 01	3.05897D 02
4.0000 02	-1.24571D 01	2.29758D 02
4.5000 02	-6.26376D 00	6.39264D 01
5.0000 02	3.40378D 00	-1.79266D 02
6.0000 02	2.89507D 01	-7.90562D 02
7.0000 02	5.23719D 01	-1.31375D 03
8.0000 02	5.87060D 01	-1.38973D 03
9.0000 02	3.22898D 01	-6.46968D 02
1.0000 03	-4.17652D 01	1.26492D 03

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	3.766040-09	4.120130-06	-6.313540-04
2.0000 00	8.124530-09	2.338340-06	-3.112130-04
5.0000 00	4.425500-08	-9.005260-06	1.505370-03
1.0000 01	2.192130-07	-2.683430-05	3.967520-03
2.5000 01	1.526750-06	-1.726490-05	-8.696280-04
5.0000 01	8.783250-06	1.649840-04	-3.681860-02
7.5000 01	2.725940-05	4.036090-04	-7.604310-02
1.0000 02	5.599860-05	5.712660-04	-9.404360-02
1.2500 02	9.376570-05	6.021280-04	-7.968200-02
1.5000 02	1.468120-04	4.771740-04	-3.158290-02
2.0000 02	3.509020-04	-1.696700-04	1.420210-01
2.5000 02	7.401560-04	-1.086420-03	3.533190-01
3.0000 02	1.272500-03	-1.919650-03	5.205730-01
3.5000 02	1.868490-03	-2.378790-03	5.811140-01
4.0000 02	2.574740-03	-2.288190-03	5.010390-01
4.5000 02	3.630850-03	-1.594340-03	2.754070-01
5.0000 02	5.376100-03	-3.515380-04	-7.595790-02
6.0000 02	1.163220-02	3.161300-03	-9.868340-01
7.0000 02	1.968690-02	6.517020-03	-1.787920 00
8.0000 02	2.542470-02	7.580970-03	-1.956370 00
9.0000 02	3.430470-02	4.202330-03	-9.769770-01
1.0000 03	8.219270-02	-5.584340-03	1.614140 00

PRESSURE, ATM	S2DP	S2EP
1.0000 00	4.217420-02	-8.819830-01
2.0000 00	1.985820-02	-3.979930-01
5.0000 00	-1.021630-01	2.171550 00
1.0000 01	-2.572260-01	5.266020 00
2.5000 01	1.490920-01	-4.616570 00
5.0000 01	2.670170 00	-5.937280 01
7.5000 01	5.142390 00	-1.087070 02
1.0000 02	5.818640 00	-1.143640 02
1.2500 02	3.979700 00	-6.190610 01
1.5000 02	-3.584050-01	4.632420 01
2.0000 02	-1.432250 01	3.728790 02
2.5000 02	-2.990000 01	7.142110 02
3.0000 02	-4.062780 01	9.185510 02
3.5000 02	-4.179340 01	8.796460 02
4.0000 02	-3.110400 01	5.509010 02
4.5000 02	-8.630220 00	-5.718500 01
5.0000 02	2.357540 01	-8.869110 02
6.0000 02	1.019400 02	-2.815670 03
7.0000 02	1.655080 02	-4.261810 03
8.0000 02	1.702180 02	-4.132830 03
9.0000 02	7.330500 01	-1.379990 03
1.0000 03	-1.633340 02	4.924030 03

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.000D 00	2.81279D-09	2.84106D-06	-4.54883D-04
2.000D 00	6.72199D-09	1.37312D-06	-1.82455D-04
5.000D 00	3.93496D-08	-7.21497D-06	1.25031D-03
1.000D 01	1.88014D-07	-2.00385D-05	3.06784D-03
2.500D 01	1.29062D-06	-8.56008D-06	-1.54557D-03
5.000D 01	7.35747D-06	1.35369D-04	-3.08587D-02
7.500D 01	2.21239D-05	3.12468D-04	-6.05296D-02
1.000D 02	4.45478D-05	4.23491D-04	-7.07148D-02
1.250D 02	7.45147D-05	4.20810D-04	-5.32786D-02
1.500D 02	1.18288D-04	2.95190D-04	-8.44529D-03
2.000D 02	2.88233D-04	-2.46341D-04	1.38580D-01
2.500D 02	5.96686D-04	-9.43809D-04	3.02437D-01
3.000D 02	9.96974D-04	-1.51002D-03	4.14724D-01
3.500D 02	1.44626D-03	-1.73238D-03	4.28666D-01
4.000D 02	2.02618D-03	-1.50503D-03	3.24805D-01
4.500D 02	2.95039D-03	-8.23945D-04	1.08548D-01
5.000D 02	4.45072D-03	2.33337D-04	-1.95418D-01
6.000D 02	9.33214D-03	2.89929D-03	-9.07089D-01
7.000D 02	1.48528D-02	5.07881D-03	-1.43723D 00
8.000D 02	1.89623D-02	5.24041D-03	-1.39675D 00
9.000D 02	2.86671D-02	1.99005D-03	-4.38997D-01
1.000D 03	7.24509D-02	-5.83154D-03	1.71970D 00

PRESSURE, ATM	S2DP	S2EP
1.000D 00	3.17764D-02	-6.87639D-01
2.000D 00	1.20070D-02	-2.43825D-01
5.000D 00	-8.84277D-02	1.94409D 00
1.000D 01	-2.07053D-01	4.36512D 00
2.500D 01	1.84684D-01	-5.42907D 00
5.000D 01	2.31833D 00	-5.34067D 01
7.500D 01	4.23177D 00	-9.22762D 01
1.000D 02	4.45508D 00	-8.87528D 01
1.250D 02	2.45808D 00	-3.21912D 01
1.500D 02	-1.63326D 00	7.25129D 01
2.000D 02	-1.37798D 01	3.64967D 02
2.500D 02	-2.61063D 01	6.40141D 02
3.000D 02	-3.30285D 01	7.62785D 02
3.500D 02	-3.09568D 01	6.50485D 02
4.000D 02	-1.86686D 01	2.84035D 02
4.500D 02	2.96295D 00	-3.15509D 02
5.000D 02	3.14754D 01	-1.07012D 03
6.000D 02	9.44450D 01	-2.66154D 03
7.000D 02	1.36825D 02	-3.61960D 03
8.000D 02	1.24620D 02	-3.07146D 03
9.000D 02	2.79942D 01	-2.59726D 02
1.000D 03	-1.77179D 02	5.42254D 03

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	2.099140-08	2.20089D-05	-3.58038D-03
2.0000 00	4.833600-08	1.24154D-05	-1.69294D-03
5.0000 00	2.707490-07	-4.90575D-05	8.70617D-03
1.0000 01	1.294970-06	-1.41936D-04	2.21643D-02
2.5000 01	8.894820-06	-6.43491D-05	-1.03165D-02
5.0000 01	5.055070-05	9.53741D-04	-2.20171D-01
7.5000 01	1.513920-04	2.18908D-03	-4.28153D-01
1.0000 02	3.037280-04	2.92465D-03	-4.89514D-01
1.2500 02	5.091050-04	2.82745D-03	-3.47738D-01
1.5000 02	8.145700-04	1.84926D-03	-9.00878D-03
2.0000 02	2.005080-03	-2.10304D-03	1.05939D 00
2.5000 02	4.114200-03	-6.95869D-03	2.19499D 00
3.0000 02	6.789220-03	-1.06387D-02	2.90174D 00
3.5000 02	9.836850-03	-1.17094D-02	2.86698D 00
4.0000 02	1.397940-02	-9.56491D-03	1.98969D 00
4.5000 02	2.071050-02	-4.33427D-03	3.48398D-01
5.0000 02	3.140270-02	3.30840D-03	-1.85006D 00
6.0000 02	6.428110-02	2.15497D-02	-6.73862D 00
7.0000 02	9.936200-02	3.54293D-02	-1.00983D 01
8.0000 02	1.266770-01	3.52673D-02	-9.45477D 00
9.0000 02	1.944860-01	1.28596D-02	-2.75697D 00
1.0000 03	4.716890-01	-3.81762D-02	1.15618D 01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	2.551410-01	-5.57086D 00
2.0000 00	1.146070-01	-2.35295D 00
5.0000 00	-6.310570-01	1.41139D 01
1.0000 01	-1.531040 00	3.26499D 01
2.5000 01	1.295390 00	-3.99828D 01
5.0000 01	1.687210 01	-3.96008D 02
7.5000 01	3.046170 01	-6.73584D 02
1.0000 02	3.114880 01	-6.22175D 02
1.2500 02	1.524570 01	-1.68465D 02
1.5000 02	-1.592010 01	6.40162D 02
2.0000 02	-1.052420 02	2.81848D 03
2.5000 02	-1.911480 02	4.74268D 03
3.0000 02	-2.326300 02	5.40779D 03
3.5000 02	-2.056620 02	4.26287D 03
4.0000 02	-1.047750 02	1.23498D 03
4.5000 02	6.019670 01	-3.36301D 03
5.0000 02	2.687700 02	-8.95530D 03
6.0000 02	7.068190 02	-2.01565D 04
7.0000 02	9.752700 02	-2.61624D 04
8.0000 02	8.547620 02	-2.12612D 04
9.0000 02	1.663190 02	-8.49631D 02
1.0000 03	-1.224910 03	3.85023D 04

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	2.35612D-08	2.51469D-05	-4.22915D-03
2.0000 00	5.45015D-08	1.31687D-05	-1.87850D-03
5.0000 00	3.09931D-07	-5.86823D-05	1.07302D-02
1.0000 01	1.48088D-06	-1.65214D-04	2.65736D-02
2.5000 01	1.01648D-05	-5.58894D-05	-1.61027D-02
5.0000 01	5.87000D-05	1.16525D-03	-2.73662D-01
7.5000 01	1.74887D-04	2.58588D-03	-5.15637D-01
1.0000 02	3.48322D-04	3.34187D-03	-5.62955D-01
1.2500 02	5.86642D-04	3.05532D-03	-3.51644D-01
1.5000 02	9.54123D-04	1.70682D-03	1.01002D-01
2.0000 02	2.39971D-03	-3.22669D-03	1.44211D 00
2.5000 02	4.86198D-03	-8.82566D-03	2.75801D 00
3.0000 02	7.86978D-03	-1.25460D-02	3.43279D 00
3.5000 02	1.13938D-02	-1.28281D-02	3.12775D 00
4.0000 02	1.65801D-02	-9.21667D-03	1.79020D 00
4.5000 02	2.52393D-02	-2.14105D-03	-4.14186D-01
5.0000 02	3.86436D-02	7.38837D-03	-3.18260D 00
6.0000 02	7.70842D-02	2.84085D-02	-8.91006D 00
7.0000 02	1.14953D-01	4.26568D-02	-1.23812D 01
8.0000 02	1.45055D-01	4.01812D-02	-1.10050D 01
9.0000 02	2.23019D-01	1.33079D-02	-2.82979D 00
1.0000 03	5.15956D-01	-4.34179D-02	1.35015D 01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	3.10720D-01	-6.89322D 00
2.0000 00	1.30507D-01	-2.66119D 00
5.0000 00	-8.01287D-01	1.82646D 01
1.0000 01	-1.89053D 00	4.08722D 01
2.5000 01	1.88050D 00	-5.82052D 01
5.0000 01	2.15007D 01	-5.15960D 02
7.5000 01	3.75359D 01	-8.44579D 02
1.0000 02	3.61312D 01	-7.20110D 02
1.2500 02	1.31343D 01	-6.20534D 01
1.5000 02	-2.89260D 01	1.04582D 03
2.0000 02	-1.42882D 02	3.86807D 03
2.5000 02	-2.42995D 02	6.11134D 03
3.0000 02	-2.77439D 02	6.48751D 03
3.5000 02	-2.20311D 02	4.40912D 03
4.0000 02	-7.11655D 01	-4.58683D 01
4.5000 02	1.51543D 02	-6.31732D 03
5.0000 02	4.17921D 02	-1.35619D 04
6.0000 02	9.39964D 02	-2.70951D 04
7.0000 02	1.21672D 03	-3.31551D 04
8.0000 02	1.01415D 03	-2.55522D 04
9.0000 02	1.59018D 02	2.32674D 02
1.0000 03	-1.46711D 03	4.72427D 04

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	1.658740-08	1.650170-05	-2.856250-03
2.0000 00	4.063700-08	8.358560-06	-1.221990-03
5.0000 00	2.368040-07	-3.978190-05	7.449360-03
1.0000 01	1.108390-06	-1.107010-04	1.827990-02
2.5000 01	7.481250-06	-3.557560-05	-1.120380-02
5.0000 01	4.165450-05	7.760600-04	-1.857140-01
7.5000 01	1.211270-04	1.691440-03	-3.421570-01
1.0000 02	2.392710-04	2.124390-03	-3.567510-01
1.2500 02	4.050900-04	1.833950-03	-1.897110-01
1.5000 02	6.652670-04	8.339790-04	1.395980-01
2.0000 02	1.667370-03	-2.533440-03	1.055320 00
2.5000 02	3.296670-03	-6.035280-03	1.867250 00
3.0000 02	5.276300-03	-7.973330-03	2.162710 00
3.5000 02	7.784470-03	-7.473670-03	1.761280 00
4.0000 02	1.170030-02	-4.469260-03	6.930910-01
4.5000 02	1.801890-02	5.390170-04	-8.712750-01
5.0000 02	2.708790-02	6.737740-03	-2.689520 00
6.0000 02	5.018300-02	1.899160-02	-6.042480 00
7.0000 02	7.163230-02	2.531430-02	-7.458520 00
8.0000 02	9.721000-02	2.025830-02	-5.499330 00
9.0000 02	1.750910-01	9.810440-05	7.900210-01
1.0000 03	4.139020-01	-3.749440-02	1.198590 01

PRESSURE, ATM	S2DP	S2EP
1.0000 00	2.154790-01	-4.833980 00
2.0000 00	8.684510-02	-1.769860 00
5.0000 00	-5.707860-01	1.321110 01
1.0000 01	-1.332790 00	2.900240 01
2.5000 01	1.349450 00	-4.407270 01
5.0000 01	1.497030 01	-3.683880 02
7.5000 01	2.539230 01	-5.794090 02
1.0000 02	2.282680 01	-4.446330 02
1.2500 02	4.782420 00	8.023320 01
1.5000 02	-2.623790 01	9.138000 02
2.0000 02	-1.050270 02	2.890850 03
2.5000 02	-1.658530 02	4.216450 03
3.0000 02	-1.736210 02	4.010110 03
3.5000 02	-1.152910 02	2.000230 03
4.0000 02	3.074470 00	-1.576140 03
4.5000 02	1.631580 02	-6.166120 03
5.0000 02	3.407720 02	-1.107480 04
6.0000 02	6.479430 02	-1.903280 04
7.0000 02	7.444750 02	-2.048800 04
8.0000 02	4.979070 02	-1.186620 04
9.0000 02	-1.776760 02	9.103670 03
1.0000 03	-1.332590 03	4.371440 04

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	8.46863D-09	9.16993D-06	-1.65175D-03
2.0000 00	1.99282D-08	4.20282D-06	-6.16451D-04
5.0000 00	1.17166D-07	-2.37904D-05	4.63240D-03
1.0000 01	5.57570D-07	-6.32148D-05	1.08046D-02
2.5000 01	3.82967D-06	-5.45874D-06	-9.98661D-03
5.0000 01	2.28156D-05	4.92511D-04	-1.20241D-01
7.5000 01	6.70917D-05	1.01829D-03	-2.10869D-01
1.0000 02	1.32132D-04	1.21243D-03	-2.03242D-01
1.2500 02	2.27263D-04	9.41440D-04	-7.59305D-02
1.5000 02	3.85414D-04	2.38065D-04	1.52389D-01
2.0000 02	9.98996D-04	-1.89493D-03	7.39738D-01
2.5000 02	1.93752D-03	-3.85279D-03	1.19267D 00
3.0000 02	3.03914D-03	-4.60102D-03	1.25542D 00
3.5000 02	4.55892D-03	-3.72785D-03	8.49202D-01
4.0000 02	7.15907D-03	-1.35022D-03	3.54670D-02
4.5000 02	1.13989D-02	2.09808D-03	-1.04553D 00
5.0000 02	1.72859D-02	6.05101D-03	-2.22499D 00
6.0000 02	3.11904D-02	1.32081D-02	-4.23306D 00
7.0000 02	4.26626D-02	1.62422D-02	-4.90818D 00
8.0000 02	5.50434D-02	1.25011D-02	-3.53691D 00
9.0000 02	9.29762D-02	3.91597D-04	2.93656D-01
1.0000 03	2.07854D-01	-2.09350D-02	6.79122D 00

PRESSURE, ATM	S2DP	S2EP
1.0000 00	1.28456D-01	-2.91411D 00
2.0000 00	4.43938D-02	-8.73808D-01
5.0000 00	-3.66323D-01	8.62399D 00
1.0000 01	-8.10981D-01	1.77853D 01
2.5000 01	1.10015D 00	-3.49707D 01
5.0000 01	9.93616D 00	-2.49197D 02
7.5000 01	1.59952D 01	-3.69895D 02
1.0000 02	1.28915D 01	-2.42863D 02
1.2500 02	-6.42560D-01	1.51288D 02
1.5000 02	-2.23894D 01	7.42525D 02
2.0000 02	-7.36931D 01	2.04413D 03
2.5000 02	-1.07036D 02	2.74498D 03
3.0000 02	-1.00388D 02	2.28922D 03
3.5000 02	-4.87082D 01	5.93342D 02
4.0000 02	4.01545D 01	-2.08036D 03
4.5000 02	1.51464D 02	-5.29295D 03
5.0000 02	2.68313D 02	-8.55790D 03
6.0000 02	4.55702D 02	-1.34731D 04
7.0000 02	4.98919D 02	-1.39557D 04
8.0000 02	3.31487D 02	-8.20244D 03
9.0000 02	-8.38920D 01	4.76961D 03
1.0000 03	-7.64989D 02	2.54033D 04

TABLE 15. - VARIANCES AND COVARIANCES FOR INTEGRAL PRESSURES.
50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	S2P	S2BP	S2CP
1.0000 00	6.51734D-09	1.16213D-05	-3.32053D-03
2.0000 00	1.40649D-08	4.13001D-06	-9.38672D-04
5.0000 00	8.70537D-08	-3.12206D-05	9.26880D-03
1.0000 01	4.02530D-07	-6.56335D-05	1.65032D-02
2.5000 01	2.92554D-06	1.03361D-04	-5.05986D-02
5.0000 01	1.84733D-05	6.85905D-04	-2.23583D-01
7.5000 01	4.75698D-05	8.06066D-04	-1.85979D-01
1.0000 02	1.01284D-04	2.01768D-04	1.20039D-01
1.2500 02	2.06558D-04	-8.74745D-04	5.67044D-01
1.5000 02	3.64727D-04	-1.98144D-03	9.70953D-01
2.0000 02	7.68570D-04	-2.82667D-03	1.10291D 00
2.5000 02	1.46237D-03	-1.07208D-03	1.40582D-01
3.0000 02	2.79121D-03	2.29893D-03	-1.39092D 00
3.5000 02	4.56746D-03	5.49696D-03	-2.70293D 00
4.0000 02	6.45179D-03	7.07861D-03	-3.20626D 00
4.5000 02	8.79605D-03	6.35763D-03	-2.65543D 00
5.0000 02	1.26606D-02	3.35219D-03	-1.10679D 00
6.0000 02	2.80758D-02	-7.18972D-03	3.83818D 00
7.0000 02	4.91340D-02	-1.79984D-02	8.61879D 00
8.0000 02	6.39156D-02	-2.19030D-02	1.00810D 01
9.0000 02	8.36352D-02	-1.27748D-02	5.58841D 00
1.0000 03	1.83977D-01	1.41299D-02	-6.86682D 00

PRESSURE, ATM	S2DP	S2EP	S2FP
1.0000 00	4.40931D-01	-2.47615D 01	5.11603D 02
2.0000 00	1.13427D-01	-5.92221D 00	1.20274D 02
5.0000 00	-1.23232D 00	6.91620D 01	-1.41850D 03
1.0000 01	-2.01265D 00	1.05445D 02	-2.09142D 03
2.5000 01	7.83626D 00	-4.83915D 02	1.03002D 04
5.0000 01	2.94324D 01	-1.62492D 03	3.24453D 04
7.5000 01	1.72092D 01	-6.30576D 02	8.12491D 03
1.0000 02	-3.34719D 01	2.60024D 03	-6.22582D 04
1.2500 02	-1.00282D 02	6.56505D 03	-1.44530D 05
1.5000 02	-1.54052D 02	9.42669D 03	-1.98619D 05
2.0000 02	-1.42807D 02	7.16540D 03	-1.25715D 05
2.5000 02	4.11128D 01	-5.80527D 03	1.76338D 05
3.0000 02	2.98270D 02	-2.23666D 04	5.38089D 05
3.5000 02	4.96341D 02	-3.37970D 04	7.63052D 05
4.0000 02	5.42839D 02	-3.43445D 04	7.27586D 05
4.5000 02	4.04868D 02	-2.23098D 04	4.01793D 05
5.0000 02	9.96052D 01	7.16055D 02	-1.69955D 05
6.0000 02	-7.97540D 02	6.40791D 04	-1.66982D 06
7.0000 02	-1.61304D 03	1.18310D 05	-2.88506D 06
8.0000 02	-1.80591D 03	1.26678D 05	-2.96365D 06
9.0000 02	-9.32545D 02	5.95399D 04	-1.22617D 06
1.0000 03	1.34005D 03	-1.05087D 05	2.82636D 06

TABLE 16. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K ITS) ISOTHERM

100.00 MOLE PERCENT HELIUM - 0.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00044121140 00	8.19471D-07
2.0000 00	1.00088233230 00	1.62628D-06
5.0000 00	1.00220515270 00	3.99870D-06
1.0000 01	1.00440804970 00	7.81582D-06
2.5000 01	1.01100328960 00	1.83561D-05
5.0000 01	1.02195099490 00	3.32264D-05
7.5000 01	1.03284406820 00	4.51751D-05
1.0000 02	1.04368340270 00	5.46431D-05
1.2500 02	1.05446984180 00	6.20198D-05
1.5000 02	1.06520418760 00	6.76541D-05
2.0000 02	1.08651963740 00	7.49121D-05
2.5000 02	1.10763555720 00	7.85287D-05
3.0000 02	1.12855739760 00	8.01244D-05
3.5000 02	1.14929033920 00	8.08454D-05
4.0000 02	1.16983934790 00	8.13863D-05
4.5000 02	1.19020921060 00	8.20555D-05
5.0000 02	1.21040455770 00	8.28965D-05
6.0000 02	1.25028952770 00	8.48987D-05
7.0000 02	1.28952860780 00	8.83497D-05
8.0000 02	1.32815416780 00	9.83599D-05
9.0000 02	1.36619667960 00	1.22984D-04
1.0000 03	1.40368477790 00	1.67323D-04

89.47 MOLE PERCENT HELIUM - 10.53 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00050685960 00	1.15680D-06
2.0000 00	1.00101366260 00	2.29441D-06
5.0000 00	1.00253373260 00	5.63464D-06
1.0000 01	1.00506605580 00	1.09951D-05
2.5000 01	1.01265463940 00	2.57074D-05
5.0000 01	1.02527465460 00	4.62096D-05
7.5000 01	1.03786054500 00	6.24138D-05
1.0000 02	1.05041254700 00	7.50270D-05
1.2500 02	1.06293069670 00	8.46667D-05
1.5000 02	1.07541488220 00	9.18782D-05
2.0000 02	1.10028040930 00	1.00882D-04
2.5000 02	1.12500664420 00	1.05203D-04
3.0000 02	1.14959064930 00	1.07148D-04
3.5000 02	1.17402951540 00	1.08235D-04
4.0000 02	1.19832064320 00	1.09277D-04
4.5000 02	1.22246189440 00	1.10555D-04
5.0000 02	1.24645165670 00	1.12049D-04
6.0000 02	1.29397293320 00	1.15600D-04
7.0000 02	1.34088183210 00	1.22302D-04
8.0000 02	1.38718254830 00	1.39956D-04
9.0000 02	1.43288451340 00	1.78000D-04
1.0000 03	1.47800091380 00	2.40711D-04

TABLE 16. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

79.04 MOLE PERCENT HELIUM - 20.96 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00054858310 00	1.57942D-06
2.0000 00	1.00109720060 00	3.13159D-06
5.0000 00	1.00274326020 00	7.68427D-06
1.0000 01	1.00548738640 00	1.49759D-05
2.5000 01	1.01372500160 00	3.48901D-05
5.0000 01	1.02747178390 00	6.23548D-05
7.5000 01	1.04123969350 00	8.37531D-05
1.0000 02	1.05502725910 00	1.00148D-04
1.2500 02	1.06883240030 00	1.12461D-04
1.5000 02	1.08265259910 00	1.21500D-04
2.0000 02	1.11032671700 00	1.32476D-04
2.5000 02	1.13802536130 00	1.37600D-04
3.0000 02	1.16572373440 00	1.40025D-04
3.5000 02	1.19339808640 00	1.41673D-04
4.0000 02	1.22102660890 00	1.43452D-04
4.5000 02	1.24858986640 00	1.45578D-04
5.0000 02	1.27607093060 00	1.47973D-04
6.0000 02	1.33073090940 00	1.53806D-04
7.0000 02	1.38491721800 00	1.65329D-04
8.0000 02	1.43857050610 00	1.93158D-04
9.0000 02	1.49165445630 00	2.47526D-04
1.0000 03	1.54414976770 00	3.31536D-04

69.69 MOLE PERCENT HELIUM - 30.31 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00055224170 00	2.75907D-06
2.0000 00	1.00110484890 00	5.45998D-06
5.0000 00	1.00276484300 00	1.32932D-05
1.0000 01	1.00553861810 00	2.55341D-05
2.5000 01	1.01391104050 00	5.68465D-05
5.0000 01	1.02802139540 00	9.41773D-05
7.5000 01	1.04230411610 00	1.17592D-04
1.0000 02	1.05673565690 00	1.31387D-04
1.2500 02	1.07129543750 00	1.38871D-04
1.5000 02	1.08596545170 00	1.42496D-04
2.0000 02	1.11557500130 00	1.44481D-04
2.5000 02	1.14545970680 00	1.44909D-04
3.0000 02	1.17553832820 00	1.46556D-04
3.5000 02	1.20574720540 00	1.51099D-04
4.0000 02	1.23603601900 00	1.60412D-04
4.5000 02	1.26636467880 00	1.75807D-04
5.0000 02	1.29670102800 00	1.96953D-04
6.0000 02	1.35729798400 00	2.47715D-04
7.0000 02	1.41767303240 00	2.91300D-04
8.0000 02	1.47772473500 00	3.12692D-04
9.0000 02	1.53738669250 00	3.15807D-04
1.0000 03	1.59661638140 00	3.42281D-04

TABLE 16. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

60.09 MOLE PERCENT HELIUM - 39.91 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00055192880 00	4.76376D-06
2.0000 00	1.00110439950 00	9.42485D-06
5.0000 00	1.00276504460 00	2.29294D-05
1.0000 01	1.00554345860 00	4.39885D-05
2.5000 01	1.01395675140 00	9.75583D-05
5.0000 01	1.02822636840 00	1.60605D-04
7.5000 01	1.04278311610 00	1.99342D-04
1.0000 02	1.05760250710 00	2.21565D-04
1.2500 02	1.07266132150 00	2.33205D-04
1.5000 02	1.08793761960 00	2.38586D-04
2.0000 02	1.11906130420 00	2.41356D-04
2.5000 02	1.15082343260 00	2.42464D-04
3.0000 02	1.18309339500 00	2.46580D-04
3.5000 02	1.21575882420 00	2.56950D-04
4.0000 02	1.24872396990 00	2.76790D-04
4.5000 02	1.28190789940 00	3.07423D-04
5.0000 02	1.31524266710 00	3.46952D-04
6.0000 02	1.38214745410 00	4.34783D-04
7.0000 02	1.44909131770 00	5.03822D-04
8.0000 02	1.51583863150 00	5.33657D-04
9.0000 02	1.58223221920 00	5.38255D-04
1.0000 03	1.64816957610 00	5.90771D-04

49.24 MOLE PERCENT HELIUM - 50.76 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00050548090 00	4.18649D-06
2.0000 00	1.00101207000 00	8.28363D-06
5.0000 00	1.00253844450 00	2.01453D-05
1.0000 01	1.00510417250 00	3.86025D-05
2.5000 01	1.01295986400 00	8.52380D-05
5.0000 01	1.02655104580 00	1.39169D-04
7.5000 01	1.04071395040 00	1.71290D-04
1.0000 02	1.05539372760 00	1.88913D-04
1.2500 02	1.07054006930 00	1.97562D-04
1.5000 02	1.08610693660 00	2.01180D-04
2.0000 02	1.11833762330 00	2.02741D-04
2.5000 02	1.15179137780 00	2.04079D-04
3.0000 02	1.18622327840 00	2.09060D-04
3.5000 02	1.22142990120 00	2.20810D-04
4.0000 02	1.25724256670 00	2.41957D-04
4.5000 02	1.29352166150 00	2.72558D-04
5.0000 02	1.33015185310 00	3.09665D-04
6.0000 02	1.40410199670 00	3.85587D-04
7.0000 02	1.47851753990 00	4.39270D-04
8.0000 02	1.55301128810 00	4.60040D-04
9.0000 02	1.62732475990 00	4.70335D-04
1.0000 03	1.70128724880 00	5.37911D-04

TABLE 16. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K TTS) ISOTHERM - CONTINUED

41.02 MOLE PERCENT HELIUM - 58.98 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00046563280 00	1.12787D-05
2.0000 00	1.00093271770 00	2.23193D-05
5.0000 00	1.00234263840 00	5.42818D-05
1.0000 01	1.00472112000 00	1.03998D-04
2.5000 01	1.01206597350 00	2.29433D-04
5.0000 01	1.02497220670 00	3.73868D-04
7.5000 01	1.03865135850 00	4.59203D-04
1.0000 02	1.05309369700 00	5.05497D-04
1.2500 02	1.06807561990 00	5.27875D-04
1.5000 02	1.08370298190 00	5.37060D-04
2.0000 02	1.11651991880 00	5.41108D-04
2.5000 02	1.15110193210 00	5.45722D-04
3.0000 02	1.18711325180 00	5.61853D-04
3.5000 02	1.22426710730 00	5.98246D-04
4.0000 02	1.26232142270 00	6.60684D-04
4.5000 02	1.30107395150 00	7.47055D-04
5.0000 02	1.34035718440 00	8.47973D-04
6.0000 02	1.41998977940 00	1.04647D-03
7.0000 02	1.50039362560 00	1.18288D-03
8.0000 02	1.58102407530 00	1.23874D-03
9.0000 02	1.66152600970 00	1.27370D-03
1.0000 03	1.74167058930 00	1.44148D-03

30.99 MOLE PERCENT HELIUM - 69.01 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00039143150 00	1.23065D-05
2.0000 00	1.00078478910 00	2.43602D-05
5.0000 00	1.00197637650 00	5.92496D-05
1.0000 01	1.00400048190 00	1.13463D-04
2.5000 01	1.01035380110 00	2.49700D-04
5.0000 01	1.02184660600 00	4.04722D-04
7.5000 01	1.03440921090 00	4.94148D-04
1.0000 02	1.04797125000 00	5.40836D-04
1.2500 02	1.06246192410 00	5.62017D-04
1.5000 02	1.07781071940 00	5.69761D-04
2.0000 02	1.11080629080 00	5.72469D-04
2.5000 02	1.14642572550 00	5.78754D-04
3.0000 02	1.18418163870 00	6.00737D-04
3.5000 02	1.22364343060 00	6.48354D-04
4.0000 02	1.26444199610 00	7.26029D-04
4.5000 02	1.30626844670 00	8.28087D-04
5.0000 02	1.34886894550 00	9.42022D-04
6.0000 02	1.43560918250 00	1.15435D-03
7.0000 02	1.52345998950 00	1.29227D-03
8.0000 02	1.61166023170 00	1.34772D-03
9.0000 02	1.69973475770 00	1.38792D-03
1.0000 03	1.78739040950 00	1.55908D-03

TABLE 16. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

20.53 MOLE PERCENT HELIUM - 79.47 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00027043000 00	1.00441D-05
2.0000 00	1.00054358740 00	1.98934D-05
5.0000 00	1.00137937180 00	4.84147D-05
1.0000 01	1.00282640200 00	9.27272D-05
2.5000 01	1.00756667830 00	2.03847D-04
5.0000 01	1.01675546910 00	3.29208D-04
7.5000 01	1.02747483050 00	4.00110D-04
1.0000 02	1.03962874860 00	4.35883D-04
1.2500 02	1.05311836320 00	4.51152D-04
1.5000 02	1.06784339220 00	4.56055D-04
2.0000 02	1.10059951400 00	4.57315D-04
2.5000 02	1.13711656880 00	4.64029D-04
3.0000 02	1.17667067120 00	4.86966D-04
3.5000 02	1.21862118000 00	5.33753D-04
4.0000 02	1.26242314010 00	6.04679D-04
4.5000 02	1.30762713150 00	6.91570D-04
5.0000 02	1.35387085030 00	7.82881D-04
6.0000 02	1.44838924120 00	9.41135D-04
7.0000 02	1.54434854260 00	1.03792D-03
8.0000 02	1.64076248720 00	1.08719D-03
9.0000 02	1.73704086520 00	1.15869D-03
1.0000 03	1.83283379840 00	1.35778D-03

10.67 MOLE PERCENT HELIUM - 89.33 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	1.00014137000 00	7.75994D-06
2.0000 00	1.00028619320 00	1.53774D-05
5.0000 00	1.00074133690 00	3.74350D-05
1.0000 01	1.00156854050 00	7.16652D-05
2.5000 01	1.00455918770 00	1.57051D-04
5.0000 01	1.01119977400 00	2.51707D-04
7.5000 01	1.01982920530 00	3.03174D-04
1.0000 02	1.03034338110 00	3.27336D-04
1.2500 02	1.04262876250 00	3.36256D-04
1.5000 02	1.05656429570 00	3.38131D-04
2.0000 02	1.08887687580 00	3.38002D-04
2.5000 02	1.12624850370 00	3.44916D-04
3.0000 02	1.16767933260 00	3.67583D-04
3.5000 02	1.21226866650 00	4.11613D-04
4.0000 02	1.25925163920 00	4.74668D-04
4.5000 02	1.30800661270 00	5.47807D-04
5.0000 02	1.35804340600 00	6.21113D-04
6.0000 02	1.46053563910 00	7.40888D-04
7.0000 02	1.56465424600 00	8.08100D-04
8.0000 02	1.66920861990 00	8.37241D-04
9.0000 02	1.77352105380 00	8.78570D-04
1.0000 03	1.87720904560 00	1.00407D-03

TABLE 16. - COMPRESSIBILITY FACTORS AND STANDARD ERRORS FOR INTEGRAL PRESSURES. 50 DEGREE C (323.140 K ITS) ISOTHERM - CONTINUED

0.00 MOLE PERCENT HELIUM - 100.00 MOLE PERCENT NITROGEN

PRESSURE, ATM	Z	SZ
1.0000 00	9.99983547500-01	1.04057D-05
2.0000 00	9.99970992170-01	2.05484D-05
5.0000 00	9.99956750350-01	4.94338D-05
1.0000 01	1.00001132480 00	9.26917D-05
2.5000 01	1.00076605090 00	1.90660D-04
5.0000 01	1.00400783090 00	2.76102D-04
7.5000 01	1.00972731450 00	3.05125D-04
1.0000 02	1.01788137300 00	3.09877D-04
1.2500 02	1.02838391080 00	3.08222D-04
1.5000 02	1.04111113610 00	3.08874D-04
2.0000 02	1.07260432350 00	3.32933D-04
2.5000 02	1.11094096580 00	3.91084D-04
3.0000 02	1.15465242200 00	4.61599D-04
3.5000 02	1.20241729540 00	5.20951D-04
4.0000 02	1.25314780920 00	5.61257D-04
4.5000 02	1.30599657460 00	5.86855D-04
5.0000 02	1.36032450710 00	6.06256D-04
6.0000 02	1.47164891720 00	6.48202D-04
7.0000 02	1.58465072110 00	6.92783D-04
8.0000 02	1.69800152370 00	7.37616D-04
9.0000 02	1.81098584590 00	8.50768D-04
1.0000 03	1.92322019740 00	1.15823D-03

Table 17 contains a summary listing of the Leiden parameters and the zero pressure volume ratio, N. Table 18 has compressibility factors at selected pressures for all of the compositions and temperatures to facilitate observations of trends in the compressibility factors. A chronology of the runs was prepared and is included as table 19. The chronology table is necessary to explain apparent discrepancies in the volume ratios listed in table 17. Replacement of the expansion valve could, and in some cases did, change the volume ratio significantly. Table 19 is also of value in the preparation of estimates of the amount of time required to obtain experimental data on other mixtures or other isotherms.

TABLE 17. - Parameters as a function of composition and temperature

Helium, mole-percent	N	B $\left(\frac{cm^3}{gram\ mole}\right)$	C $\left(\frac{cm^3}{gram\ mole}\right)^2$	D x 10^{-2} $\left(\frac{cm^3}{gram\ mole}\right)^3$	E x 10^{-3} $\left(\frac{cm^3}{gram\ mole}\right)^4$	F x 10^{-6} $\left(\frac{cm^3}{gram\ mole}\right)^5$
			0° C			
100.00	1.5302194±0.0000059	12.0110±0.0135	105.8± 1.1	9.9± 0.3	-	-
89.47	1.5304234± .0000060	13.3551± .0214	177.7± 3.4	14.6± 2.1	15± 4	-
79.04	1.5304001± .0000284	13.9636± .1053	248.6±17.5	30.6± 11.3	29± 22	-
69.69	1.5287117± .0000092	13.7897± .0356	328.8± 6.2	42.9± 4.2	73± 9	-
60.09	1.5287182± .0000150	12.8006± .0585	430.7±10.5	55.0± 7.3	151± 16	-
49.24	1.5287210± .0000154	10.7329± .0595	579.1±10.9	54.4± 7.9	333± 18	-
41.02	1.5287368± .0000185	8.4461± .0724	721.1±13.7	39.0± 10.2	559± 23	-
30.99	1.5286784± .0000158	5.3062± .0807	824.5±23.4	115.5± 29.6	397±156	10.02± 2.89
20.53	1.5286378± .0000178	0.9578± .0869	999.4±25.6	149.1± 33.2	422±180	22.60± 3.46
10.67	1.5286662± .0000163	-4.0902± .0839	1,213.6±26.0	150.7± 35.0	536±197	39.63± 3.93
0.00	1.5302540± .0000153	-9.9904± .0771	1,383.5±24.6	243.2± 34.0	142±197	77.82± 4.06
			25° C			
100.00	1.5303593±0.0000057	11.8433±0.0144	105.8± 1.3	8.3± 0.3	-	-
89.47	1.5287376± .0000128	13.4377± .0346	164.5± 3.2	20.2± .9	-	-
79.04	1.5285937± .0000244	14.4623± .0695	222.5± 6.8	42.3± 2.0	-	-
69.69	1.5286308± .0000139	14.4000± .0566	325.4±10.3	40.0± 7.4	70± 16	-
60.09	1.5286522± .0000160	13.8365± .0661	419.3±12.4	57.3± 9.1	131± 21	-
49.24	1.5286258± .0000291	12.3827± .1211	554.4±23.4	66.5± 17.8	284± 41	-
41.02	1.5286768± .0000232	10.4690± .0984	716.4±19.8	35.8± 15.6	538± 38	-
30.99	1.5287512± .0000206	7.6688± .0891	894.5±18.6	15.2± 15.2	893± 38	-
20.53	1.5286802± .0000222	4.2124± .1214	1,051.5±38.3	50.6± 53.0	1,014±305	8.68± 6.25
10.67	1.5287349± .0000287	-0.0553± .1622	1,277.3±54.6	16.9± 80.3	1,454±495	16.42±10.82
0.00	1.5302013± .0000336	-4.4377± .1878	1,273.3±63.3	312.9± 92.4	90±563	70.42±12.18
			50° C			
100.00	1.5301783±0.0000081	11.7001±0.0217	105.1± 2.0	6.9± 0.6	-	-
89.47	1.5287985± .0000107	13.4404± .0306	160.7± 3.0	18.3± .9	-	-
79.04	1.5287498± .0000139	14.5455± .0418	223.7± 4.4	38.1± 1.4	-	-
69.69	1.5288342± .0000171	14.6381± .0735	343.5±13.9	22.7± 10.4	94± 24	-
60.09	1.5287230± .0000294	14.6275± .1269	405.0±25.0	60.4± 19.3	106± 46	-
49.24	1.5287614± .0000247	13.3883± .1116	570.3±23.1	48.2± 18.6	297± 46	-
41.02	1.5285805± .0000674	12.3272± .3007	664.0±63.0	65.6± 51.9	440±131	-
30.99	1.5285432± .0000722	10.3534± .3283	785.8±71.1	90.5± 60.2	677±156	-
20.53	1.5286182± .0000587	7.1344± .2681	1,011.5±59.6	47.7± 52.1	1,206±139	-
10.67	1.5284666± .0000440	3.7027± .2074	1,229.3±48.1	-4.2± 43.2	1,903±118	-
0.00	1.5300764± .0000459	-0.4879± .2795	1,368.7±99.8	114.0±151.1	1,584±962	29.76±21.64

TABLE 18. - Compressibility factors as a function of composition and temperature

Helium, mole-percent	Z (1 atm)	Z (250 atm)	Z (500 atm)	Z (700 atm)	Z (1,000 atm)
		0° C			
100.00	1.00053580±0.00000061	1.129833±0.000057	1.252951±0.000060	1.347499±0.000064	1.483695±0.000099
89.47	1.00059585± .00000095	1.148001± .000051	1.292312± .000068	1.404525± .000101	1.567558± .000114
79.04	1.00062310± .00000468	1.160193± .000238	1.323127± .000336	1.452048± .000509	1.640932± .000529
69.69	1.00061551± .00000158	1.166318± .000078	1.344485± .000115	1.488122± .000168	1.700432± .000184
60.09	1.00057164± .00000260	1.167629± .000125	1.360726± .000191	1.519619± .000272	1.756154± .000328
49.24	1.00047978± .00000264	1.163680± .000124	1.373543± .000200	1.550458± .000276	1.815620± .000332
41.02	1.00037812± .00000321	1.156798± .000148	1.379707± .000247	1.570841± .000335	1.858118± .000408
30.99	1.00023832± .00000356	1.145052± .000133	1.385146± .000216	1.594450± .000237	1.909569± .000373
20.53	1.00004472± .00000383	1.127815± .000148	1.387885± .000231	1.617571± .000259	1.962862± .000401
10.67	0.99981990± .00000369	1.107043± .000142	1.388322± .000213	1.638166± .000243	2.012183± .000413
0.00	.99955683± .00000339	1.081486± .000133	1.389372± .000196	1.662068± .000229	2.067663± .000391
		25° C			
100.00	1.00048405±0.00000059	1.117752±0.000055	1.229830±0.000059	1.316007±0.000063	1.440232±0.000119
89.47	1.00054925± .00000142	1.135698± .000126	1.267819± .000135	1.370580± .000148	1.519704± .000281
79.04	1.00059118± .00000284	1.149176± .000244	1.299080± .000264	1.417420± .000295	1.590466± .000562
69.69	1.00058881± .00000230	1.155927± .000117	1.319889± .000166	1.451544± .000240	1.646163± .000300
60.09	1.00056596± .00000269	1.159268± .000133	1.337081± .000196	1.482576± .000282	1.699143± .000339
49.24	1.00050682± .00000492	1.158621± .000237	1.351774± .000367	1.513478± .000522	1.755968± .000607
41.02	1.00042894± .00000400	1.154570± .000187	1.359136± .000305	1.533369± .000417	1.796028± .000518
30.99	1.00031486± .00000362	1.146199± .000164	1.365245± .000282	1.555498± .000375	1.842934± .000469
20.53	1.00017391± .00000490	1.134210± .000185	1.370190± .000295	1.578489± .000329	1.893183± .000545
10.67	0.99999987± .00000654	1.118566± .000248	1.371911± .000370	1.597958± .000411	1.938512± .001091
0.00	.99982070± .00000757	1.099441± .000290	1.374226± .000434	1.620502± .000498	1.990315± .000873
		50° C			
100.00	1.00044121±0.00000082	1.107635±0.000079	1.210405±0.000083	1.289529±0.000088	1.403685±0.000167
89.47	1.00050686± .00000116	1.125007± .000105	1.246452± .000112	1.340882± .000122	1.478001± .000241
79.04	1.00054858± .00000158	1.138025± .000138	1.276071± .000148	1.384917± .000165	1.544150± .000332
69.69	1.00055224± .00000276	1.145460± .000145	1.296701± .000197	1.417673± .000291	1.596616± .000342
60.09	1.00055193± .00000476	1.150823± .000242	1.315243± .000347	1.449091± .000504	1.648170± .000591
49.24	1.00050548± .00000419	1.151791± .000204	1.330152± .000310	1.478518± .000439	1.701287± .000538
41.02	1.00046563± .00001128	1.151102± .000546	1.340357± .000848	1.500394± .001183	1.741671± .001441
30.99	1.00039143± .00001231	1.146426± .000579	1.348869± .000942	1.523460± .001292	1.787390± .001559
20.53	1.00027043± .00001004	1.137117± .000464	1.353871± .000783	1.544349± .001038	1.832834± .001358
10.67	1.00014137± .00000776	1.126249± .000345	1.358043± .000621	1.564654± .000808	1.877209± .001004
0.00	0.99998355± .00001041	1.110941± .000391	1.360325± .000606	1.584651± .000693	1.923220± .001158

TABLE 19. - Chronology of runs

Helium, mole-percent	Run number	Date	Experimenter	Temperature, ° C
100.00	HE-0-23	09-30-69	AH	0
100.00	HE-0-24	10-03-69	AH	0
100.00	HE-0-25	10-08-69	AH	0
100.00	HE-0-26	10-10-69	AH	0
100.00	HE-0-27	10-14-69	AH	0
100.00	HE-0-28	10-17-69	AH	0
100.00	HE-0-29	10-21-69	AH	0
100.00	HE-0-30	10-23-69	AH	0
100.00	HE-0-31	10-27-69	AH	0
100.00	HE-0-32	10-29-69	AH	0
0.00	N2-0-1	10-31-69	AH	0
0.00	N2-0-2	11-04-69	AH	0
0.00	N2-0-3	11-06-69	AH	0
0.00	N2-0-4	11-12-69	AH	0
0.00	N2-0-5	11-13-69	AH	0
0.00	N2-0-6	11-17-69	AH	0
0.00	N2-0-7	11-18-69	AH	0
0.00	N2-0-8	11-20-69	AH	0
0.00	N2-0-9	11-24-69	AH	0
0.00	N2-0-10	11-28-69	AH	0
0.00	N2-0-11	12-02-69	AH	0
0.00	N2-25-1	12-04-69	AH	25
0.00	N2-25-2	12-08-69	AH	25
0.00	N2-25-3	12-09-69	AH	25
0.00	N2-25-4	12-11-69	AH	25
0.00	N2-25-5	12-15-69	AH	25
100.00	HE-25-4	12-17-69	AH	25
100.00	HE-25-5	12-19-69	AH	25
100.00	HE-25-6	12-23-69	AH	25
100.00	HE-50-3	12-30-69	AH	50
100.00	HE-50-4	01-02-70	AH	50
100.00	HE-50-5	01-06-70	AH	50
0.00	N2-50-1	01-08-70	AH	50
0.00	N2-50-2	01-12-70	AH	50
0.00	N2-50-3	01-14-70	AH	50
0.00	N2-50-4	01-16-70	AH	50
0.00	N2-50-5	01-21-70	AH	50
89.47	90HE-10N2-0-1[1]	01-28-70	AH	0
89.47	90HE-10N2-0-2	01-30-70	AH	0
89.47	90HE-10N2-0-3	02-02-70	AH	0
79.04	80HE-20N2-0-1	02-04-70	AH	0
79.04	80HE-20N2-0-2	02-05-70	AH	0
79.04	80HE-20N2-0-3	02-09-70	AH	0
79.04	80HE-20N2-0-4[1]	02-11-70	AH	0
79.04	80HE-20N2-0-5	02-12-70	AH	0

See footnote at end of table.

TABLE 19. - Chronology of runs--Continued

Helium, mole-percent	Run number	Date	Experimenter	Temperature, ° C
79.04	80HE-20N2-0-6	02-17-70	AH	0
69.69	70HE-30N2-0-1[1]	03-04-70	AH	0
69.69	70HE-30N2-0-2	03-06-70	AH	0
69.69	70HE-30N2-0-3	03-09-70	AH	0
60.09	60HE-40N2-0-1	03-12-70	AH	0
60.09	60HE-40N2-0-2	03-16-70	AH	0
60.09	60HE-40N2-0-3	03-17-70	AH	0
60.09	60HE-40N2-0-4	03-19-70	AH	0
49.24	50HE-50N2-0-1	03-23-70	AH	0
49.24	50HE-50N2-0-2	03-25-70	AH	0
49.24	50HE-50N2-0-3	03-27-70	AH	0
49.24	50HE-50N2-0-4	03-30-70	AH	0
41.02	40HE-60N2-0-1	04-01-70	AH	0
41.02	40HE-60N2-0-2	04-02-70	AH	0
41.02	40HE-60N2-0-3	04-08-70	AH	0
41.02	40HE-60N2-0-4	04-09-70	AH	0
30.99	30HE-70N2-0-1	04-13-70	AH	0
30.99	30HE-70N2-0-2	04-14-70	AH	0
30.99	30HE-70N2-0-3	04-16-70	AH	0
30.99	30HE-70N2-0-4	04-17-70	AH	0
30.99	30HE-70N2-0-5	04-22-70	AH	0
20.53	20HE-80N2-0-1	04-27-70	AH	0
20.53	20HE-80N2-0-2	04-29-70	AH	0
20.53	20HE-80N2-0-3	05-01-70	AH	0
20.53	20HE-80N2-0-4	05-04-70	AH	0
10.67	10HE-90N2-0-1	05-06-70	AH	0
10.67	10HE-90N2-0-2	05-07-70	AH	0
10.67	10HE-90N2-0-3	05-11-70	AH	0
10.67	10HE-90N2-0-4	05-13-70	AH	0
10.67	10HE-90N2-0-5	05-14-70	AH	0
89.47	90HE-10N2-25-1	06-03-70	AH	25
89.47	90HE-10N2-25-2	06-04-70	AH	25
89.47	90HE-10N2-25-3	06-08-70	AH	25
79.04	80HE-20N2-25-1	06-11-70	AH	25
79.04	80HE-20N2-25-2	06-24-70	TCB	25
79.04	80HE-20N2-25-3	06-25-70	TCB	25
79.04	80HE-20N2-25-4	06-29-70	TCB	25
69.69	70HE-30N2-25-1	07-01-70	TCB	25
69.69	70HE-30N2-25-2	07-06-70	TCB	25
69.69	70HE-30N2-25-3	07-07-70	TCB	25
69.69	70HE-30N2-25-4	07-09-70	TCB	25
69.69	70HE-30N2-25-5	07-13-70	TCB	25
60.09	60HE-40N2-25-1	07-15-70	TCB	25
60.09	60HE-40N2-25-2	07-16-70	TCB	25
60.09	60HE-40N2-25-3	07-20-70	TCB	25
60.09	60HE-40N2-25-4	07-22-70	TCB	25

See footnote at end of table.

TABLE 19. - Chronology of runs--Continued

Helium, mole-percent	Run number	Date	Experimenter	Temperature, ° C
60.09	60HE-40N2-25-5	07-23-70	TCB	25
49.24	50HE-50N2-25-1	07-27-70	TCB	25
49.24	50HE-50N2-25-2	07-28-70	TCB	25
49.24	50HE-50N2-25-3	07-30-70	TCB	25
49.24	50HE-50N2-25-4	08-03-70	TCB	25
49.24	50HE-50N2-25-5	08-04-70	TCB	25
49.24	50HE-50N2-25-6	08-05-70	TCB	25
41.02	40HE-60N2-25-1	08-10-70	TCB	25
41.02	40HE-60N2-25-2	08-13-70	TCB	25
41.02	40HE-60N2-25-3	08-17-70	TCB	25
41.02	40HE-60N2-25-4	08-18-70	TCB	25
41.02	40HE-60N2-25-5	08-20-70	TCB	25
30.99	30HE-70N2-25-1	08-24-70	TCB	25
30.99	30HE-70N2-25-2	08-25-70	TCB	25
30.99	30HE-70N2-25-3	08-27-70	TCB	25
30.99	30HE-70N2-25-4	08-31-70	TCB	25
30.99	30HE-70N2-25-5	09-02-70	TCB	25
20.53	20HE-80N2-25-1	09-09-70	TCB	25
20.53	20HE-80N2-25-2	09-10-70	TCB	25
20.53	20HE-80N2-25-3	09-14-70	TCB	25
20.53	20HE-80N2-25-4	09-21-70	TCB	25
20.53	20HE-80N2-25-5	09-23-70	TCB	25
10.67	10HE-90N2-25-1	09-28-70	TCB	25
10.67	10HE-90N2-25-2	09-29-70	TCB	25
10.67	10HE-90N2-25-3	09-30-70	TCB	25
10.67	10HE-90N2-25-4	10-05-70	TCB	25
10.67	10HE-90N2-25-5	10-06-70	TCB	25
10.67	10HE-90N2-25-6	10-08-70	TCB	25
10.67	10HE-90N2-50-1	11-12-70	TCB	50
10.67	10HE-90N2-50-2	11-16-70	TCB	50
10.67	10HE-90N2-50-3	11-17-70	TCB	50
10.67	10HE-90N2-50-4	11-19-70	TCB	50
10.67	10HE-90N2-50-5	11-23-70	TCB	50
20.53	20HE-80N2-50-1	11-30-70	TCB	50
20.53	20HE-80N2-50-2	12-01-70	TCB	50
20.53	20HE-80N2-50-3[1]	12-03-70	TCB	50
20.53	20HE-80N2-50-4	12-07-70	TCB	50
20.53	20HE-80N2-50-5	12-09-70	TCB	50
20.53	20HE-80N2-50-6	12-10-70	TCB	50
30.99	30HE-70N2-50-1	12-14-70	TCB	50
30.99	30HE-70N2-50-2	12-15-70	TCB	50
30.99	30HE-70N2-50-3	12-21-70	TCB	50
30.99	30HE-70N2-50-4	12-22-70	TCB	50
30.99	30HE-70N2-50-5	01-05-71	TCB	50
41.02	40HE-60N2-50-1	01-07-71	TCB	50
41.02	40HE-60N2-50-2	01-18-71	TCB	50

See footnote at end of table.

TABLE 19. - Chronology of runs--Continued

Helium, mole-percent	Run number	Date	Experimenter	Temperature, ° C
41.02	40HE-60N2-50-3	01-19-71	TCB	50
41.02	40HE-60N2-50-4	01-21-71	TCB	50
41.02	40HE-60N2-50-5	01-28-71	TCB	50
49.24	50HE-50N2-50-1	02-01-71	TCB	50
49.24	50HE-50N2-50-2	02-02-71	TCB	50
49.24	50HE-50N2-50-3	02-04-71	TCB	50
49.24	50HE-50N2-50-4	02-08-71	TCB	50
49.24	50HE-50N2-50-5	02-10-71	TCB	50
60.09	60HE-40N2-50-1	02-16-71	TCB	50
60.09	60HE-40N2-50-2	02-17-71	TCB	50
60.09	60HE-40N2-50-3	02-18-71	TCB	50
60.09	60HE-40N2-50-4	02-23-71	TCB	50
69.69	70HE-30N2-50-1	02-25-71	TCB	50
69.69	70HE-30N2-50-2	03-01-71	TCB	50
69.69	70HE-30N2-50-3	03-03-71	TCB	50
69.69	70HE-30N2-50-4	03-08-71	TCB	50
79.04	80HE-20N2-50-1	03-10-71	TCB	50
79.04	80HE-20N2-50-2	03-11-71	TCB	50
79.04	80HE-20N2-50-3	03-15-71	TCB	50
79.04	80HE-20N2-50-4	03-16-71	TCB	50
89.47	90HE-10N2-50-1	03-18-71	TCB	50
89.47	90HE-10N2-50-2	03-22-71	TCB	50
89.47	90HE-10N2-50-3	03-23-71	TCB	50
89.47	90HE-10N2-50-4	03-25-71	TCB	50

[1] Expansion valve replaced before the start of this run.

DISCUSSION

Data were obtained on 161 experimental runs consisting of 2,355 observed pressures. Runs numbers HE-0-23, HE-0-24, 10HE-90N2-25-5, and 80HE-20N2-25-2 were obviously in error when compared with the other runs. The source of the errors could not be determined; therefore, data from these four runs were discarded and are not reported or used in this report. In addition, P_3 in run number 70HE-30N2-25-5, P_{10} in run number 70HE-30N2-50-1, and P_{10} in run number 20HE-80N2-50-5 were given zero weight in the data treatment.

Assumptions and sources of errors discussed in our previous report (5) also apply to data presented here. Stated standard deviations are estimates of the random errors associated with quantities recorded.

Compressibility factors are believed to be accurate to better than 0.1 percent over the entire pressure, temperature, and composition range. Since the true values of the compressibility factors are unknown, the accuracy statement is a somewhat arbitrary judgment of the total of the random and systematic errors.

REFERENCES

1. Barber, C. R. International Practical Temperature Scale of 1968. Nature, v. 222, June 7, 1969, pp. 929-931.

2. Barieau, Robert E. The Density of Moist Air From 0° C to Near 25° C and Near Atmospheric Pressure. Helium Research Center, Internal Rept. 36, August 1963, 20 pp. On file at Helium Operations, Bureau of Mines, Amarillo, Tex.

3. Bartlett, Edward P. The Compressibility Isotherms of Hydrogen, Nitrogen and Mixtures of These Gases at 0° and Pressures to 1,000 Atmospheres. A Correction. J. Am. Chem. Soc., v. 49, No. 8, August 1927, pp. 1955-1957.

4. Briggs, Ted C. Compressibility Data for Helium Over the Temperature Range -5° C to 80° C and at Pressures to 800 Atmospheres. BuMines Rept. of Inv. 7352, 1970, 39 pp.

5. Briggs, Ted C., B. J. Dalton, and Robert E. Barieau. Compressibility Data for Helium at 0° C and Pressures to 800 Atmospheres. BuMines Rept. of Inv. 7287, 1969, 54 pp.

6. Briggs, Ted C., and Alvin R. Howard. Elastic Pressure Distortion of the Volumes of a 1,000-Atmosphere Burnett Compressibility Apparatus Over the Temperature Range 0° to 75° C. BuMines Rept. of Inv. 7366, 1970, 22 pp.

7. _____. Recalibration of Leeds & Northrup Company G-2 Mueller Bridge, Serial No. 1603629 and Redetermination of the Ice Point Resistance of Leeds & Northrup Company Platinum Resistance Thermometer, Serial No. 1586182. Helium Research Center, Internal Rept. 128, January 1970, 26 pp. On file at Helium Operations, Bureau of Mines, Amarillo, Tex.

8. Brombacher, W. G., D. P. Johnson, and J. L. Cross. Mercury Barometers and Manometers. NBS Monograph 8, May 20, 1960, 59 pp.

9. Burnett, E. S. Compressibility Determinations Without Volume Measurements. J. Appl. Mech., v. 3, No. 4, December 1936, pp. A136-A140.

10. Cross, J. L. Reduction of Data for Piston Gage Pressure Measurements. NBS Monograph 65, June 17, 1963, 9 pp.

11. Dalton, B. J. Local Value of Acceleration of Gravity at the Helium Research Center (Potsdam System). Helium Research Center, Memorandum Rept. 43, April 1964, 13 pp. On file at Helium Operations, Bureau of Mines, Amarillo, Tex.

12. Dalton, B. J., R. Leroy Moffitt, Robert E. Barieau, and D. R. Smith. A General Computer Program for Use in the Reduction of Burnett Compressibility Data. BuMines Inf. Circ. 8491, 1970, 278 pp.

13. Dilley, J. R., and W. R. Edwards. A High-Pressure Gas-Compression System. U.S. Dept. of Agriculture Circ. 61, January 1929, 19 pp.

14. Michels, A., H. Wouters, and J. de Boer. Isotherms of Nitrogen Between 200 and 3,000 Atm. and 0° and 150°. Physica, v. 3, July 1936, pp. 585-589.

15. Osborne, Nathan S., Harold F. Stimson, and Defoe C. Ginnings. Thermal Properties of Saturated Water and Steam. J. Res. NBS, v. 23, Research Paper RP1229, August 1939, pp. 261-270.

16. Wiebe, R., V. L. Gaddy, and Conrad Heins, Jr. The Compressibility Isotherms of Helium at Temperatures From -70 to 200° and at Pressures to 1,000 Atmospheres. J. Am. Chem. Soc., v. 53, No. 5, May 1931, pp. 1721-1725.

17. Wood, Robert E., W. J. Boone, Jr., J. D. Marshall, and F. W. Baer. Equation of State for Helium-Nitrogen Mixtures From 133.15° to 748.15° K With Pressures to 300 Atmospheres. BuMines Rept. of Inv. 6896, 1967, 178 pp.

☆ U. S. GOVERNMENT PRINTING OFFICE : 1972 O - 467-854