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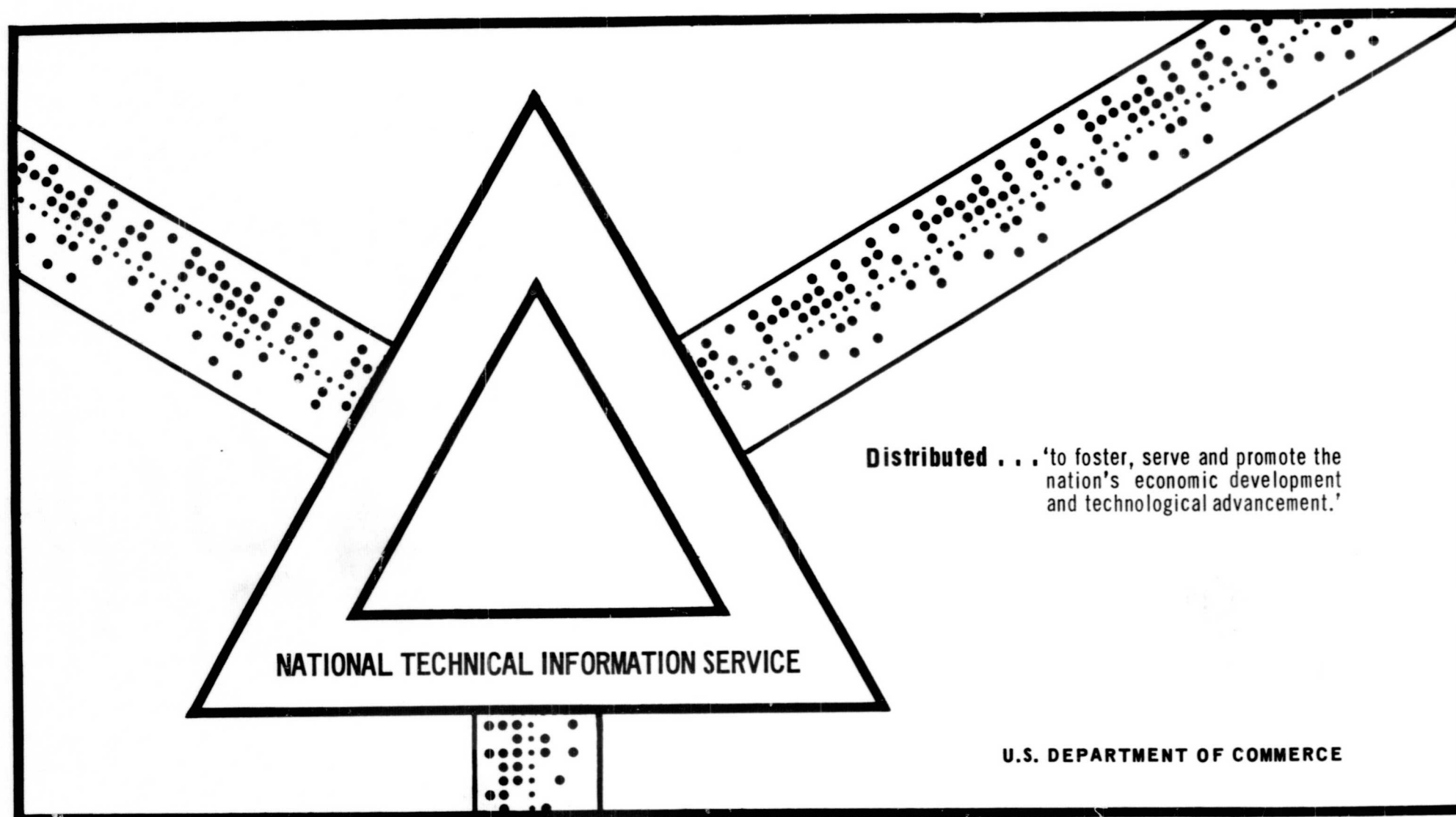
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PARTIAL PRESSURES FROM RESIDUAL GAS
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METALS AND CERAMICS DIVISION

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PROGRAM FOR COMPUTING PARTIAL PRESSURES
FROM RESIDUAL GAS ANALYZER DATA

D. S. Easton, Carla A. Giles,
Sandra H. Merriman, and R. E. Clausing

Work sponsored by NASA-SNSO-C, J. J. Lombardo, Chief,
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SEPTEMBER 1971

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PROGRAM FOR COMPUTING PARTIAL PRESSURES
FROM RESIDUAL GAS ANALYZER DATA

D. S. Easton, Carla A. Miles,¹
Sandra H. Merriman,¹ and R. E. Clausing

ABSTRACT

A computer program for determining the partial pressures of various gases from residual gas analyzer data is given. The analysis of the ion currents of 18 m/e spectrometer peaks allows the determination of 12 gases simultaneously. Comparison is made to ion gage readings along with certain other control information. The output data are presented in both tabular and graphical form.

INTRODUCTION

The qualitative interpretation of residual gas analyzer (RGA) spectra is sometimes possible by simple pattern recognition, however, the quantitative interpretation is usually difficult. Each gas present in the analyzer will produce a characteristic ion spectra and the analyzer will have a particular sensitivity for each gas. Both the sensitivity and characteristic spectra (cracking pattern) can be determined by calibration of the analyzer with known pressures of known gas compositions. (For less critical work these data may be obtained from the literature for similar instruments.) Once the sensitivity and cracking patterns are available for each gas, complex spectra produced by the presence of several gases may be analyzed by solving a set of simultaneous equations involving all of the gases and their contributions to the peaks observed in the total RGA ion spectra. If the sensitivities, the cracking patterns, and the RGA data are all accurate, an exact solution will be obtained. In most cases, however, an optimization procedure must be used to obtain the most satisfactory fit to the data. This

¹Numerical Analysis Program, Mathematics Division.

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report describes a computer program for processing sensitivity and cracking pattern data for 12 gases along with RGA data for 18 m/e (mass-to-charge ratio) peaks to obtain quantitative partial pressure data.

The calculation is part of an outgassing-rate program developed to calculate the outgassing rates of gases desorbed from NERVA fuel elements.² The program is given along with a sample calculation which produces both tabular and graphical output.

Experimental Technique

In our work the RGA was a Varian quadrupole with an electron multiplier; however, the program can be used with any of the many types of RGA's available.

A nude Bayard-Alpert type ion gage is used to monitor total pressure and to determine the sensitivity of the RGA. The emission current of the ion gage was adjusted to provide readings normalized to equivalent nitrogen pressure.

The gas analyzer was calibrated for 12 high-purity grade gases (H₂, He, CH₄, H₂O, C₂H₄, N₂, CO, O₂, A₂, CO₂, C₂H₆, and C₃H₈) obtained from the Matheson Company. The cracking pattern (characteristic ion spectra) and sensitivity (amps per torr) were established for each gas and are shown in the sample calculation in the Appendix. Also given are selected ionization constants³⁻⁶ normalized to nitrogen equivalents and used to convert the ion current of the mass spectrometer and ion gage to partial pressures in torr.

²D. S. Easton and R. E. Clausen, "Outgassing of Nuclear Rocket Fuel Elements," *J. Vac. Sci. Technol.* 7(6), S116-S123 (1970).

³R. W. Kiser, *Introduction to Mass Spectrometry and Its Application*, p. 300, Prentice-Hall, Englewood Cliffs, New Jersey, 1965.

⁴Saul Dushman, *Scientific Foundation of Vacuum Technique*, 2nd ed., p. 324, Wiley, New York, 1965.

⁵Varian Reprint on Vacuum Technology, No. 2, Varian Associates, Palo Alto, California, March 1965.

⁶P. A. Redhead, J. P. Hobson, and E. V. Kornelsen, *The Physical Basis of Ultra High Vacuum*, p. 264, Chapman & Hall, Ltd., London, 1968.

Calculation Procedure

Input data for the calculation consists of the following:

1. identification of run,
2. date (day and month),
3. accumulated time (in hours),
4. ion gage pressure (torr),
5. temperature of the apparatus,
6. temperature of the sample,
7. the cracking pattern of 12 gases (the parent peak is set to 1 and all other peaks a fractional part),
8. the sensitivity (amps per torr) for each gas,
9. the ionization constant (normalized to nitrogen) for each gas, and
10. the amplitudes of 18 selected peaks (ion current in amps) from the RGA spectra.

The spectra from the RGA is recorded as a function of time and/or temperature along with other data desired. The intensities of the spectrometer peaks at 18 separate values of m/e (mass-to-charge ratios of 2, 4, 12, 13, 14, 15, 16, 17, 18, 22, 26, 27, 28, 29, 30, 32, 40, and 44) are recorded for each run. The program generates a least-squares fit for a set of 18 simultaneous equations (18 values of m/e) with 12 unknowns (gases):

$$B_i = \sum_{j=1}^{12} A_{ij} X_j, \quad (1)$$

where

- B_i = intensity of the i^{th} peak (ion current),
 A_{ij} = fractional contribution to the i^{th} peak from the j^{th} gas as determined by experimental cracking pattern, and
 X_j = ion current from the parent peak of the j^{th} gas.

The coefficients A_{ij} of the equation are obtained from the cracking pattern. All pressures are corrected⁷ for temperatures other than 300°K by

⁷P. A. Redhead, J. P. Hobson, and E. V. Kornelsen, *The Physical Basis of Ultra High Vacuum*, pp. 281-287, Chapman & Hall, Ltd., London, 1968.

$$P_{\text{corr}} = P_i (T_i / 300^\circ\text{K})^{1/2}, \quad (2)$$

where

- P_{corr} = corrected pressure (in torr),
 P_i = measured pressure (in torr), and
 T_i = measured temperature ($^\circ\text{K}$).

The tabular output contains a print-out of the input data for the cracking pattern, the ionization constants, and the RGA sensitivity, along with the following results for each data scan.

1. The pressures are corrected for thermal effects.
2. For each peak, the measured ion current is compared with a calculated value based on the least-squares fit.
3. Ion currents are converted to corrected partial pressures, and printed along with the summed total.
4. The partial pressures of the hydrocarbons are summed and printed separately.
5. The percentage composition is calculated and printed.
6. The ion currents of the RGA are summed and divided by the ion gage pressure to give a check on the total sensitivity of the RGA.
7. The readings from the RGA and the ion gage are compared by summing the partial pressures and comparing the total pressure to the reading from the ion gage after it has been corrected for composition.

The computer next sorts the data and prints the time versus partial pressure for each gas. If desired there is an option which fits these values to a power equation:

$$P = A(t/t_0)^B, \quad (3)$$

where

- P = partial pressure (in torr),
 A = intercept at time t_0 (in torr),
 t = time (in hours),
 t_0 = 1 hr, and
 B = slope of the curve of the log of the partial pressure versus the log of time.

The values of A and B are tabulated for each gas. Equation (3) describes some cases of simple outgassing and will not hold for pressure changes with temperature or more complex changes of pressure with time. A qualitative assessment of the fit of the RGA results to the specified function can be obtained from the correlation coefficient and correlations of determination. These are convenient and useful for testing the fit and comparing the scatter in data for different gases or from different runs. The tabular output includes 95% confidence limits for B and for the log of the partial pressures (designated as $\log y$ in the computer print-out).

The program provides for a graphical output of the log of the partial pressure versus time or temperature on either a linear or logarithmic scale. Such graphs may be produced for the ion gage pressure, for the partial pressure of each gas, or that of the summed hydrocarbons. The data may also be plotted in a composite graph which shows the pressure relationships for any or all gases. The following options are available: (1) use the fitted values from Eq. (3) to draw a line through the data, (2) plot points only, and (3) connect points by a line.

The program for the determination of partial pressures, together with an example of an experiment where data were taken for a period of 350 hr at a constant temperature, is included in this report in the Appendix.

Another report⁸ has been written to describe a program to compute the composition, quantity, and outgassing rates (in torr liters per second) of various gases in a vacuum system. In this case a more sophisticated vacuum system is necessary in which additional ion gages and calibrated conductances are included.

⁸D. S. Easton, Sandra H. Merriman, Carla L. Armstrong, and R. E. Clausing, A Computer Program for Calculating, Tabulating, and Plotting Outgassing Rates of Selected Gases, ORNL-TM-3220 (February 1971).

6,7 MISSING

8

APPENDIX

9

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**FTN. L.F.C.
PROGRAM PARTIAL PRESSURE
C
C THIS PROGRAM IS A METHOD OF DETERMINING THE PARTIAL PRESSURES OF 12
C GASES FROM RESIDUAL GAS ANALYZER DATA.
C THE PROGRAM USES DATA TAKEN AT INTERVALS OF TIME AND/OR TEMPERATURE
C FROM A RESIDUAL GAS ANALYZER AND ION GAGE TO CALCULATE THE FOLLOWING
C VALUES OF VARIOUS GASES: (1) PARTIAL PRESSURE,
C (2) FIT OF THE PARTIAL PRESSURE VS. TIME TO AN ANALYTICAL EXPRESSION,
C (3) PROVIDES FOR GRAPHICAL PLOTTING, (4) PRINTS OUT CERTAIN CONTROL
C DATA FOR INFORMATION AND IDENTIFICATION.
C THE PROGRAM INCLUDES THESE 4 SUBROUTINES (1)PRINT, (2)LSFIT,
C (3)HMINV, (4)GRAPHS.
C THE FOLLOWING DATA ARE NECESSARY FOR THE PROGRAM
C 1. DATE
C 2. ACCUMULATED TIME
C 3. TEMPERATURE OF THE SAMPLE
C 4. ION GAGE PRESSURE (TORR)
C 5. CERTAIN SELECTED PEAKS (ION CURRENT IN AIPS) FROM A RESIDUAL
C GAS ANALYZER.
C 6. TEMPERATURE OF THE APPARATUS.
C IN ADDITION THE CRACKING PATTERN, SENSITIVITY (AIPS/TORR), AND THE
C IONIZATION CONSTANTS (NORMALIZED TO NITROGEN) FOR EACH GAS MUST BE
C KNOWN. HOWEVER, THESE VALUES NEED NOT BE CALCULATED FOR EVERY RUN
C AS DO THE VALUES LISTED ABOVE.
C FOR EACH SET OF DATA ONE ELAPSED TIME OR TEMPERATURE, OUTPUT CONSISTS
C OF MEASURED PEAK HEIGHT, THE CALCULATED PEAK, DIFFERENCE BETWEEN
C THE MEASURED AND CALCULATED PEAK, THE PERCENT DIFFERENCE, THE
C PARTIAL PRESSURE OF EACH GAS, PERCENT OF TOTAL PRESSURE FOR EACH
C GAS, THE SUM OF THE CURRENTS, TOTAL CURRENT/ION GAGE PRESSURE, THE
C SUM OF PARTIAL PRESSURES, THE ION GAGE ADJUSTED PRESSURE, AND THE
C DIFFERENCE IN THE ION GAGE PRESSURE AND SUM.
C AN ADDITIONAL PRINT OUT SHOWS EACH GAS AND ALL THE ACCUMULATED
C PARTIAL PRESSURES AS A FUNCTION OF TIME AND TEMPERATURE.
C THE USER MAY SPECIFY 2 OTHER OPTIONS
C 1. BY SETTING LSOFIT=1, PROGRAM WILL PRINT A TABULATED LEAST SQUARE
C FIT OF PARTIAL PRESSURE VS. TIME. A CURVE OF THE FORM
C Y=AXX+BX WILL BE FITTED TO THE DATA. IN THIS EQUATION,
C Y=PARTIAL PRESSURE, X=INTERCEPT AT TIME 1, X=TIME IN HOURS,
C AND B=SLOPE OF CURVE ON LOG-LOG PLOT.
C 2. A SETTING OPTION ALLOWS THE USER TO OBTAIN LOG-LOG OF LOG-LINEAR
C PLOTS OF PARTIAL PRESSURE VS. TIME OR TEMPERATURE FOR EACH
C GAS PLUS A COMPOSITE PLOT OF A SELECTION OF GASES.
C
C *** PREPARING INPUT ***
C
C ALL DATA CARDS FOLLOW THIS CONTROL CARD
C //GO,FTSOFCOI DO *
C
C THE FOLLOWING DATA ARE ENTERED IN COLUMNS THAT ARE RIGHT ADJUSTED.
C THE DATA CARDS OR SETS OF CARDS ARE ASSEMBLED AS FOLLOWS
C 1. CONTAINS THE VALUE OF LSOFIT IN COLUMN 8. IF THIS OPTION IS NOT
C DESIRED, INCLUDE A BLANK CARD.
C 2. A SET OF CARDS NUMBER OF PEAKS * 21 CONTAINING VALUES OF THE
C CRACKING PATTERN OF THE GASES, IN FIELDS OF 8 COLUMNS EACH.
C
C FOR EACH W/E VALUE, THERE MUST BE 2 CARDS, THE FIRST CONTAINING
C THE CRACKING PATTERN OF H, HE, CH4, H2O, N2, CO, O2, AR, CO2,
C C2H6, THE SECOND CONTAINING C2H4, C2H2.
C 3. VALUES OF THE IGA SENSITIVITY (IN AIPS/TORR) OF THE ABOVE GASES
C IN THE SAME ORDER, 8 COLUMNS, 10 PER CARD.
C 4. CARDS CONTAINING THE IONIZATION CONSTANTS OF THE GASES, 8
C COLUMNS, 10 PER CARD.
C 5. TEMPERATURE OF THE APPARATUS IN DEGREES C, (C1), COLUMN 1-8.
C 6. 2 CARDS FOR IDENTIFICATION OF RUN, COLUMNS 1-8.
C 7. A SET OF CARDS FOR EACH TIME/TEMP. RUN CONTAINING
C A. 1 CARD WITH THE FOLLOWING 4 VALUES IN FIELDS OF 8 COLUMNS
C EACH: DATE/DAY AND MONTH, TIME/HOURS, TEMPERATURE
C IN DEGREES C1, AND ION GAGE PRESSURE.
C B. VALUES OF ION CURRENTS OF 18 PEAKS AT W/E VALUES OF
C 2,4,12,13,14,15,16,17,18,22,26,27,28,29,30,32,40,AND 44.
C 8 COLUMNS, 8 PER CARD.
C C. 1 BLANK CARD.
C IF PLOTS ARE DESIRED, SEE SUBROUTINE GRAPHS FOR DATA CARD DESCRIPTION
C AND INCLUDE THESE DATA CARDS HERE. IF NO PLOTS ARE DESIRED, THIS
C INCLUDES DATA. THE LAST 2 CARDS IN THE DECK ARE THE FOLLOWING
C CONTROL CARDS.
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101* FORMAT ('OSUM OF CURRENTS = ',1PE12.5,' AMPS/' SENSITIVITY (TOTAL
1 CURRENT/ION GAGE PRESSURE) = ',E12.5,' AMPS/TORR/' SUMMATION PART
2IAL PRESSURE = ',E12.5,' TORR/'
3
4 * TORR/' DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PAR
5TIAL PRESSURES) = ',E12.5,' TORR/' PERCENT DIFFERENCE = ',OPF9.3)
6 GO TO 6
16 IF (AC.EC.2) GO TO 24
NC=NC-1
ML=M+3
C
C SUBROUTINE PRINT PRINTS EACH GAS AND THE PARTIAL PRESSURES (FUNCTION
C OF TIME AND TEMPERATURE), ACCUMULATED FROM ALL THE CASES.
C
CALL PRINT(PRESS,HOURS,TEMP,ML,TITLE,NC,HEADING,8)
DO 22 I=1,ML
IF(LSCFIT.EQ.0) GO TO 22
IF(2*I-1
15=2*I-1
PRINT 1021,TITLE(I),TITLE(I+1)
1021 FORMAT(1H1/// ' GAS IS ',2AB//)
C
C SUBROUTINE LSFIT FINDS A AND B (IN EQUATION Y=A*X**B) BY METHOD OF
C LEAST SQUARES. (X=TIME, Y=PARTIAL PRESSURE)
C
27 CALL LSFIT(NC,HOURS,PRESS (1,1),AS(1),BS(1))
C
C IF YOU TO SEE IF PLOTS ARE DESIRED * IF SO, SET UP LIMITS FOR PLOTTING
C
273 READ (50,1025,FND=24) LINE
1025 FORMAT (1P)
XAL(1)=1000.
XAL(2)=0.
VL(1)=J
VL(2)=0.
DO 21 J=1,NC
IF (HOURS(J).LT.XAL(1)) XAL(1)=HOURS(J)
IF (HOURS(J).GT.XAL(2)) XAL(2)=HOURS(J)
DO 21 I=1,ML
IF(PRESS(J,1).LT.VL(1)) VL(1)=PRESS(J,1)
IF(PRESS(J,1).GT.VL(2)) VL(2)=PRESS(J,1)
21 IF(PRESS(J,1).GT.VL(2)) VL(2)=PRESS(J,1)
CALL GRAPH5(PRESS,HOURS,XTIT(1),ML,TITLE,NC,BS)
CALL GRAPH5(PRESS,TEMP,XTIT(3),ML,TITLE,NC,BS)
CALL ADVANS
24 END

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SUBROUTINE PRINT(X,HOURS,TEMP,ML,TITLE,NC,HEADING,N)
C
C
REAL*8 TITLE(50),HEADING(14)
DIMENSION X(50,2),HOURS(50),TEMP(50)
NPAGES=NC/55
IF(NC-NPAGES>55)
DO 70 I=1,ML,2
IF(2*I-1
IK=IS+7
IF(NPAGES.GE.1) GO TO 140
IF(I.GT.1) GO TO 140
TEMP=0
LINES=NC
JJ=0
GO TO 150
140 L=0
LINES=55
165 JJ=55+L
170 DO 19 J=1,LINES
IF(I.EQ.0,ML,AND,J.FQ.1) 17,18
17 PRINT 1017,(HEADING(I),I=N,N+6),TITLE(I),TITLE(I+1),HOURS(JJ),
1 TEMP(JJ),X(JJ,1)
1017 FORMAT(1H1/// 'X,7AB//2AB,F7.2,3X,F9.2,5X,1PE13.5)
GO TO 19
18 IF(I.NE.ML) GO TO 120
PRINT 1018,HOURS(JJ),TEMP(JJ),X(JJ,1)
1018 FORMAT(14X,F7.2,3X,F9.2,5X,1PE13.5)
GO TO 19
120 IF(J.FQ.1) 117,118
117 PRINT 2017,(HEADING(I),I=N,N+6),(HEADING(I),I=N,N+6),TITLE
1 (I),TITLE(I+1),HOURS(JJ),TEMP(JJ),X(JJ,1),TITLE(IK),TITLE
2 (IK+1),HOURS(JJ),TEMP(JJ),X(JJ,1)
2017 FORMAT(1H1/// 'X,7AB,7X,7AB//2(2AB,OPF7.2,3X,F9.2,5X,1PE13.5,
1 10X)
GO TO 19
118 PRINT 2018,HOURS(JJ),TEMP(JJ),X(JJ,1),HOURS(JJ),TEMP(JJ),X(JJ,1+1)
2018 FORMAT(16X, OPF7.2,3X,F9.2,5X,1PE13.5,26X,OPF7.2,3X,F9.2,5X,
1 1PE13.5)
19 CONTINUE
IF(NPAGES.EQ.0) GO TO 20
L=L+1
IF(L-NPAGES) 165,120,20
130 IF(TEMP.EQ.0) GO TO 20
LINES=TEMP
GO TO 150
CONTINUE
RETURN
END

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C SUBROUTINE HPMINV(A,N,B,M,ELEAST,ITER,P=0.1)
C
C T=15 IS CORN FOR 22 OF 2-68
C #1 UCSD HPMINV
C HIGH PRECISION MATRIX INVERSION
C
C DIMENSION A(15,15),B(15,15),E(15,15),IPVCT(15),JPIVCT(15),PROM(15)
C EQUIVALENCE (C,PROM)
C
C INITIALIZATION
C
C L=N-1
C DO 5 J=0,L
C   T=150+J
C   DO 4 K=1,N
C     I=1+I
C     A(I)=A(I)
C     DO 3 J=1,N
C       IPVCT(J)=0
C     JPIVCT(J)=0
C   DO 2 I=1,N
C     SEARCH FOR PIVCT ELEMENT
C
C     BMAX=0.0
C     L=N-1
C     DO 25 J=0,L
C       IF(JPIVCT(J+1)-1)11,25,25
C       I=150+J
C       DO 24 K=1,N
C         I=1+I
C         IF(IPVCT(K)-1)11,24,24
C         X=ABS(P(I))
C         IF (P(I)-X)21,24,24
C         BMAX=X
C         IF(X=1-J)11
C         JCOL=J+1
C         CONTINUE
C       CONTINUE
C       CONTINUE
C       IPVCT(JROW)=JCOL
C       JPIVCT(JCOL)=JROW
C       PIVCT=B(I,PROM,JCOL)
C
C       REPLACE PIVCT COLUMN WITH ROW MULTIPLIERS
C
C       DO 34 K=1,N
C         IF(IROW-K)21,33,31
C         B(K,JCOL)=B(K,JCOL)/PIVCT
C       DO 32 K=1,N
C         B(K,JCOL)=1.0/PIVCT
C       CONTINUE
C
C       REDUCE NON PIVCT COLUMNS
C
C       DO 36 I=1,N
C         PROM(I)=B(IROW,I)
C         DO 35 J=1,N
C           IF(JCOL-J)39,42,39
C           DO 44 K=1,N
C             IF(IROW-K)41,43,41
C             B(K,J)=B(K,J)-B(K,JCOL)*PROM(I)
C           DO 42 K=1,N
C             B(K,J)=B(K,J)/PIVCT
C           CONTINUE
C         CONTINUE
C
C       INTERCHANGE ROWS AND COLUMNS
C
C       DO 46 I=1,N
C         J=JPIVCT(I)
C         DO 45 K=1,N
C           B(I,K)=B(J,K)
C         LL=N-1
C         DO 50 J=0,LL
C           T=150+J
C           K=JPIVCT(J+1)
C           L=150+K-1
C           DO 51 J=1,N
C             DO 52 I=1,N
C               L=L+1
C               B(I)=B(I)
C             CONTINUE
C           IF(I)55,57,61
C
C       COMPUTE P=1/(ABS) AND FIND LARGEST ABSOLUTE VALUE
C

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C1 ITER=0
C2 KK=0
C3 P=0.0
C4 DO 76 J=1,N
C5 DO 76 I=1,N
C6 P(I,J)=0.0
C7 DO 88 K=1,N
C8 E(I,J)=F(I,J)+A(I,K)*B(K,J)
C9 IF(I-J)72,70,72
C10 F(I,J)=1.0-E(I,J)
C11 DO 76 J=1,N
C12 E(I,J)=E(I,J)
C13 V=ABS(F(I,J))
C14 IF(PMAX-V)75,76,76
C15 PMAX=V
C16 CONTINUE
C17 IF(KK-1)78,95,95
C18 IF(ELEAST)95,95,70
C19 ITER=ITER+1
C
C COMPUTE I=P
C
C DO 82 I=1,N
C1 J=I
C2 F(I,J)=F(I,J)+1.0
C
C COMPUTE FINISHED INVERSE,B=B(I+P)
C
C DO 83 I=1,N
C4 DO 84 J=1,N
C5 C(J)=C.0
C6 DO 87 K=1,N
C7 C(J)=C(J)+B(I,K)*F(K,J)
C8 CONTINUE
C9 DO 90 L=1,N
C10 P(I,L)=C(L)
C11 CONTINUE
C12 IF(ITER=1)93,93,93
C13 KK=KK+1
C14 DO 76 J=1,N
C15 RETURN
C16 END

```

```

SUBROUTINE GRAPH5(PRESS, HOURS, XTIT, PL, TTLL, NC, BS)
C
C *** PLOTTING OPTIONS ***
C IF PLOTS ARE OBTAINED, THEY ARE REQUESTED BY THE FOLLOWING DATA CARDS
C (PLACE AFTER THE BLANK CARD IN THE MAIN PROGRAM). COLUMNS 1-5.
C RIGHT ADJUSTED.
C 1. 1 CARD FOR POINTS ONLY SET=1
C 2. 6 CARDS REPRESENT 6 PLOTTING OPTIONS OF PARTIAL PRESSURE .VS.
C TIME AND ARE REPRESENTED BY THE INTEGERS P(1)-P(6) WHICH ARE
C DESCRIBED BELOW. IF ANY OPTION IS OMITTED, PLACE A C IN COLUMN 5 OR
C INCLUDE A BLANK CARD. IF THE SIGN OF P(1)-P(6) IS NEGATIVE, A FITTED
C LINE TO THE EXPRESSION Y=AXX+B WILL BE DRAWN.
C CARD 1. P(1), LOG PARTIAL PRESSURE .VS. LOG TIME
C FOR PLOTS, SET=1 OR -1 (FITTED)
C FOR NC PLOTS, SET=0
C CARD 2. P(2), LOG PARTIAL PRESSURE .VS. LINEAR TIME
C FOR PLOTS, SET=1 OR -1
C FOR NC PLOTS, SET=0
C CARD 3. P(3), LOG PARTIAL PRESSURE .VS. LOG TIME OF SELECTED GASES.
C SET VALUE EQUAL TO THE NUMBER OF GASES TO BE PLOTTED.
C FOLLOW THIS NUMBER BY THE FIRST 4 LETTERS OF EACH GAS AND
C PRECEDE EACH BY A SPACE. EXAMPLE 3 C3H8 HYDRO TOTA
C ***EXCEPTION*** USE WATR TO REPRESENT WATER VAPOR.
C CARD 4. P(4), SAME AS P(2) EXCEPT LOG-LINEAR.
C CARD 5. P(5), LOG PARTIAL PRESSURE .VS. LOG TIME. COMPOSITE GRAPH
C WHICH INCLUDES ALL GASES.
C FOR PLOT, SET=1 OR -1
C FOR NC PLOT, SET=0
C CARD 6. P(6), SAME AS P(5) EXCEPT LOG-LINEAR.
C THE NEXT 6 CARDS REPRESENT 6 PLOTTING OPTIONS OF PARTIAL PRESSURE .VS.
C TEMPERATURE AND VALUES ARE SET THE SAME AS P(1)-P(6). THERE IS NO
C OPTION FOR ADDING FITTED LINES, THEREFORE ALL VALUES ARE POSITIVE.
C
C *****THERE MUST BE 12 DATA CARDS IN ALL FOR PLOTTING.
C THE LAST 2 CARDS IN THE DECK ARE THE FOLLOWING CONTROL CARDS
C /#
C //
C
REAL PL, TTLL, XTIT, TTT, GASLFC
INTEGER P(6)
COMMON /PLOT/ PRESS( 50,20), NS( 50), HOURS( 50,20), CALCG
1 ( 50,20), TTEMP( 50,20)
COMMON /HLOC/ XAL, YL, TTLL, GASLFC
COMMON /PLOT/ LINE
DIMENSION XAL(2), YAL(2), XAL(2), TLL(6,20), ICPL(25), BUF(3000), YL(2),
IMPRES( 20), PRESS( 50,20), TTLL( 50), XTIT(4), TTT(20), TTLL(40),
P( 50), GASLFC(50), NS(20)
DATA (TTT)=1
DATA (TTLL)=20
DATA (XAL)=1.0E-02, 1.0E+03, (YAL)=1.0E-10, 1.0E+01
C
C X=LCE SCALE X, Y=LCE SCALE Y
C
C X=LCE SCALE X, Y=LCE SCALE Y
C IF PLOTTING PRESSURE .VS. TEMPERATURE, CHANGE LIMITS ON X AXIS TO
C CORRESPOND TO TEMPERATURE, INSTEAD OF TIME.
C
IF (TIME, FC, 1) GO TO 3
XAL(1)=1000.
XAL(2)=0.
DO 1 J=1, NC
IF (HOURS(J), LT, XAL(1)) XAL(1)=HOURS(J)
IF (HOURS(J), GT, XAL(2)) XAL(2)=HOURS(J)
1 CONTINUE
NBOY=0
CALL QDCPA(9, 0)
CALL QDCPA(10, LINE)
C
C REAC PLOTTING OPTIONS
C
DO 200 I=1, 6
READ 1001, P(I), (TTLL(I, J), J=1, 15)
1001 FORMAT(F, 15A5)
200 CONTINUE
DO 300 I=1, 6
I=(P(I), EQ, 0) GO TO 300
N=125(P(I))
GO TO (400, 400, 100, 102, 101, 101) I
C

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C THIS SECTION PLOTS OPTIONS 3,4,5,6. EACH OF THESE OPTIONS PRODUCES
C ONLY 1 GRAPH.
C SET UP LEGEND FOR PLOTTING ALL GASES ON 1 PLOT.
C
101 DO 7 J=1, ML
  DFCODE(5,1007,GASLFC(J)) TTLL(J,J)
1003 FORMAT(AS)
7 CONTINUE
  IF (FC, 5) GO TO 100
102 CALL SETPL(XAL, YAL, 2, 'YLOG', 'MECH', 0, 0, BUF, 3000)
  GO TO 170
100 CALL QDCPA(5, 6, 25)
  CALL SETPL(XAL, YAL, 2, 'LOG', 'MECH', 0, 0, BUF, 3000)
130 NSY=0
  CALL TITLE(2, 'SELECTED GASES', XTIT, 'PRESSURE (TOPP)')
  CALL SYMBOL(1, 10, 03, 1, TTLL(1), 0, 80)
C
C TEST TO SEE IF NAMES OF GASES ON DATA CARDS ARE CORRECT. IF NOT, THAT
C GAS IS NOT PLOTTED.
C
  DO 12 K=1, NP
    J=1, ML
    IF (CCHAR(TTLL(1,K), GASLFC(J), 5) .EQ. C) GO TO 9
9 CONTINUE
    PRINT 1002, I
1002 FORMAT(1) THE INPUT CARD WITH P, 11, .ETC. IS WRONG. CHECK THE NAMES.
    LINES WITH UNRECOGNIZED NAMES WILL BE OMITTED FROM THE PLOT.
    GO TO 12
10 IF (K(J), LT, 2) GO TO 12
  CALL RAYPLT(HOURS(J), PRESS(1,J), NS(J))
C
C TEST TO SEE IF A FITTED LINE IS DESIRED.
C
  IF (P(1), GT, 0) GO TO 11
  CALL QDCPA(10, 0)
  CALL LINPL(HOURS(1,J), CALCG(1,J), NS(1,J), 0, 0)
  CALL QDCPA(10, LINE)
11 NSY=NSY+1
  TTT(NSY)=TTLL(1,K)
12 CONTINUE
  YBOX=2, 2*NSY
  CALL LEGEND('LEGEND', 0, -NSY, TTT(1), -8, 1, YBOX, 6, 75, 10, 1)
  GO TO 300
C
C THIS SECTION PLOTS OPTIONS 1 AND 2. 1 PLOT PER GAS.
C
400 IF (NCTH, FC, 1) GO TO 300
  DO 4 J=1, ML
    IF (P(2), EQ, 0) GO TO 4
    IF (NS(J), LT, 2) GO TO 4
    CALL QDCPA(5, 6, 25)
    CALL SETPL(XAL, YAL, 2, 'YLOG', 'MECH', 0, 0, BUF, 3000)
    CALL TITLE(2, 'S', XTIT, 'PRESSURE (TOPP)')
    CALL SYMBOL(1, 10, 03, 1, TTLL(2,J-1), 0, 16)
    CALL SYMPL(1, 10, 03, 1, TTLL(2,J-1), 0, 16)
    CALL RAYPLT(HOURS(J), PRESS(1,J), NS(J))
    IF (P(2), GT, 0) GO TO 4
    CALL SYMPL(4, 10, 03, 14, 'TEMP', 0, 0, 8)
    CALL NUPER(5, 10, 03, 14, NS(J), 0, 7, HLOC, 3)
    CALL QDCPA(10, 0)
    CALL LINPL(HOURS(1,J), CALCG(1,J), NS(1,J), 0, 0)
    CALL QDCPA(10, LINE)
4 IF (P(2), EQ, 0) GO TO 5
  IF (NS(J), LT, 2) GO TO 5
  CALL QDCPA(5, 1)
  CALL SETPL(XAL, YAL, 2, 'YLOG', 'MECH', 0, 0, BUF, 3000)
  CALL TITLE(2, 'S', XTIT, 'PRESSURE (TOPP)')
  CALL SYMBOL(5, 10, 03, 21, TTLL(2,J-1), 0, 16)
  CALL SYMPL(5, 10, 03, 1, TTLL(2,J-1), 0, 16)
  CALL RAYPLT(HOURS(J), PRESS(1,J), NS(J))
  NBOY=1
  IF (P(2), GT, 0) GO TO 5
  CALL QDCPA(10, 0)
  CALL LINPL(HOURS(1,J), CALCG(1,J), NS(1,J), 0, 0)
  CALL QDCPA(10, LINE)
5 CONTINUE
100 CONTINUE
32 TIME=2
  QTIME
  ENC

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NAME	ORIGIN	LENGTH	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION	NAME	LOCATION
INTORCO *	26A98	10F	EXIT	26A78						
INRGZZZZ*	26B68	40	INTORC	26A58	INTRCDL	26A6C	INTRCD	26A6C		
LOC	26B6F	A								
IMCFMAXI*	26BFB	C9	MAXO	26BF8	MAXO	26C0E	AMAXO	26C24	AMINO	26C3A
REPLACE *	26C08	50	REPLAC	26C0F						
IMCFRXP*	26D18	94	FRXP*	26D18						
BLK18888	26D90	CC								
EATOGRI8	2AERO	A								
DUMPCD8	26F88	30								
CSECT88	2AER8	12C4								
ENTRY ADDRESS	00									
TOTAL LENGTH	28180									
*****NAMEX COFS NOT EXIST BUT HAS BEEN ADDED TO DATA SET										

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IEF2851 LABLIB KEPT
IEF2851 VOL SER NOS= MVT17P.
IEF2851 AB.G1.P31394.C10207.CHANDLER.GRAPHICS KEPT
IEF2851 VOL SER NOS= 777777.
IEF2851 LABLIB KEPT
IEF2851 VOL SER NOS= MVT17P.
IEF2851 SYS70265.T094821.SV000.CLAP.R0000050 SYSOUT
IEF2851 VOL SER NOS= RRRRR.
IEF2851 SYS70265.T094821.RV000.CLAP.UT#1 DELETED
IEF2851 VOL SER NOS= EEEEE.
IEF2851 SYS70265.T094821.RV000.CLAP.FJCLIB PASSED
IEF2851 VOL SER NOS= CLIB01.
IEF2851 SYS70265.T094821.RV000.CLAP.UT3C DELETED
IEF2851 VOL SER NOS= 333333.
IEF2851 SYS70265.T094821.RV000.CLAP.S0000051 SYSIN
IEF2851 VOL SER NOS= YYYYYY.
IEF2851 SYS70265.T094821.RV000.CLAP.S0000051 DELETED
IEF2851 VOL SER NOS= YYYYYY.

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CLAP LINK 18.52.40 10-22-70
CPU SEC.= 3.21// I/O REQUESTS= 470// REGION ALLOC.= 256K// MACH. USE SPC.= 7.68// REGION USED= 250K

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XXGO EXEC PGM=*.LINK.SYSLMOD,CONC=(10,LT,FT63),(5,LT,LINK), *00000240
XX REGION=256K *00000250
XXFT51F001 CD SYSCUT=A,SPACE=(3450,(6PHM,ESFC),PLSF), X00000260
XX DCB=(RECFM=FBA,LRECL=133,RLKSIZE=3450) *00000270
XX X00000280
XXFT53F001 DD DSN=PECFJBLIB(INAMEX),DISP=(OLD,DELETE), X00000290
XX DCB=(RECFM=U,RLKSIZE=256),LABEL=(,,IN) *00000300
XXFT55F001 DD DSN=PECFJBLIB(INAMEX),DISP=(OLD,DELETE), *00000310
XX DCB=(RECFM=FBA,LRECL=20,RLKSIZE=320) *00000320
//GO.FT52F001 DD SYSCUT=B,DCB=(RECFM=FBA,LRECL=30,RLKSIZE=3520),
// SPACE=(3520,(1),PLSF)
//GO.FT50F001 CD *
//
IEF2361 ALLOC. FOR CLAP GO
IEF2371 PGM=*.CD ON 233
IEF2371 FT51F001 ON 232
IEF2371 FT53F001 ON 233
IEF2371 FT55F001 ON 231
IEF2371 FT52F001 ON 231
IEF2371 FT50F001 ON 234

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*** CURRENT DATE IS 10-22-70 ***
 NEVA KE-II FUEL ELEMENT PARTIAL PRESSURE PROGRAM
 CEMEX EASTON

RUN NO. 101, 600-C, 350 HP AT 70 DEG

APPARATUS TEMPERATURE (C) = 60.

*** CRACKING PATTERN ***

N/E	H	HPLIUM	METHANE	WATER VAPOR	NITROGEN	CC	OXYGEN	ARGON	CO2	C2H4	C2H6	C3H8
2	1.0000	0.0	0.0070	0.0	0.0	0.0	0.0	0.0	0.0	0.0290	0.0040	0.0040
4	0.0	1.0000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0210	0.0	0.0	0.0200	0.0	0.0	0.0250	0.0120	0.0030	0.0050
13	0.0	0.0	0.0590	0.0	0.0	0.0	0.0	0.0	0.0	0.0120	0.0040	0.0040
14	0.0	0.0	0.1450	0.0	0.0000	0.0000	0.0	0.0	0.0	0.0400	0.0200	0.0250
15	0.0	0.0	0.8000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0270	0.0250
16	0.0	0.0	1.0000	0.0380	0.0	0.0080	0.0790	0.0	0.0540	0.0	0.0030	0.0130
17	0.0	0.0	0.0120	0.2660	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	1.0000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	1.0000	1.0000	0.0	0.0	0.1640	1.0000	1.0000	0.7180
29	0.0	0.0	0.0	0.0	0.0100	0.0100	0.0	0.0	0.0	0.0250	0.2000	1.0000
30	0.0	0.0	0.0	0.0	0.0	0.0020	0.0	0.0	0.0	0.0	0.2440	0.0220
32	0.0	0.0	0.0	0.0	0.0	0.0	1.0000	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0000	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0000	0.0	0.0	0.4400

*** CORRECTION CONSTANTS ***

IONIZATION * PGA SENSITIVITY * MASTER CONSTANT	AMPS/TORR
HPLIUM	0.4600
METHANE	0.1670
WATER VAPOR	1.0000
NITROGEN	1.0000
CO	1.0000
OXYGEN	1.0000
ARGON	1.0000
CO2	1.0000
C2H4	1.0000
C2H6	1.0000
C3H8	1.0000

*** CURRENT DATE IS 10-22-70 ***
 RUN NO. 101, 600-C, 350 HP AT 70 DEG

RUN NO. 101, 600-C, 350 HP AT 50 DEG

CATE = 2.13

HOURS = 2.00

TEMPERATURE (DEGREE C.) = 49.25

ION GAGE (TORR) = 3.35000E-06

THERMAL CORRECTION = 3.52944E-06

M/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED M/E	DIFFERENCE	PERCENT DIFF
2	5.90000E-09	5.85980E-08	-2.34479E-13	-39.74221E-05
4	1.00000E-12	1.00000E-12	0.0	0.0
12	1.29000E-08	6.10752E-09	-6.39648E-09	-51.17183E 00
13	8.00000E-10	-7.88604E-10	-1.2861E-09	-16.8577E 01
14	4.70000E-09	2.56036E-09	-2.13964E-09	-45.52414E 00
15	7.00000E-09	1.58629E-09	8.36251E-09	11.15054E 01
16	6.99000E-08	6.36319E-08	-6.26807E-09	-89.67196E-01
17	4.95000E-07	5.04640E-07	9.64047E-09	19.4770E-01
18	1.70000E-06	1.89767E-06	2.32031E-09	-12.29424E-02
22	3.40000E-09	-3.91450E-10	-3.99145E-09	-11.11841E 01
26	3.60000E-09	-1.07028E-08	-1.41027E-08	-39.17429E 01
27	5.60000E-09	1.89157E-08	1.33157E-08	23.77801E 01
28	4.05000E-07	4.05252E-07	2.52789E-10	62.31721E-03
29	1.10000E-07	1.03702E-07	-6.2978E-09	-57.25166E-01
30	4.10000E-09	3.51287E-09	-7.86124E-10	-18.28207E 00
32	1.75000E-08	1.39591E-08	-4.95145E-10	-28.26774E-01
40	2.00000E-09	2.00000E-09	0.0	0.0
44	4.40000E-09	5.09909E-09	4.99099E-10	10.84992E 00

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	3.52944E-06	
SUM OF PARTIAL PRESSURES	3.48012E-06	99.9999E 00
H	2.82457E-07	81.1630E-01
HELIUM	2.70818E-12	72.0716E-06
METHANE	-1.99669E-08	-57.7730E-02
WATER VAPOR	2.85617E-06	82.0709E 00
NITROGEN	1.11742E-08	32.1095E-02
CO	3.14947E-07	91.0734E-01
CHYGEN	1.64992E-09	47.98453E-02
ARGON	2.21812E-09	63.7768E-03
CO2	-2.94594E-08	-84.6476E-02
C2H4	-4.60429E-08	-13.23012E-01
C2H6	1.64529E-09	47.1297E-02
C3H8	8.82829E-08	25.3677E-01
HYDROCARBONS	2.35149E-08	68.7173E-02

SUM OF CURRENTS = 3.10150E-06 AMPS

SENSITIVITY (CYCL CURRENT/ION GAGE PRESSURE) = 4.2582E-01 AMPS/TORR

SUMMATION PARTIAL PRESSURE = 3.48012E-06 TORR

ION GAGE ADJUSTED PRESSURE = 3.87367E-06 TORR

DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 3.90552E-07 TORR

PERCENT DIFFERENCE = 10.073

RUN NO. 101, 600-C, 350 HP AT 50 DEG

CATE = 2.14

HOURS = 2.00

TEMPERATURE (DEGREE C.) = 49.25

ION GAGE (TORR) = 1.80000E-07

THERMAL CORRECTION = 1.89652E-07

M/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED M/E	DIFFERENCE	PERCENT DIFF
2	8.40000E-09	8.79999E-09	-4.26220E-14	-49.44610E-05
4	1.00000E-13	1.00000E-13	0.0	0.0
12	1.10000E-09	1.71800E-09	6.17999E-10	56.18138E 00
13	5.00000E-11	-2.14947E-11	-7.14947E-11	-14.28697E 01
14	3.20000E-10	5.21287E-10	2.01287E-10	62.93590E 00
15	4.60000E-10	-3.37074E-10	-7.97074E-10	-17.11030E 01
16	3.50000E-09	4.07878E-09	5.78782E-10	16.53642E 00
17	1.40000E-08	1.07364E-08	-1.07364E-09	-76.68889E-01
18	5.70000E-08	5.66929E-08	-3.0751E-10	-53.95449E-02
22	3.00000E-10	3.57940E-10	5.79409E-11	19.31552E 00
26	2.50000E-10	3.15233E-10	6.32333E-11	25.29309E 00
27	5.60000E-10	4.82039E-10	-6.17960E-11	-11.03514E 00
28	5.20000E-08	5.15785E-08	-2.15010E-11	-41.34811E-03
29	7.20000E-10	9.54614E-10	2.34614E-10	32.58529E 00
30	2.40000E-10	2.49019E-10	9.01919E-11	37.59129E 00
32	2.40000E-09	2.25427E-09	-4.57259E-11	-19.88080E-01
40	8.40000E-11	8.50000E-11	0.0	0.0
44	3.60000E-09	3.59997E-09	-4.43308E-13	-12.31409E-02

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	1.89652E-07	
SUM OF PARTIAL PRESSURES	1.96185E-07	99.9999E 00
H	4.15298E-08	21.16872E 00
HELIUM	2.90818E-12	12.78479E-04
METHANE	-9.32007E-10	-47.95756E-02
WATER VAPOR	8.53274E-08	43.49339E 00
NITROGEN	3.38098E-09	17.23161E-01
CO	3.60046E-08	18.35359E 00
CHYGEN	2.68983E-09	13.71070E-01
ARGON	9.42701E-11	48.05170E-03
CO2	2.49367E-08	12.73026E 00
C2H4	3.75004E-10	19.11492E-02
C2H6	4.52029E-10	23.06511E-02
C3H8	3.22478E-10	16.43745E-02
HYDROCARBONS	2.16477E-10	11.05981E-02

SUM OF CURRENTS = 1.77725E-07 AMPS

SENSITIVITY (CYCL CURRENT/ION GAGE PRESSURE) = 6.8736E-01 AMPS/TORR

SUMMATION PARTIAL PRESSURE = 1.96185E-07 TORR

ION GAGE ADJUSTED PRESSURE = 2.28412E-07 TORR

DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 3.22279E-08 TORR

PERCENT DIFFERENCE = 16.427

RUN NO. 101, 600-C, 350 HR AT 50 DEG
DATE = 2.15
HOURS = 46.00
TEMPERATURE (DEGREE C.) = 49.25
ION GAGE (TORR) = 1.20000E-07

THERMAL CORRECTION = 1.26420E-07

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	9.00000E-09	4.99999E-09	-3.99999E-10	-4.44444E-02
4	1.00000E-10	1.00000E-10	0.0	0.0
12	1.10000E-09	1.11700E-09	1.70000E-11	1.54545E-02
13	9.00000E-11	1.01999E-11	-7.98000E-12	-8.86667E-02
14	2.70000E-10	2.80000E-10	1.00000E-11	3.70370E-02
15	2.00000E-10	2.24714E-10	2.47140E-11	12.3570E-02
16	2.00000E-09	2.04999E-09	4.99999E-11	2.49999E-02
17	4.70000E-09	4.69999E-09	-1.00000E-11	-2.12766E-02
19	2.90000E-09	2.90100E-09	1.00000E-11	3.44828E-02
22	2.70000E-10	2.44000E-10	-2.60000E-11	-9.62963E-02
26	1.40000E-10	1.39999E-10	-1.00000E-11	-7.14286E-02
27	2.40000E-10	2.46633E-10	6.63300E-11	2.76333E-02
28	3.20000E-09	3.14479E-09	-5.52000E-11	-1.72500E-02
29	5.00000E-10	5.19000E-10	1.90000E-11	3.80000E-02
30	7.00000E-10	1.96954E-10	-5.03046E-10	-71.8636E-02
32	1.70000E-09	1.24609E-09	-4.53900E-10	-26.6941E-02
40	5.00000E-11	5.00000E-11	0.0	0.0
44	2.00000E-09	2.49633E-09	4.96330E-10	24.8165E-02

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	1.26420E-07	99.99999E-02
SUM OF PARTIAL PRESSURES	1.04200E-07	22.19420E-02
H	2.35200E-08	23.5220E-04
HELIUM	2.70000E-12	3.70000E-07
METHANE	3.70000E-10	3.70000E-02
WATER VAPOR	2.76400E-08	2.76400E-02
NITROGEN	6.43200E-10	6.43200E-02
CO	2.20000E-08	2.20000E-02
CHYGEN	1.94400E-09	1.94400E-02
ARGON	3.00170E-11	3.00170E-02
CO2	1.07000E-08	1.07000E-02
C2H6	7.80000E-11	7.80000E-02
C2H4	4.04100E-10	4.04100E-02
C3H8	1.11000E-10	1.11000E-02
HYDROCARBONS	9.60210E-10	9.60210E-02

SUM OF CURRENTS = 1.00000E-07 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 8.40000E-01 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 1.00200E-07 TORR
ION GAGE ADJUSTED PRESSURE = 1.22400E-07 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURE) = 4.27000E-09 TORR
PERCENT DIFFERENCE = 4.27000E-02

RUN NO. 101, 600-C, 350 HR AT 50 DEG
DATE = 2.15
HOURS = 46.00
TEMPERATURE (DEGREE C.) = 49.25
ION GAGE (TORR) = 6.50000E-08

THERMAL CORRECTION = 6.84817E-08

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	4.25000E-09	4.24999E-09	-1.00000E-11	-2.35294E-02
4	1.00000E-10	1.00000E-10	0.0	0.0
12	6.70000E-10	7.51133E-10	8.11330E-11	12.1093E-02
13	2.00000E-11	1.74769E-11	-2.52301E-12	-12.6150E-02
14	1.50000E-10	1.74999E-10	2.49999E-11	16.6667E-02
15	2.20000E-10	2.16717E-10	-3.28230E-11	-14.9195E-02
16	1.80000E-09	1.80324E-09	3.24000E-11	1.80000E-02
17	3.00000E-09	3.20179E-09	2.01790E-10	6.72632E-02
18	1.20000E-09	1.20260E-09	2.60000E-11	2.16667E-02
22	1.00000E-10	1.69709E-10	6.97090E-11	69.7090E-02
26	1.00000E-10	1.02579E-10	2.57900E-11	25.7900E-02
27	1.40000E-10	1.57199E-10	1.71990E-11	12.2850E-02
28	2.00000E-09	1.95768E-09	-4.23120E-11	-2.11560E-02
29	3.00000E-10	3.04019E-10	4.01900E-11	13.3967E-02
30	1.20000E-10	1.27719E-10	7.71900E-11	6.43250E-02
32	6.00000E-10	5.97420E-10	-2.58000E-11	-4.30000E-02
40	1.00000E-11	1.00000E-11	0.0	0.0
44	1.00000E-08	1.69900E-08	6.99000E-09	69.9000E-02

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	6.84817E-08	99.99999E-02
SUM OF PARTIAL PRESSURES	6.70030E-08	29.90446E-02
H	2.00900E-08	2.00900E-02
HELIUM	2.30010E-12	3.40007E-04
METHANE	4.09200E-10	6.01720E-02
WATER VAPOR	1.81000E-08	2.64949E-02
NITROGEN	1.46104E-10	2.14081E-02
CO	1.42499E-08	2.12821E-02
CHYGEN	7.15621E-11	1.06707E-02
ARGON	1.96631E-11	2.87670E-02
CO2	1.27714E-08	1.90476E-02
C2H6	6.24600E-11	9.19435E-02
C2H4	2.94100E-10	4.34000E-02
C3H8	5.40000E-11	8.00000E-02
HYDROCARBONS	7.22300E-10	1.07456E-02

SUM OF CURRENTS = 6.00030E-08 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 9.76540E-01 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 6.70030E-08 TORR
ION GAGE ADJUSTED PRESSURE = 6.72420E-08 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURE) = 2.11000E-09 TORR
PERCENT DIFFERENCE = 3.1410

RUN NO. 101, 600-C, 350 HR AT 50 DEG
DATE = 2.15
HOURS = 46.75
TEMPERATURE (CEGEE C.) = 49.25
ION GAGE (TORR) = 6.50000E-08

THERMAL CORRECTION = 6.84817E-08

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	4.40000E-09	4.39998E-09	-3.40795E-14	-88.81791E-05
4	1.00000E-13	1.00000E-13	0.0	0.0
12	7.00000E-09	1.15072E-09	-5.80927E-09	-82.98944E 00
13	2.80000E-11	1.67586E-11	-1.12414E-11	-40.14784E 00
14	1.40000E-10	-1.15721E-09	-1.35721E-09	-94.82546E 01
15	2.30000E-10	1.95708E-10	-0.42520E-10	-14.99959E 00
16	1.70000E-09	2.04147E-09	3.41568E-10	20.09229E 00
17	2.85000E-09	3.24269E-09	4.42699E-10	15.57307E 00
18	1.25000E-08	1.23493E-08	-1.50763E-10	-10.48947E-01
22	1.80000E-10	1.90074E-10	1.00740E-11	5.57718E-01
26	9.00000E-11	1.26340E-10	3.63400E-11	40.37810E 00
27	1.60000E-10	1.31580E-10	-2.84197E-11	-17.76231E 00
28	2.20000E-08	2.21274E-08	1.22412E-10	55.64194E-02
29	3.00000E-10	2.46142E-10	-5.76574E-11	-17.99255E 00
30	1.70000E-10	-1.51914E-10	-2.71914E-10	-22.48950E 01
32	6.00000E-10	5.73014E-10	-2.6957E-11	-44.97625E-01
40	2.00000E-11	2.00000E-11	0.0	0.0
44	1.90000E-08	1.91063E-08	1.06324E-10	55.96082E-02

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	6.84817E-08	99.99998E 00
SUM OF PARTIAL PRESSURES	7.02461E-08	99.99998E 00
H	2.07157E-09	29.49023E 00
HELIUM	2.50818E-12	35.70543E-04
METHANE	3.52149E-10	50.13340E-02
WATER VAPOR	1.84169E-08	26.50233E 00
NITROGEN	-1.54157E-09	-21.94522E 00
CO	3.07400E-09	43.76041E 00
CHYGEN	6.83728E-10	97.33323E-02
ARGON	2.21712E-11	31.97638E-03
CO2	1.43040E-08	20.26272E 00
C2H4	6.77920E-10	96.50624E-02
C2H6	-6.50482E-10	-92.60079E-02
C3H8	1.97199E-10	28.67258E-02
HYDROCARBONS	5.76806E-10	82.11219E-07

SUM OF CURRENTS = 7.13280E-08 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 1.05751E 00 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 7.02461E-08 TORR
ION GAGE ADJUSTED PRESSURE = 7.77425E-08 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 1.74964E-08 TORR
PERCENT DIFFERENCE = 24.907

RUN NO. 101, 600-C, 350 HR AT 50 DEG
DATE = 2.14
HOURS = 63.25
TEMPERATURE (CEGEE C.) = 49.25
ION GAGE (TORR) = 6.00000E-08

THERMAL CORRECTION = 5.26782E-08

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	3.80000E-09	3.84946E-09	-4.9426E-14	-11.07340E-04
4	1.00000E-13	1.00000E-13	0.0	0.0
12	4.00000E-10	6.47034E-10	4.30734E-11	71.72734E-01
13	2.00000E-11	8.70871E-12	-1.12979E-11	-56.48840E 00
14	1.70000E-10	1.46303E-10	-2.36997E-11	-12.94221E 00
15	1.95000E-10	1.59480E-10	-3.55190E-11	-43.79174E 00
16	1.70000E-09	1.31931E-09	-3.80429E-10	-52.25134E-01
17	1.90000E-09	1.92724E-09	2.72397E-11	14.33640E-01
18	7.74000E-09	7.24020E-09	-4.99840E-10	-13.42650E-02
22	1.45000E-10	1.44693E-10	-3.06767E-13	-21.01760E-02
26	6.00000E-11	6.50776E-11	5.0776E-12	83.96079E-01
27	1.10000E-10	1.05272E-10	-4.7280E-12	-42.90619E-01
28	1.70000E-08	1.44970E-08	-2.50030E-09	-12.39000E-01
29	2.24000E-10	2.44044E-10	2.44044E-11	10.88177E 00
30	9.70000E-11	4.53749E-11	-4.66049E-12	-51.78327E-01
32	3.45000E-10	3.39879E-10	-5.1120E-12	-14.96081E-01
40	1.10000E-11	1.10000E-11	0.0	0.0
44	1.45000E-08	1.44954E-08	-4.78459E-12	-30.23480E-03

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	5.26782E-08	99.99998E 00
SUM OF PARTIAL PRESSURES	5.33280E-08	99.99998E 00
H	1.81772E-09	34.08134E 00
HELIUM	2.50818E-12	47.03239E-04
METHANE	1.85483E-10	34.93249E-02
WATER VAPOR	1.80473E-08	30.43419E 00
NITROGEN	4.21817E-10	79.07720E-02
CO	1.70000E-09	22.66779E 00
CHYGEN	4.07300E-10	76.03709E-02
ARGON	1.21947E-11	22.87631E-03
CO2	1.00000E-08	20.41874E 00
C2H4	3.07300E-11	60.00345E-03
C2H6	1.47020E-10	20.17649E-02
C3H8	9.70000E-11	17.93019E-03
HYDROCARBONS	4.79034E-10	89.22976E-02

SUM OF CURRENTS = 4.76831E-08 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 9.03623E-01 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 4.71280E-08 TORR
ION GAGE ADJUSTED PRESSURE = 7.03411E-08 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 1.02130E-08 TORR
PERCENT DIFFERENCE = 21.607

RUN NO. 101, 600-C, 350 HP AT 50 DEG
DATE = 2.18
HOURS = 7.00
TEMPERATURE (CEGPE C.) = 49.25
ION GAGE (TORR) = 4.0000E-08

THERMAL CORRECTION = 4.21426E-08

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	3.05000E-09	3.05000E-09	-4.44085E-15	-14.56030E-05
4	1.00000E-13	1.00000E-13	0.0	0.0
12	5.00000E-10	4.21756E-10	-7.82441E-11	-15.64882E-00
13	1.00000E-11	7.70095E-12	-7.29904E-12	-48.66029E-00
14	1.10000E-10	9.72046E-11	-1.27954E-11	-11.58123E-00
15	1.40000E-10	8.48679E-11	-7.51321E-11	-46.95755E-00
16	9.90000E-10	1.01990E-09	6.99000E-11	69.36836E-01
17	1.10000E-09	9.43147E-10	-1.56853E-10	-14.25936E-00
19	3.50000E-09	3.79422E-09	3.42213E-11	11.20407E-01
22	1.25000E-10	1.21911E-10	-3.08909E-12	-24.55249E-01
26	5.00000E-11	1.91579E-11	-3.08421E-11	-68.16747E-00
27	6.00000E-11	1.19741E-10	3.77410E-11	39.49530E-00
28	1.00000E-09	1.00007E-09	6.40050E-13	64.00047E-04
29	1.95000E-10	1.93811E-10	9.81076E-12	47.62571E-01
30	7.00000E-10	7.37092E-10	1.25077E-11	17.21023E-01
32	2.80000E-10	2.74793E-10	-5.20717E-12	-18.59704E-01
40	1.00000E-11	1.30000E-11	0.0	0.0
44	1.20000E-08	1.19827E-08	-1.7119E-12	-15.09903E-03

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	4.21426E-08	
SUM OF PARTIAL PRESSURES	3.56199E-08	99.9999E-00
H	1.44579E-08	40.70178E-00
HELIUM	2.70818E-12	76.41314E-04
METHANE	2.44394E-10	69.59780E-02
WATER VAPOR	9.32495E-09	24.59473E-00
NITROGEN	3.50472E-10	98.53246E-02
CO	5.20461E-09	14.61131E-00
CH4	3.27806E-10	92.01140E-02
ARGON	1.44170E-11	40.47877E-03
NE	9.17597E-10	25.76048E-00
C2H6	-1.23012E-09	-34.75324E-01
C2H4	2.10154E-08	58.99949E-01
C2H2	-3.00909E-10	-10.41825E-01
HYDROCARBONS	7.19779E-10	20.18124E-01

SUM OF CURRENTS = 3.26701E-09 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 8.21452E-01 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 3.56199E-08 TORR
ION GAGE ADJUSTED PRESSURE = 3.04613E-08 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 2.20215E-09 TORR
PERCENT DIFFERENCE = 64.870

RUN NO. 101, 600-C, 350 HP AT 50 DEG
DATE = 2.18
HOURS = 7.00
TEMPERATURE (CEGPE C.) = 49.25
ION GAGE (TORR) = 2.10000E-08

THERMAL CORRECTION = 2.21249E-08

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	2.50000E-09	2.50000E-09	-3.77476E-15	-15.09903E-05
4	1.00000E-13	1.00000E-13	0.0	0.0
12	3.20000E-10	3.40864E-10	2.0864E-11	65.20209E-01
13	1.10000E-11	2.99251E-11	1.89251E-11	17.20467E-01
14	6.20000E-11	1.02058E-10	4.0077E-11	64.60716E-00
15	9.20000E-10	4.37312E-10	-4.82687E-10	-52.46603E-00
16	6.80000E-10	1.05883E-09	3.7887E-10	55.70985E-00
17	4.05000E-10	4.13393E-10	8.393E-12	89.29483E-02
18	1.50000E-09	1.4657E-09	-3.432E-11	-89.55057E-02
22	5.00000E-11	8.20327E-11	3.20327E-11	64.06551E-00
26	2.90000E-11	7.18034E-12	-2.1816E-11	-75.24014E-00
27	3.20000E-11	5.0850E-11	1.8850E-11	58.92200E-00
28	7.50000E-10	7.45497E-10	-4.5027E-12	-47.0278E-03
29	9.00000E-11	2.1244E-10	1.2244E-10	13.60980E-01
30	3.00000E-11	-1.06242E-11	-4.06242E-11	-12.94140E-01
32	1.10000E-10	8.00722E-11	-2.90278E-11	-27.20709E-00
40	5.00000E-12	5.00000E-12	0.0	0.0
44	8.30000E-06	8.27425E-06	-2.57514E-11	-25.00145E-02

GAS	PRESSURE TORR	PERCENT OF TOTAL PRESSURE
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ION GAGE	2.21249E-08	
SUM OF PARTIAL PRESSURES	2.65689E-08	99.9999E-00
H	1.17895E-08	44.27329E-00
HELIUM	2.50818E-12	94.40252E-04
METHANE	8.49008E-10	31.95464E-01
WATER VAPOR	2.23742E-09	84.21204E-01
NITROGEN	-1.11440E-10	-41.56170E-02
CO	5.42026E-09	20.40076E-00
CH4	9.5433E-11	35.56059E-02
ARGON	5.54330E-12	20.87140E-03
C2H6	6.17334E-05	23.23521E-00
C2H4	3.24223E-11	12.22568E-02
C2H2	-7.68489E-11	-28.52430E-03
C2H2	1.51495E-10	57.04730E-02
HYDROCARBONS	9.56226E-10	35.99090E-01

SUM OF CURRENTS = 2.27441E-09 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 1.07353E-01 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 2.65689E-08 TORR
ION GAGE ADJUSTED PRESSURE = 3.17765E-08 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 5.30756E-09 TORR
PERCENT DIFFERENCE = 19.07

RUN NO. 101, 400-C, 350 HR AT 50 DEG
DATE = 2.14
HOURS = 141.25
TEMPERATURE (DEGREE C.) = 40.25
ION GAGE (TORR) = 2.10000F-08

THERMAL CORRECTION = 2.21249E-08

M/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED M/E	DIFFERENCE	PERCENT DIFF
2	2.55000E-08	2.55000E-08	-3.7747E-15	-14.80297E-05
4	1.00000E-13	1.00000E-13	0.0	0.0
12	2.70000E-10	2.69794E-10	1.97342E-11	73.08971E-01
13	1.70000E-11	6.97419E-12	-3.02391E-12	-20.23011E 00
14	5.00000E-11	6.04701E-11	4.43014E-12	79.10994E-01
15	6.15000E-11	6.16000E-11	2.66042E-12	32.74156E-01
16	5.90000E-10	5.87059E-10	-2.91215E-12	-49.68155E-02
17	1.10000E-10	3.7470E-10	-7.32170E-12	-23.26349E-01
18	1.15000E-09	1.15204E-09	2.0924E-12	17.90645E-02
22	5.00000E-11	7.14878E-11	2.14878E-11	42.9750E 00
26	2.00000E-11	2.03436E-11	3.3436E-12	12.85985E 00
27	4.00000E-11	3.88049E-11	-3.11523E-12	-77.88074E-01
28	6.00000E-09	6.79541E-09	5.8977E-13	-86.72804E-04
29	7.00000E-11	7.05401E-11	5.4013E-13	77.16447E-02
30	2.50000E-11	2.43282E-11	3.3281E-12	53.12753E-01
32	6.70000E-11	6.72710E-11	2.71037E-13	76.55602E-02
40	6.00000E-12	6.50000E-12	0.0	0.0
44	7.10000E-09	7.14950E-09	-4.9733E-13	-69.56361E-04

GAS PRESSURE PERCENT
TORR OF TOTAL PRESSURE

ION GAGE	2.21249E-08	99.99998E 00
SUM OF PARTIAL PRESSURES	2.47508E-08	49.43307E 00
H	1.20770E-08	10.30022E-03
HELIUM	2.50010E-12	72.03966E-07
METHANE	1.79412E-10	71.20774E-01
WATER VAPOR	1.73944E-09	49.58572E-02
NITROGEN	1.11004E-10	4.71920E-09
CO	4.71920E-09	42.76414E-02
CH4	1.06085E-10	29.60434E-03
ARGON	7.20000E-12	27.00280E 00
CO2	4.59970E-09	16.47280E-02
C2H6	4.02291E-11	16.16331E-02
C2H4	1.07510E-12	59.67872E-04
HYDROCARBON	2.61140E-10	10.72411E-01

SUM OF CURRENTS = 1.42771E-08 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 5.17056E-01 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 2.47508E-08 TORR
ION GAGE ADJUSTED PRESSURE = 3.34423E-08 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 9.09152E-09 TORR
PERCENT DIFFERENCE = 37.376

RUN NO. 101, 600-C, 350 HR AT 50 DEG
DATE = 2.22
HOURS = 210.50
TEMPERATURE (DEGREE C.) = 40.25
ION GAGE (TORR) = 2.10000F-08

THERMAL CORRECTION = 2.21249E-08

M/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED M/E	DIFFERENCE	PERCENT DIFF
2	2.55000E-08	2.55000E-08	-3.9682E-15	-15.67373E-05
4	1.00000E-13	1.00000E-13	0.0	0.0
12	3.20000E-10	3.29740E-10	9.74064E-12	30.50200E-01
13	5.00000E-12	6.48698E-12	-3.01302E-12	-31.71602E 00
14	5.80000E-11	5.95403E-11	1.54032E-12	26.55729E-01
15	6.90000E-11	7.01456E-11	1.01456E-11	14.70378E 00
16	5.90000E-10	5.71701E-10	-8.29014E-12	-14.30885E-01
17	1.70000E-10	1.69528E-10	-6.07200E-12	-35.71747E-01
18	1.10000E-10	6.11570E-10	1.93023E-12	31.64318E-02
22	2.00000E-11	7.10104E-11	5.10104E-11	25.50572E 01
26	2.00000E-11	2.61463E-11	3.6427E-12	16.42784E 00
27	5.00000E-11	3.55633E-11	-3.4367E-12	-88.12034E-01
28	8.70000E-09	8.74674E-09	3.2685E-13	-37.39474E-04
29	4.00000E-11	9.26506E-11	1.34035E-12	-14.10933E-01
30	4.00000E-11	4.14069E-11	1.40687E-12	35.17197E-01
32	5.40000E-11	5.44551E-11	4.55101E-13	12.13140E-01
40	5.00000E-12	5.00000E-12	0.0	0.0
44	7.10000E-09	7.09970E-09	-2.54875E-13	-41.53170E-04

GAS PRESSURE PERCENT
TORR OF TOTAL PRESSURE

ION GAGE	2.21249E-08	99.99998E 00
SUM OF PARTIAL PRESSURES	2.12908E-08	47.91272E 00
H	1.20404E-08	55.80904E-04
HELIUM	2.90818E-12	65.48556E-07
METHANE	1.44564E-10	76.60017E-01
WATER VAPOR	9.21011E-10	-70.33635E-03
NITROGEN	-1.90371E-11	25.64766E 00
CO	6.52060E-09	25.95135E-02
CH4	6.52152E-11	22.06663E-03
ARGON	5.54770E-12	21.24507E 00
CO2	9.34786E-09	51.63445E-03
C2H6	1.29756E-11	30.15251E-02
C2H4	7.7727E-11	-10.62559E-03
HYDROCARBON	-2.67019E-12	99.73891E-02

SUM OF CURRENTS = 2.04921E-08 AMPS
SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 9.75813E-01 AMPS/TORR
SUMMATION PARTIAL PRESSURE = 2.51208E-08 TORR
ION GAGE ADJUSTED PRESSURE = 3.3087E-08 TORR
DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURES) = 7.9647E-09 TORR
PERCENT DIFFERENCE = 31.665

RUN NO. 101, 600-C, 350 MM AT 50 DEG

DATE = 2.25

HOURS = 22.25

TEMPERATURE (CELSIUS) = 49.25

ION GAGE (TORR) = 1.05000E-08

THERMAL COEFFICIENT = 1.10424E-03

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	2.10700E-09	2.10000E-09	-2.88658E-15	-17.74561E-05
4	1.90000E-12	1.00000E-12	0.0	0.0
12	1.20000E-10	1.79151E-10	1.49151E-11	19.95940E-00
13	7.00000E-12	4.61365E-12	-2.38635E-12	-34.08440E-00
14	3.00000E-11	4.01035E-11	4.6071E-12	12.96760E-00
15	5.00000E-11	5.64110E-11	1.58902E-12	27.99490E-01
16	2.35000E-10	7.09244E-10	1.65239E-02	16.56239E-02
17	6.10000E-11	5.94194E-11	-1.58156E-12	-25.92390E-01
18	2.20000E-10	2.20404E-10	4.0599E-17	18.45470E-02
22	2.75000E-11	2.34335E-11	-4.4671E-14	-19.89410E-02
26	2.20000E-11	2.24185E-11	4.18704E-13	19.01302E-01
27	3.10000E-11	3.06445E-11	-3.5544E-13	-11.47264E-01
28	4.45000E-09	4.44949E-09	-5.1191E-13	-11.49842E-02
29	5.00000E-11	5.47513E-11	7.7173E-12	12.73439E-01
30	1.00000E-11	1.47039E-11	7.8229E-13	41.23970E-01
32	1.70000E-11	1.64440E-11	-3.0075E-14	-18.27072E-02
40	1.75000E-11	1.75000E-11	0.0	0.0
44	2.35000E-09	2.3457E-09	-4.3471E-13	-18.48167E-03

GAS PRESSURE TORR PERCENT OF TOTAL PRESSURE

ION GAGE	1.10424E-08	99.99997E-00
SUM OF PARTIAL PRESSURES	1.10424E-08	99.99997E-00
H	9.91440E-09	89.12770E-00
HELIUM	2.00000E-12	1.80917E-02
METHANE	1.17435E-10	10.63920E-02
WATER VAPOR	3.31731E-10	29.12200E-01
NITROGEN	5.00000E-11	4.52670E-02
CO	3.42413E-09	30.99227E-00
CH4	2.02477E-11	1.83214E-02
ACETONE	1.27542E-11	1.15403E-02
CL2	1.76407E-09	15.93700E-00
C2H6	2.41234E-11	2.18422E-02
C2H4	3.74000E-11	3.38746E-02
C3H8	8.44201E-12	7.64224E-02
HYDROCARBONS	1.87740E-10	16.99640E-01

SUM OF CURRENTS = 0.21000E-09 AMP

SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 0.35247E-01 AMP/TORR

SUMMATION PARTIAL PRESSURE = 1.07054E-08 TORR

ION GAGE ADJUSTED PRESSURE = 1.08739E-08 TORR

DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURE) = 3.13204E-09 TORR

PERCENT DIFFERENCE = 10.442

RUN NO. 101, 400-C, 150 MM AT 50 DEG

DATE = 2.20

HOURS = 22.25

TEMPERATURE (CELSIUS) = 49.25

ION GAGE (TORR) = 7.69000E-09

THERMAL COEFFICIENT = 7.70000E-03

N/E	MEASURED PEAK HEIGHT (AMPS)	CALCULATED N/E	DIFFERENCE	PERCENT DIFF
2	1.60000E-09	1.60000E-09	-2.90250E-15	-17.50900E-05
4	1.90000E-12	1.00000E-12	0.0	0.0
12	6.00000E-11	9.43110E-11	3.43110E-11	57.18370E-01
13	4.60000E-12	7.70032E-12	3.10032E-12	67.39840E-00
14	2.90000E-11	2.47910E-11	-4.20900E-12	-14.51360E-01
15	3.00000E-11	3.07760E-11	7.76000E-13	25.86700E-01
16	1.00000E-10	1.07730E-10	7.73000E-12	7.73000E-01
17	4.15000E-11	3.42200E-11	-7.27000E-12	-17.51810E-01
18	1.07000E-10	1.07614E-10	6.14000E-12	5.73400E-01
22	1.70000E-11	1.91900E-11	2.19000E-12	12.88240E-01
26	1.10000E-11	1.17000E-11	7.00000E-13	6.36360E-01
27	1.40000E-11	1.40200E-11	2.00000E-13	1.42857E-01
28	2.00000E-09	2.04070E-09	4.07000E-11	2.03500E-01
29	3.00000E-11	3.71000E-11	7.10000E-12	23.66666E-01
30	1.70000E-11	1.77000E-11	7.00000E-13	4.11765E-01
32	1.30000E-11	1.30000E-11	0.0	0.0
40	1.07100E-11	1.07100E-11	0.0	0.0

GAS PRESSURE TORR PERCENT OF TOTAL PRESSURE

ION GAGE	7.70000E-09	99.99997E-00
SUM OF PARTIAL PRESSURES	1.07720E-08	99.99997E-00
H	1.03000E-09	9.56000E-00
HELIUM	2.00000E-12	1.85400E-02
METHANE	7.00000E-11	6.59000E-02
WATER VAPOR	1.17435E-10	10.92000E-01
NITROGEN	4.77000E-11	4.43000E-02
CO	2.27000E-09	21.09000E-00
CH4	1.47000E-11	1.36000E-02
ACETONE	4.00000E-12	3.70000E-02
CL2	1.76407E-09	16.36000E-01
C2H6	1.20000E-11	1.12000E-02
C2H4	1.30000E-11	1.20000E-02
C3H8	1.00000E-11	9.20000E-02
HYDROCARBONS	4.77000E-12	44.36000E-01

SUM OF CURRENTS = 1.20700E-09 AMP

SENSITIVITY (TOTAL CURRENT/ION GAGE PRESSURE) = 0.73010E-01 AMP/TORR

SUMMATION PARTIAL PRESSURE = 1.10120E-08 TORR

ION GAGE ADJUSTED PRESSURE = 1.70470E-09 TORR

DIFFERENCE (ION GAGE ADJUSTED PRESSURE - SUMMATION PARTIAL PRESSURE) = 1.72570E-09 TORR

PERCENT DIFFERENCE = 10.442

GAS	HOURS	TEMP	PARTIAL PRESSURE	GAS	HOURS	TEMP	PARTIAL PRESSURE
ION GASE	2.00	49.25	3.72944E-06	TOTAL PRESSURES	2.00	49.25	1.48012E-06
	20.50	49.25	1.89642E-07		20.50	49.25	1.46185E-07
	31.00	49.25	1.26428E-07		31.00	49.25	1.04300E-07
	46.00	49.25	6.84817E-08		46.00	49.25	6.70636E-08
	46.75	49.25	6.84817E-08		46.75	49.25	7.02461E-08
	63.25	49.25	5.26782E-08		63.25	49.25	5.37288E-08
	75.00	49.25	4.22424E-08		75.00	49.25	3.56199E-08
	137.00	49.25	2.71249E-08		137.00	49.25	2.65689E-08
	141.25	49.25	2.71249E-08		141.25	49.25	2.49508E-08
	210.50	49.25	2.71249E-08		210.50	49.25	2.51298E-08
	283.25	49.25	1.10624E-08		283.25	49.25	1.57094E-08
	390.25	49.25	7.74618E-09		390.25	49.25	1.18322E-08

GAS	HOURS	TEMP	PARTIAL PRESSURE	GAS	HOURS	TEMP	PARTIAL PRESSURE
H	2.00	49.25	2.62487E-07	H2LIU	2.00	49.25	2.50010E-12
	20.50	49.25	4.15298E-08		20.50	49.25	2.50010E-12
	31.00	49.25	2.35926E-08		31.00	49.25	2.50010E-12
	46.00	49.25	2.00550E-08		46.00	49.25	2.50010E-12
	46.75	49.25	2.07157E-08		46.75	49.25	2.50010E-12
	63.25	49.25	1.81752E-08		63.25	49.25	2.50010E-12
	75.00	49.25	1.44874E-08		75.00	49.25	2.50010E-12
	137.00	49.25	1.17895E-08		137.00	49.25	2.50010E-12
	141.25	49.25	1.20378E-08		141.25	49.25	2.50010E-12
	210.50	49.25	1.20404E-08		210.50	49.25	2.50010E-12
	283.25	49.25	9.91448E-09		283.25	49.25	2.50010E-12
	390.25	49.25	7.83891E-09		390.25	49.25	2.50010E-12

GAS	HOURS	TEMP	PARTIAL PRESSURE	GAS	HOURS	TEMP	PARTIAL PRESSURE
METHANE	2.00	49.25	-1.05667E-09	ACETONE	2.00	49.25	1.07617E-06
	10.00	49.25	-9.37007E-10		10.00	49.25	6.57276E-08
	20.00	49.25	-3.79372E-10		20.00	49.25	3.76430E-08
	40.00	49.25	4.09204E-10		40.00	49.25	1.01002E-08
	60.00	49.25	3.32167E-10		60.00	49.25	1.36164E-08
	80.00	49.25	1.99603E-10		80.00	49.25	1.60973E-08
	100.00	49.25	2.46224E-10		100.00	49.25	7.32603E-09
	120.00	49.25	0.49000E-10		120.00	49.25	2.73762E-09
	140.00	49.25	1.75612E-10		140.00	49.25	1.73966E-09
	160.00	49.25	1.66504E-10		160.00	49.25	9.21011E-10
	180.00	49.25	1.12647E-10		180.00	49.25	3.31731E-10
	200.00	49.25	7.05648E-11		200.00	49.25	2.19180E-10

GAS	HOURS	TEMP	PARTIAL PRESSURE	GAS	HOURS	TEMP	PARTIAL PRESSURE
NITROGEN	2.00	49.25	1.11762E-09	CC	2.00	49.25	7.16647E-07
	10.00	49.25	3.78078E-09		10.00	49.25	7.40069E-08
	20.00	49.25	8.43324E-10		20.00	49.25	2.77890E-08
	40.00	49.25	3.46104E-10		40.00	49.25	1.26799E-08
	60.00	49.25	-1.56157E-08		60.00	49.25	1.07400E-08
	80.00	49.25	4.21617E-10		80.00	49.25	1.29633E-08
	100.00	49.25	3.90572E-10		100.00	49.25	5.20661E-09
	120.00	49.25	-1.11640E-10		120.00	49.25	9.42030E-09
	140.00	49.25	1.11004E-10		140.00	49.25	4.71320E-09
	160.00	49.25	-1.93371E-11		160.00	49.25	6.72040E-09
	180.00	49.25	5.08969E-11		180.00	49.25	1.42413E-09
	200.00	49.25	4.19366E-11		200.00	49.25	2.73480E-09

GAS	HOURS	TEMP	PARTIAL PRESSURE	GAS	HOURS	TEMP	PARTIAL PRESSURE
OXYGEN	2.00	49.25	1.669927-08	ARGON	2.00	49.25	2.210129-09
	20.70	49.25	2.689931-08		20.70	49.25	2.427011-11
	21.00	49.25	1.566672-09		21.00	49.25	2.081719-11
	44.00	49.25	1.156211-10		44.00	49.25	1.996312-11
	44.75	49.25	6.837287-10		44.75	49.25	2.210129-11
	67.25	49.25	4.059009-10		67.25	49.25	1.219979-11
	75.00	49.25	3.278961-10		75.00	49.25	1.661707-11
	137.00	49.25	4.556339-11		137.00	49.25	2.565702-12
	141.25	49.25	1.640799-10		141.25	49.25	7.200099-12
	210.50	49.25	6.521172-11		210.50	49.25	5.945307-12
	283.25	49.25	2.024774-11		283.25	49.25	1.275625-11
	350.25	49.25	1.434399-11		350.25	49.25	4.990777-12

GAS	HOURS	TEMP	PARTIAL PRESSURE	GAS	HOURS	TEMP	PARTIAL PRESSURE
CO2	2.00	49.25	-2.462200-09	CO2	2.00	49.25	-4.684299-01
	20.70	49.25	2.279570-09		20.70	49.25	3.780000-10
	21.00	49.25	1.070470-09		21.00	49.25	7.200070-11
	44.00	49.25	1.277100-09		44.00	49.25	6.364000-11
	44.75	49.25	1.670000-09		44.75	49.25	6.770000-10
	67.25	49.25	1.600000-09		67.25	49.25	3.671000-11
	75.00	49.25	6.170070-09		75.00	49.25	-1.230020-00
	137.00	49.25	6.172000-09		137.00	49.25	7.204000-11
	141.25	49.25	6.770070-09		141.25	49.25	6.094000-11
	210.50	49.25	6.300000-09		210.50	49.25	1.277000-11
	283.25	49.25	1.760070-09		283.25	49.25	2.983000-11
	350.25	49.25	1.360070-09		350.25	49.25	1.364000-11

GAS	HOURS	TEMP	PARTIAL PRESSURE	GAS	HOURS	TEMP	PARTIAL PRESSURE
C2H6	2.00	49.25	1.64072E-09	C2H6	2.00	49.25	8.82829E-08
	20.50	49.25	4.52502E-10		20.50	49.25	5.22478E-10
	31.00	49.25	4.64134E-10		31.00	49.25	1.11075E-10
	46.00	49.25	2.90192E-10		46.00	49.25	5.40865E-11
	46.75	49.25	-6.58402E-10		46.75	49.25	1.97199E-10
	61.25	49.25	1.65529E-10		61.25	49.25	5.25545E-11
	76.00	49.25	2.16254E-09		76.00	49.25	-2.68908E-10
	137.00	49.25	-7.40499E-11		137.00	49.25	1.51899E-10
	141.25	49.25	4.42512E-11		141.25	49.25	1.43519E-12
	210.50	49.25	7.57727E-11		210.50	49.25	-2.67019E-12
	283.25	49.25	5.94002E-11		283.25	49.25	0.44281E-12
	350.75	49.25	1.99341E-11		350.75	49.25	4.77799E-12

GAS	HOURS	TEMP	PARTIAL PRESSURE
HYDROCARBONS	2.00	49.25	2.35145E-08
	20.50	49.25	2.16777E-10
	31.00	49.25	9.66621E-10
	46.00	49.25	7.82538E-10
	46.75	49.25	5.74806E-10
	61.25	49.25	4.39034E-10
	76.00	49.25	7.18979E-10
	137.00	49.25	0.56234E-10
	141.25	49.25	2.61149E-10
	210.50	49.25	2.30642E-10
	283.25	49.25	1.82748E-10
	350.75	49.25	1.07006E-10

GAS IS ION GAGE

SOURCE Y=XXXXX WITH A = 0.433018-05 AND B = -0.133928 01

USING THE MODEL LOG(Y)=ALPHA+P*(LOG(X)-XBAR) WHERE XBAR=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + B * XBAR.
ALPHA = -0.167109 02 CONFIDENCE LIMIT ON ALPHA = 0.117139 00 CONFIDENCE LIMIT ON B = 0.06420E-01

THEMES		CORRELATION COEFFICIENT = -0.96456E 00		CORRELATION OF DETERMINATION = 0.98922E 00			
X	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y	
2.00	7.9794E-06	7.8949E-06	-6.328E-07	-1.790E 01	-1.2742E 01	5.0579E-01	
20.00	1.0964E-07	1.0469E-07	-1.475E-08	-7.800E 00	-1.5403E 01	4.1781E-01	
31.00	1.2864E-07	1.2761E-07	-1.176E-08	-5.000E 01	-1.5874E 01	4.1072E-01	
46.00	6.8484E-08	6.1399E-08	-1.2617E-08	-1.890E 01	-1.6324E 01	4.0681E-01	
46.75	6.8484E-08	7.4917E-08	1.1431E-08	1.670E 01	-1.6342E 01	4.0671E-01	
63.25	9.2674E-08	5.6479E-08	-3.9549E-08	-7.900E 00	-1.6647E 01	4.0574E-01	
75.00	4.2344E-08	4.6641E-08	4.457E-09	1.070E 01	-1.6881E 01	4.0594E-01	
177.00	2.7124E-08	2.3479E-08	-1.364E-08	-6.100E 00	-1.7547E 01	4.1098E-01	
341.25	2.2124E-08	2.2679E-08	5.411E-09	2.500E 00	-1.7602E 01	4.1141E-01	
210.00	2.2124E-08	1.4964E-08	-7.730E-09	-3.490E 01	-1.8054E 01	4.1899E-01	
287.25	1.1064E-08	1.0264E-08	-7.993E-10	-7.200E 00	-1.8799E 01	4.2562E-01	
350.25	7.7064E-09	6.0999E-09	-2.626E-09	-3.400E 00	-1.8836E 01	4.3159E-01	

GAS IS TOTAL PRESSURE

SOURCE Y=XXXXX WITH A = 0.40573F-05 AND B = -0.10613F 01

USING THE MODEL LOG(Y)=ALPHA+P*(LOG(X)-XBAR) WHERE XBAR=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + B * XBAR.
ALPHA = -0.16678E 02 CONFIDENCE LIMIT ON ALPHA = 0.17144F 00 CONFIDENCE LIMIT ON B = 0.12723E 00

THEMES		CORRELATION COEFFICIENT = -0.98677E 00		CORRELATION OF DETERMINATION = 0.97573E 00			
X	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y	
2.00	3.4801E-06	2.7796E-06	-1.1045E-06	-3.170E 01	-1.2950E 01	7.4034E-01	
20.00	1.0618E-07	7.0096E-07	4.7762E-08	2.400E 00	-1.5420E 01	6.1196E-01	
31.00	1.0618E-07	1.2957E-07	2.3267E-08	2.190E 01	-1.5970E 01	6.0110E-01	
46.00	6.7064E-08	8.5231E-08	1.8166E-08	2.710E 01	-1.6278E 01	5.9548E-01	
46.75	7.0267E-08	8.5781E-08	1.7514E-08	1.930E 01	-1.6299E 01	5.9531E-01	
63.25	9.3324E-08	6.3799E-08	-7.452E-09	-1.400E 01	-1.6416E 01	5.9300E-01	
75.00	7.6420E-08	5.0733E-08	-1.4113E-08	-4.240E 01	-1.6797E 01	5.9423E-01	
177.00	2.4564E-08	2.4767E-08	1.4739E-09	7.000E 00	-1.7436E 01	6.0156E-01	
341.25	2.4751E-08	2.9113E-08	1.5619E-09	6.400E 00	-1.7449E 01	6.0719E-01	
210.00	2.4730E-08	1.0968E-08	-8.161E-09	-3.250E 01	-1.7892E 01	6.1263E-01	
287.25	1.5706E-08	1.2387E-08	-3.228E-09	-2.120E 01	-1.8207E 01	6.2298E-01	
350.25	1.1832E-08	5.8865E-09	-1.9477E-09	-1.650E 01	-1.8632E 01	6.3166E-01	


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USING THE MODEL LOGS(LN)=ALPHA+DELTA*LOG(XI+XBAR) WHERE XBAR=MEAN VALUE OF LOG(XI) AND ALPHA = LOG A + B * XBAR,
ALPHA = -.021746 00 CONFIDENCE LIMIT ON ALPHA = 0.023498 00 CONFIDENCE LIMIT ON B = 0.799918 00

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INDEPENDS		CORRELATION COEFFICIENT = -0.642276 CC		CORRELATION OF DETERMINATION = 0.412918 CC			
X	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG CF	Y	CONFIDENCE LIMIT ON LOG Y
31.00	3.70979E-10	4.91009E-10	7.73200E-11	1.41100E 01	-2.1910E 01	1.40879E 00	
40.00	4.00000E-10	3.43900E-10	-6.40000E-11	-1.11000E 01	-2.1710E 01	1.40779E 00	
40.70	7.72179E-10	3.62500E-10	9.14000E-10	9.14000E 00	-2.1740E 01	1.40409E 00	
45.70	1.00000E-10	1.19600E-10	1.19600E-10	4.10000E 01	-2.1910E 01	1.39579E 00	
70.00	2.64499E-10	2.77000E-10	3.77000E-11	1.17700E 01	-2.2900E 01	1.39100E 00	
197.00	6.00001E-10	1.00000E-10	-6.00000E-10	-7.00000E 00	-2.2339E 01	1.34000E 00	
241.20	1.70001E-10	1.94000E-10	2.07000E-11	1.16000E 01	-2.2900E 01	1.34000E 00	
245.00	1.00000E-10	1.70000E-10	7.00000E-11	7.00000E 00	-2.1710E 01	1.34000E 00	
250.00	1.10000E-10	1.10000E-10	2.11000E-11	1.00000E 01	-2.2730E 01	1.40000E 00	
260.20	7.00000E-11	1.10000E-10	4.00000E-11	6.00000E 01	-2.2871E 01	1.40300E 00	

USING THE MODEL LOG(Y)=ALPHA+B*LOG(X)-YBAR(I) WHERE YBAR=MEAN VALUE OF LOG(X(I)) AND ALPHA = LOG A + B * YBAP.
ALPHA = -.0196769 02 CONFIDENCE LIMIT ON ALPHA = 0.212026 00 CONFIDENCE LIMIT ON B = 0.197749 00

INCHES		CORRELATION COEFFICIENT = -0.99318 00		CORRELATION OF OPTIMIZATION = 0.9667E 00			
X	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y	
2.00	2.9627E-06	4.9527E-06	1.9666E-06	6.6400E 01	-1.2236E 01	0.1599E-01	
20.50	5.1328E-08	6.4937E-08	-2.3610E-08	-2.3900E 01	-1.6599E 01	7.9630E-01	
31.00	7.7647E-08	3.0170E-08	4.7478E-08	-1.7900E 01	-1.7316E 01	7.6660E-01	
44.00	1.8100E-07	1.8100E-07	0.0000E+00	0.0000E 00	-1.7316E 01	7.3630E-01	
46.75	1.8617E-08	1.4038E-08	4.5739E-09	-2.4500E 01	-1.6079E 01	7.3620E-01	
65.25	1.0097E-07	0.0447E-09	-2.6527E-09	-2.6200E 01	-1.0630E 01	0.3445E-01	
75.00	5.1268E-09	9.8607E-09	5.7311E-09	1.0100E 01	-1.0954E 01	7.3627E-01	
137.00	7.2748E-09	1.8201E-09	5.4548E-09	-1.4200E 01	-2.0071E 01	7.3692E-01	
161.25	1.7360E-09	1.8144E-09	8.4217E-11	4.6000E 00	-2.0120E 01	7.6673E-01	
201.50	2.3102E-10	1.0102E-10	1.3000E-10	0.0000E 00	-2.0120E 01	7.6673E-01	
263.25	3.1735E-10	4.0958E-10	1.6784E-10	0.0400E 01	-2.1417E 01	7.7042E-01	
350.25	2.1917E-10	3.7049E-10	1.7189E-10	5.9000E 01	-2.1811E 01	7.7114E-01	

GAS IS AIRBORN

POWER Y=POWER WITH A = 0.411979-07 AND P = -0.119009 01

USING THE MODEL LOG(Y)=ALPHA+PHI(LC(X)) WHERE PHA=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + P * XBAR.
 ALPHA = -0.219997 02 CONFIDENCE LIMIT ON ALPHA = 0.301297 00 CONFIDENCE LIMIT ON P = 0.249049 00

INDEXES		CORRELATION COEFFICIENT = -0.971928 00		CORRELATION COEFFICIENT OF DETERMINATION = 0.943628 00			
X	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y	
2.00	1.11740-00	1.00000-00	7.77000-00	6.95000 00	-1.78036 01	1.39316 00	
20.00	7.70000-00	1.77000-00	-2.10000-00	-2.70000 01	-2.00000 01	1.10000 00	
71.00	9.00000-10	7.00000-10	-7.10000-11	-7.80000 00	-2.00000 01	1.00000 00	
44.00	3.00000-10	5.00000-10	1.00000-10	3.30000 01	-2.10000 01	1.00000 00	
63.25	4.20000-10	3.00000-10	-7.70000-11	-1.80000 01	-2.17779 01	1.00000 00	
72.00	3.00000-10	2.00000-10	-6.00000-11	-2.00000 01	-2.17779 01	1.00000 00	
141.25	1.10000-10	1.00000-10	2.70000-11	2.40000 01	-2.27000 01	1.10000 00	
203.25	5.00000-11	6.00000-11	1.00000-11	2.00000 01	-2.30000 01	1.10000 00	
790.25	4.10000-11	4.00000-11	7.77000-12	1.90000 01	-2.37000 01	1.17000 00	

GAS IS CC

POWER Y=POWER WITH A = 0.700000-00 AND P = -0.973618 00

USING THE MODEL LOG(Y)=ALPHA+PHI(LC(X)) WHERE PHA=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + P * XBAR.
 ALPHA = -0.102762 02 CONFIDENCE LIMIT ON ALPHA = 0.270000 00 CONFIDENCE LIMIT ON P = 0.173000 00

INDEXES		CORRELATION COEFFICIENT = -0.969018 00		CORRELATION COEFFICIENT OF DETERMINATION = 0.938908 00			
X	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y	
2.00	3.10000-07	3.00000-07	-8.00000-08	-2.60000 00	-1.49000 01	1.01000 00	
20.00	3.00000-00	3.00000-00	-9.00000-10	-3.00000 00	-1.71000 01	8.34000-01	
71.00	2.00000-00	2.00000-00	9.00000-10	4.50000 00	-1.79000 01	8.30000-01	
44.00	1.00000-00	1.00000-00	2.00000-00	2.00000 01	-1.79000 01	8.30000-01	
63.25	3.00000-00	1.00000-00	-1.00000-00	-3.30000 01	-1.79000 01	8.30000-01	
72.00	1.00000-00	1.00000-00	1.00000-00	1.00000 01	-1.79000 01	8.30000-01	
141.25	1.00000-00	1.00000-00	1.00000-00	1.00000 01	-1.79000 01	8.30000-01	
203.25	1.00000-00	1.00000-00	1.00000-00	1.00000 01	-1.79000 01	8.30000-01	
790.25	2.00000-00	2.00000-00	2.00000-00	1.00000 01	-1.79000 01	8.30000-01	

GAS IS CHOWN

SOME V=0.0000 WITH S = 0.110130-00 AND S = -0.101029 01

USING THE MODEL LOG(Y)=ALPHA+RHO(LOG(X)-XBAR) WHERE XBAR=XBAR VALUE OF LOG(X) AND ALPHA = LOG S + S * XBAR.
 ALPHA = -0.218889 01 CONFIDENCE LIMIT IN ALPHA = 0.348968 00 CONFIDENCE LIMIT ON S = 0.258529 00

INCHES		CORRELATION COEFFICIENT = -0.97018 00		CORRELATION OF ESTIMATION = 0.961126 00	
X	Y	Y CALC.	DIFF.	ACT DIFF.	LOG OF Y
2.00	1.66000-00	4.2743E-08	2.6064E-00	1.4109 02	-1.6900 01
20.00	2.48000-00	1.4930E-09	-1.1001E-00	-4.1100 01	-2.0200 01
31.00	1.46000-00	8.9179E-10	-6.4470E-10	-4.3000 01	-2.0040 01
44.00	7.10000-10	9.0411E-10	-2.1142E-10	-2.4500 01	-2.1400 01
46.75	6.9700E-10	4.9770E-10	-1.9000E-10	-2.7900 01	-2.1631 01
47.25	4.0900E-10	3.2110E-10	-8.4920E-11	-2.0000 01	-2.1990 01
79.00	3.2700E-10	2.5230E-10	-7.5770E-11	-2.3000 01	-2.2100 01
137.00	9.9400E-11	1.0750E-10	1.9520E-11	1.8700 01	-2.2940 01
141.25	1.0400E-10	1.0200E-10	-1.1410E-12	-1.1000 01	-2.2970 01
219.00	6.7210E-11	9.8300E-11	-6.7000E-12	-1.0700 01	-2.3960 01
289.25	2.0300E-11	7.6420E-11	1.9100E-11	2.4800 01	-2.5960 01
350.75	1.0740E-11	2.0640E-11	1.4100E-11	4.9300 01	-2.6200 01

GAS IS CHOWN

SOME V=0.0000 WITH S = 0.250100-00 AND S = -0.110400 01

USING THE MODEL LOG(Y)=ALPHA+RHO(LOG(X)-XBAR) WHERE XBAR=XBAR VALUE OF LOG(X) AND ALPHA = LOG S + S * XBAR.
 ALPHA = -0.218889 01 CONFIDENCE LIMIT IN ALPHA = 0.348968 00 CONFIDENCE LIMIT ON S = 0.258529 00

INCHES		CORRELATION COEFFICIENT = -0.969940 01		CORRELATION OF ESTIMATION = 0.961126 00	
X	Y	Y CALC.	DIFF.	ACT DIFF.	LOG OF Y
2.00	2.7500E-00	1.2470E-00	-1.5030E-00	-4.0700 01	-2.5500 01
16.00	4.4700E-11	7.0000E-11	-1.4720E-11	-1.5000 01	-2.3870 01
31.00	3.0000E-11	9.0000E-11	1.0000E-11	2.7700 01	-2.5700 01
44.00	1.0000E-11	1.0000E-11	0.0000E-11	0.0000 01	-2.5100 01
46.75	2.2000E-11	1.0000E-11	-1.2000E-11	-2.3000 01	-2.6200 01
47.25	1.2000E-11	1.0000E-11	-2.0000E-12	-2.3000 01	-2.6200 01
79.00	1.4400E-11	1.0000E-11	-4.4000E-12	-2.3000 01	-2.6200 01
137.00	9.0000E-12	9.0000E-12	0.0000E-12	0.0000 01	-2.6200 01
141.25	7.0000E-12	8.0000E-12	1.0000E-12	2.0000 01	-2.6200 01
219.00	3.0000E-12	3.0000E-12	0.0000E-12	0.0000 01	-2.6200 01
289.25	1.7700E-11	3.0000E-12	-1.7700E-11	-4.0000 01	-2.6200 01
350.75	4.0000E-12	3.0000E-12	-1.0000E-12	-2.3000 01	-2.6200 01

GAS IS C2

POWER Y=AX+BP WITH A = 0.960979-00 AND B = -0.063719-00

USING THE MODEL LOG(Y)=ALPHA+RHO(LN(X)-YBAR) WHERE YBAR=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + B * YBAR.
 ALPHA = -0.107168-00 CONFIDENCE LIMIT ON ALPHA = 0.179507-00 CONFIDENCE LIMIT ON B = 0.792579-00

INDEXES CORRELATION COEFFICIENT = -0.904607-00

CORRELATION OF DETERMINATION = 0.950618-00

INDEXES	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y
20.50	1.6097E-00	1.6077E-00	2.067E-04	1.340E-01	-1.7704E-01	0.6441E-01
31.00	1.0760E-00	1.0619E-00	1.409E-02	1.320E-01	-1.7704E-01	0.3152E-01
40.00	1.1771E-00	1.1613E-00	1.580E-02	1.340E-01	-1.7704E-01	0.3152E-01
40.75	1.4304E-00	1.3703E-00	6.010E-02	4.200E-01	-1.0003E-01	0.0724E-01
43.10	1.0000E-00	1.0213E-00	-2.130E-02	-2.130E-01	-1.0000E-01	0.0000E-01
71.00	0.1700E-00	0.1640E-00	6.000E-03	3.500E-01	-1.0000E-01	0.0000E-01
137.00	0.1700E-00	0.1640E-00	6.000E-03	3.500E-01	-1.0000E-01	0.0000E-01
141.10	0.1700E-00	0.1640E-00	6.000E-03	3.500E-01	-1.0000E-01	0.0000E-01
170.00	0.1700E-00	0.1640E-00	6.000E-03	3.500E-01	-1.0000E-01	0.0000E-01
242.10	0.1700E-00	0.1640E-00	6.000E-03	3.500E-01	-1.0000E-01	0.0000E-01
270.10	0.1700E-00	0.1640E-00	6.000E-03	3.500E-01	-1.0000E-01	0.0000E-01

GAS IS C2H4

POWER Y=AX+BP WITH A = 0.01507E-00 AND B = -0.10444E-01

USING THE MODEL LOG(Y)=ALPHA+RHO(LN(X)-YBAR) WHERE YBAR=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + B * YBAR.
 ALPHA = -0.23616E-01 CONFIDENCE LIMIT ON ALPHA = 0.01091E-00 CONFIDENCE LIMIT ON B = 0.00000E-00

INDEXES CORRELATION COEFFICIENT = -0.78774E-00

CORRELATION OF DETERMINATION = 0.62054E-00

INDEXES	Y	Y CALC.	DIFFER.	PCT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y
20.50	1.7900E-10	2.607E-10	-1.1421E-10	-6.380E-01	-2.200E-01	2.1024E-00
31.00	7.2041E-11	1.6910E-10	9.713E-11	1.340E-01	-2.200E-01	2.0020E-00
40.00	6.744E-11	1.1104E-10	4.363E-11	6.460E-01	-2.200E-01	2.0020E-00
40.75	6.779E-10	1.1004E-10	-5.670E-10	-8.360E-01	-2.200E-01	2.0020E-00
43.10	7.409E-11	0.0270E-11	4.740E-11	1.194E-01	-2.200E-01	2.0020E-00
137.00	7.409E-11	3.773E-11	3.636E-11	4.900E-01	-2.200E-01	2.0020E-00
141.10	4.0064E-11	3.400E-11	6.064E-12	1.510E-01	-2.200E-01	2.0020E-00
170.00	1.2074E-11	2.870E-11	1.662E-11	1.370E-01	-2.200E-01	2.0020E-00
242.10	2.013E-11	1.670E-11	3.430E-12	1.700E-01	-2.200E-01	2.0020E-00
270.10	1.7144E-11	1.730E-11	2.356E-12	1.370E-01	-2.200E-01	2.0020E-00

GAS 11 C2H6

POWER Y=BX+R WITH B = 0.7733E-06 AND R = -0.8294E 00

USING THE MODEL LOG(Y)=ALPHA+B*LOG(X)+R WHERE X=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + B * XBAR.
ALPHA = -0.2234E 02 CONFIDENCE LIMIT ON ALPHA = C.7716E 00 CONFIDENCE LIMIT ON B = 0.7243E 00

INDEXES		CORRELATION COEFFICIENT = -0.7904E 00		CORRELATION COEFFICIENT = 0.6248E 00		
B	Y	Y CALC.	DIFFER.	ACT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y
2.00	1.4405E-04	3.2368E-04	1.5661E-04	9.730E 01	-1.9549E 01	3.0044E 00
10.50	4.7751E-10	4.6410E-10	1.6592E-11	7.700E 01	-2.1480E 01	2.4772E 00
11.30	4.9417E-10	3.3261E-10	-7.1321E-11	-1.760E 01	-2.1873E 01	7.4356E 00
44.00	1.4124E-10	2.9484E-10	-1.6725E-11	-4.400E 01	-2.2151E 01	2.4174E 00
47.20	1.4097E-10	1.9415E-10	-2.7777E-11	-1.440E 01	-2.2415E 01	2.4096E 00
75.00	2.0144E-09	1.9907E-10	-1.9417E-09	-4.240E 01	-2.2557E 01	2.4107E 00
141.20	6.4770E-11	6.4534E-11	2.360E-11	1.170E 02	-2.3082E 01	2.4472E 00
210.90	7.7771E-12	6.7847E-11	-7.6852E-12	-1.040E 01	-2.3417E 01	2.4427E 00
263.20	3.1487E-11	9.3064E-11	1.5580E-11	7.870E 01	-2.3640E 01	2.5377E 00
350.20	1.8734E-11	4.4491E-11	2.9457E-11	1.400E 02	-2.3874E 01	2.5745E 00

GAS 11 C2H6

POWER Y=BX+R WITH B = 0.1377E-06 AND R = -0.1934E 01

USING THE MODEL LOG(Y)=ALPHA+B*LOG(X)+R WHERE X=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + B * XBAR.
ALPHA = -0.2321E 02 CONFIDENCE LIMIT ON ALPHA = C.9412E 00 CONFIDENCE LIMIT ON B = 0.7649E 00

INDEXES	CORRELATION COEFFICIENT = -0.9111E 00			CORRELATION COEFFICIENT = 0.8702E 00		
X	Y	Y CALC.	DIFFER.	ACT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y
2.00	8.9284E-04	3.9467E-06	-5.0218E-04	-5.490E 01	-1.7084E 01	3.7874E 00
20.70	7.7740E-10	5.3775E-10	2.1027E-10	4.520E 01	-2.1157E 01	7.1162E 00
71.00	1.1107E-10	2.4944E-10	1.3842E-10	1.240E 02	-2.2112E 01	3.0668E 00
44.00	4.4097E-11	1.7097E-10	6.6870E-11	1.230E 02	-2.2436E 01	3.0429E 00
46.75	1.9727E-10	1.1747E-10	-7.9771E-11	-4.050E 01	-2.2505E 01	3.0425E 00
67.25	5.2077E-11	6.7448E-11	1.5371E-11	7.460E 01	-2.3377E 01	3.0987E 00
137.00	1.5180E-11	1.8347E-11	-1.3167E-11	-1.950E 01	-2.4337E 01	3.1073E 00
141.75	1.4377E-12	1.5449E-11	1.4014E-11	4.760E 02	-2.4377E 01	3.1073E 00
263.25	8.4429E-12	4.3113E-12	-4.1314E-12	-4.840E 01	-2.4170E 01	3.2294E 00
350.25	4.7780E-12	2.4205E-12	-1.3575E-12	-3.840E 01	-2.4597E 01	3.2807E 00

GAS IS HYDROCARBON

POWER Y=0.0000P WITH S = 0.1740E-07 AND P = -0.0274E 00

USING THE MODEL LOG(Y)=ALPHA+R*(LOG(X)-XBAR) WHERE XBAR=MEAN VALUE OF LOG(X) AND ALPHA = LOG A + R * XBAR.
 ALPHA = -0.21310F 02 CONFIDENCE LIMIT ON ALPHA = 0.52011F 00 CONFIDENCE LIMIT ON R = 0.30507E 00

INDEXES	CORRELATION COEFFICIENT = -0.8426F 00	CORRELATION OF DETERMINATION = 0.7101E 00				
X	Y	Y CALC.	DIFFER.	ACT DIFF.	LOG OF Y	CONFIDENCE LIMIT ON LOG Y
2.00	2.3514F-08	4.8994E-09	-1.4055F-08	-5.8800F 01	-1.6435F 01	2.2440F 00
20.50	2.1458E-10	1.4774F-09	1.2704E-09	5.8290F 02	-2.0360E 01	1.8573E 00
31.00	4.6463F-10	1.0709E-09	4.7707F-11	5.6000E 00	-2.0703E 01	1.8238E 00
40.00	7.0244E-10	7.3644E-10	-4.6400E-11	-5.9000E 00	-2.1029E 01	1.8044F 00
46.75	5.7481E-10	7.2667E-10	1.4586E-10	2.6000F 01	-2.1043E 01	1.8060E 00
47.25	4.7004F-10	5.6507E-10	1.2480F-10	2.8000F 01	-2.1297E 01	1.8017F 00
75.00	7.1408F-10	4.9144F-10	-7.2742E-10	-3.1400E 01	-2.1434E 01	1.8028F 00
137.00	4.4625E-10	2.9593E-10	-6.8772E-10	-6.8800F 01	-2.1992E 01	1.8250E 00
141.25	2.6114E-10	2.9109F-10	2.9979E-11	1.1500E 01	-2.1997E 01	1.8279E 00
210.50	2.5064E-10	2.0724F-10	-4.1402F-11	-1.6500E 01	-2.2288E 01	1.8586F 00
233.25	1.8774E-10	1.6767F-10	-2.0074E-11	-1.0900F 01	-2.2533E 01	1.8890E 00
350.25	1.0704F-10	1.7730F-10	5.0277F-11	2.8200E 01	-2.2709E 01	1.9163F 00

IEF2851	SVST0264,"004821,RV000,CLAP,FJCR118	PASSED
IEF2851	VOL SER NOS= CL1801.	
IEF2851	SVST0264,"004821,SV000,CLAP,PC000052	SYSCUT
IEF2851	VOL SER NOS= 000000.	
IEF2851	SVST0264,"004821,RV000,CLAP,FJCR118	DELETE
IEF2851	VOL SER NOS= CL1801.	
IEF2851	SVST0264,"004821,RV000,CLAP,LT20	DELETE
IEF2851	VOL SER NOS= 272227.	
IEF2851	SVST0264,"004821,SV000,CLAP,PC000053	DELETE
IEF2851	VOL SER NOS= XXXXXX.	
IEF2851	SVST0264,"004821,RV000,CLAP,SC000054	SYSLN
IEF2851	VOL SER NOS= CDDDD.	
IEF2851	SVST0264,"004821,RV000,CLAP,SC000054	DELETE
IEF2851	VOL SER NOS= CDDDD.	

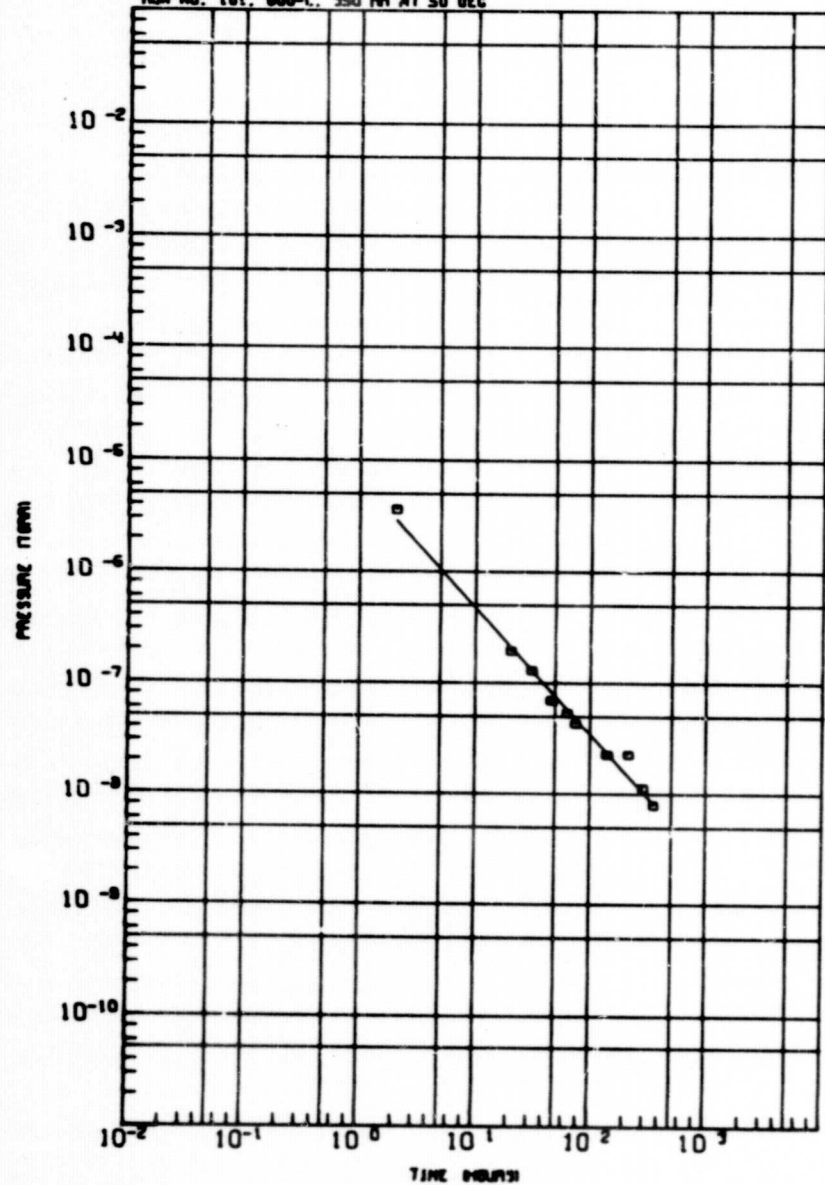
CLAP GP 18.57.23 10-22-70 REGION ALLOC.= 240K MACH. USE SEC.= 288.0K REGION USPT= 182
 CPU SEC.= 267.0K I/O REQUESTS= 42

CLAP MCDL=75 1222 18.57.23 10-22-70
 TOTAL CPU SEC.= 137.4K TOTAL I/O REQUESTS= 1327/MAX. REGION ALLOC.= 470K MACH. USE SEC.= 349.4K/MAX. REGION USPT= 472

ION GAGE

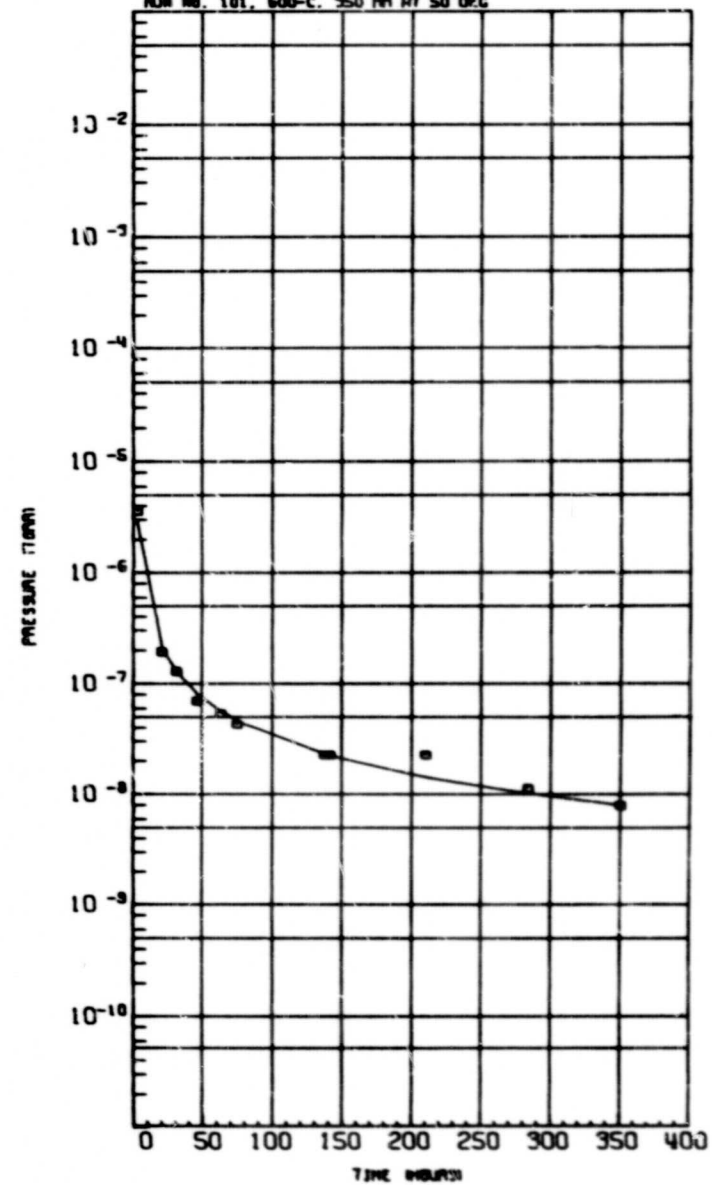
SLOPE = -1.139E 00

RUN NO. 101, 600-C, 350 MP AT 50 DEG



ION GAGE

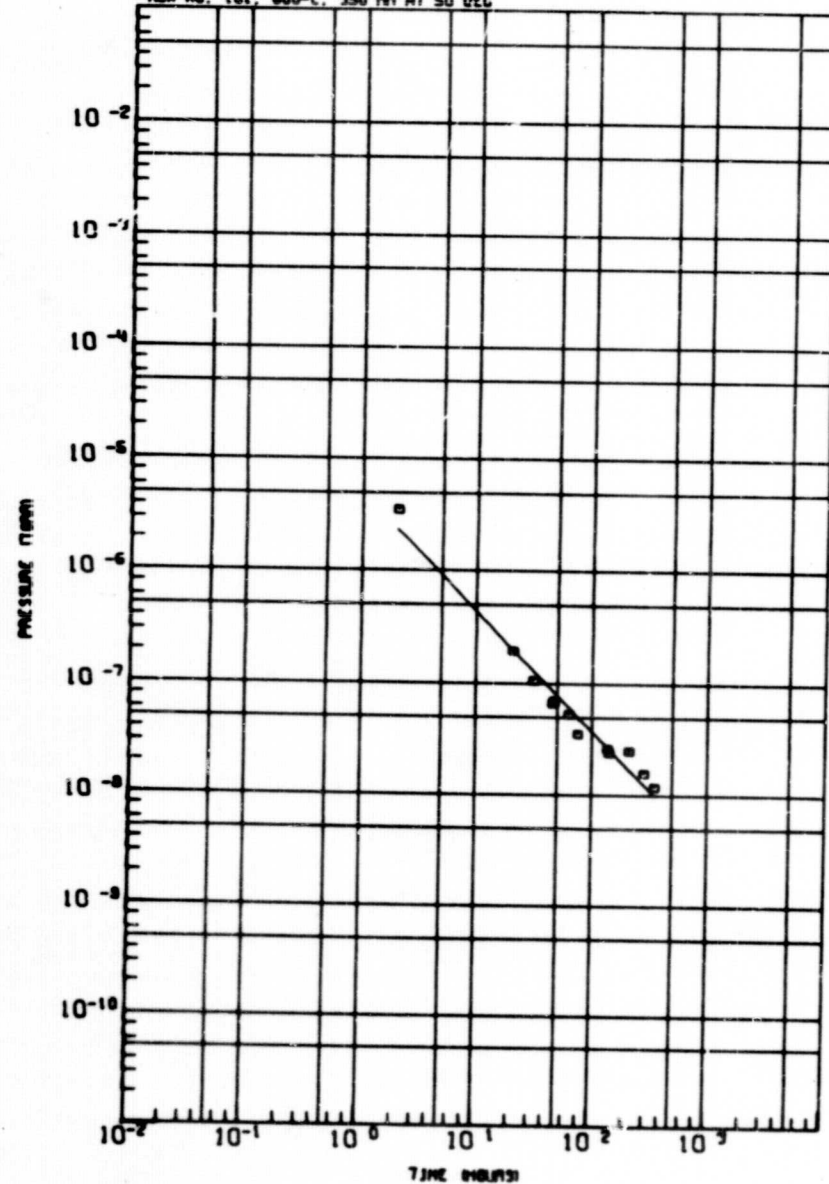
RUN NO. 101, 600-C, 350 MP AT 50 DEG



TOTAL PRESSURES

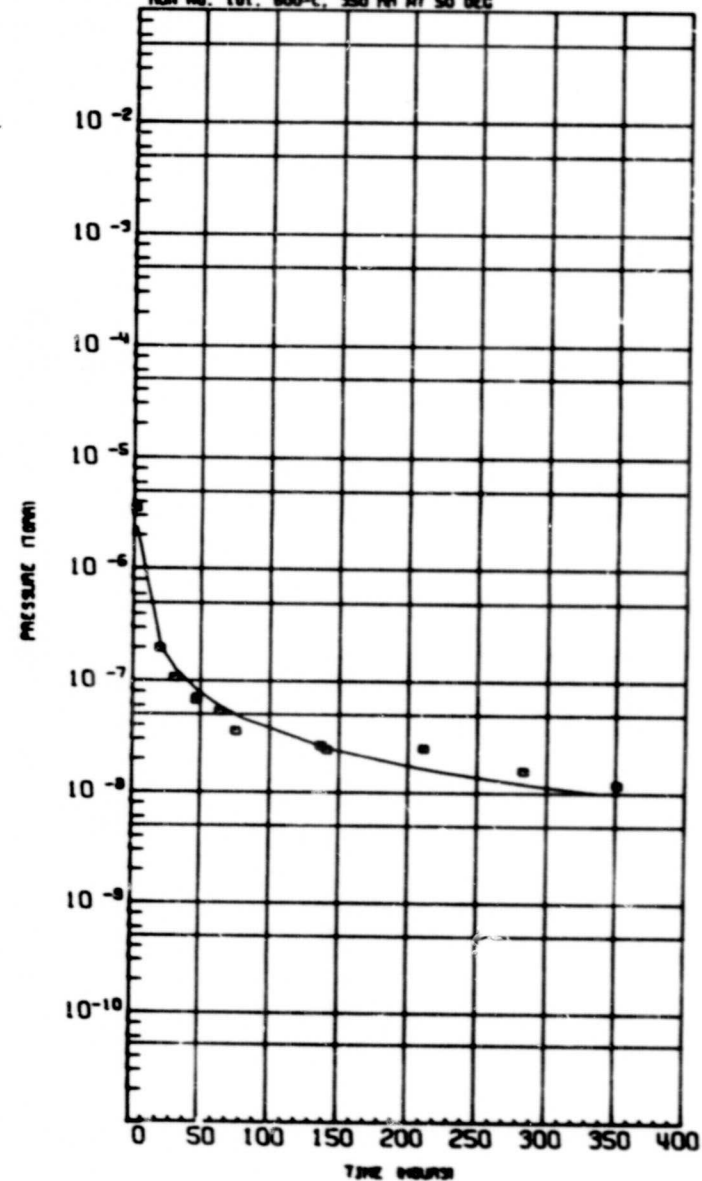
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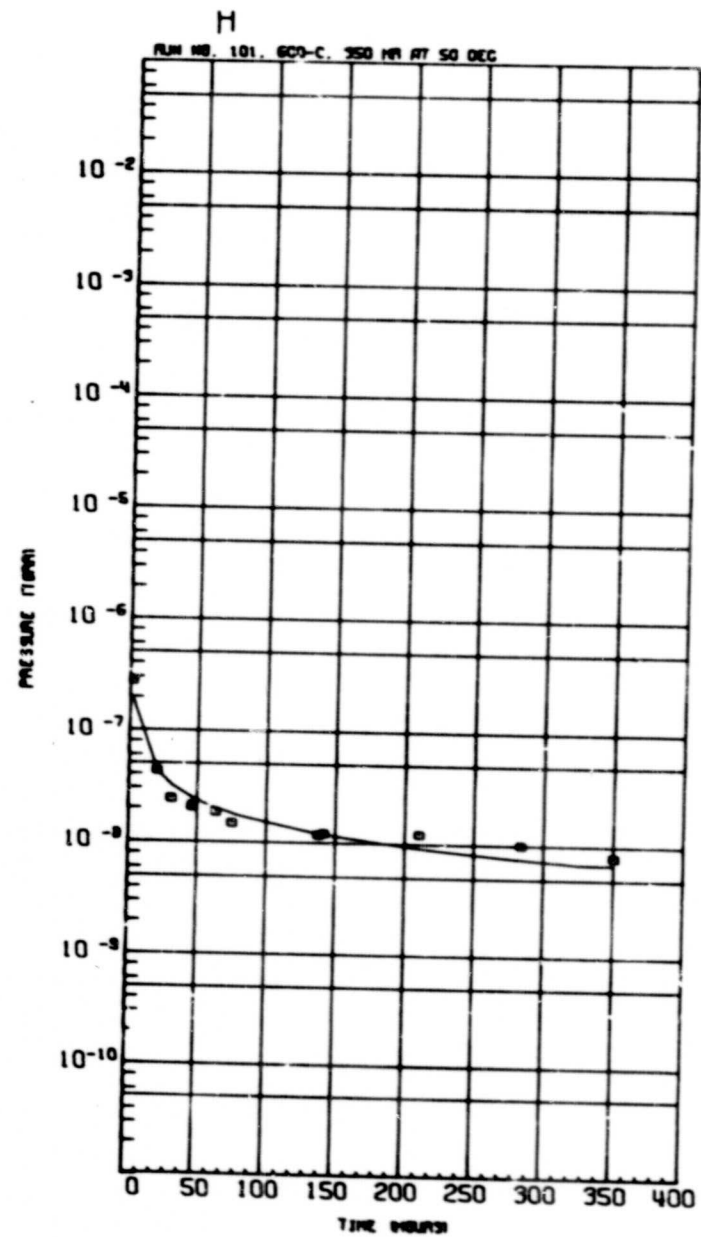
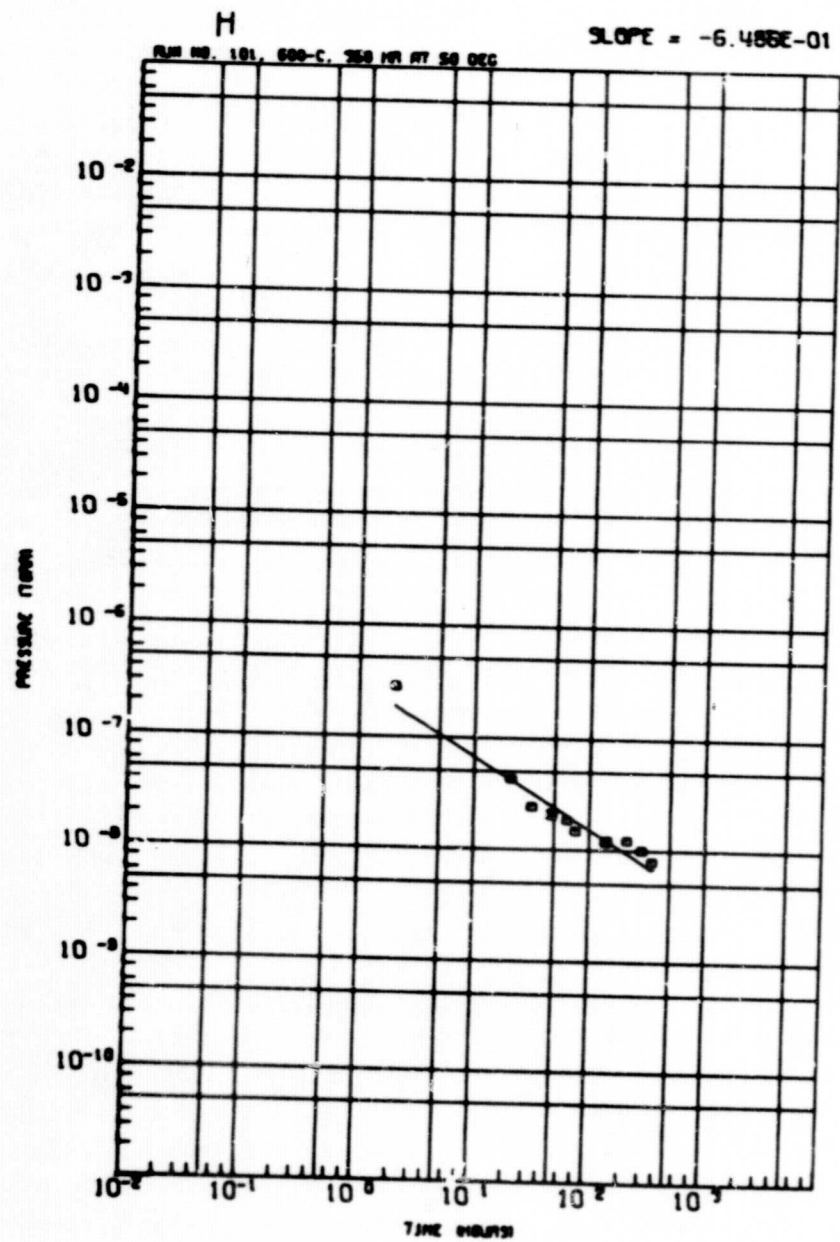
RUN NO. 101, 600-C, 350 MP AT 50 DEG



TOTAL PRESSURES

RUN NO. 101, 600-C, 350 MP AT 50 DEG

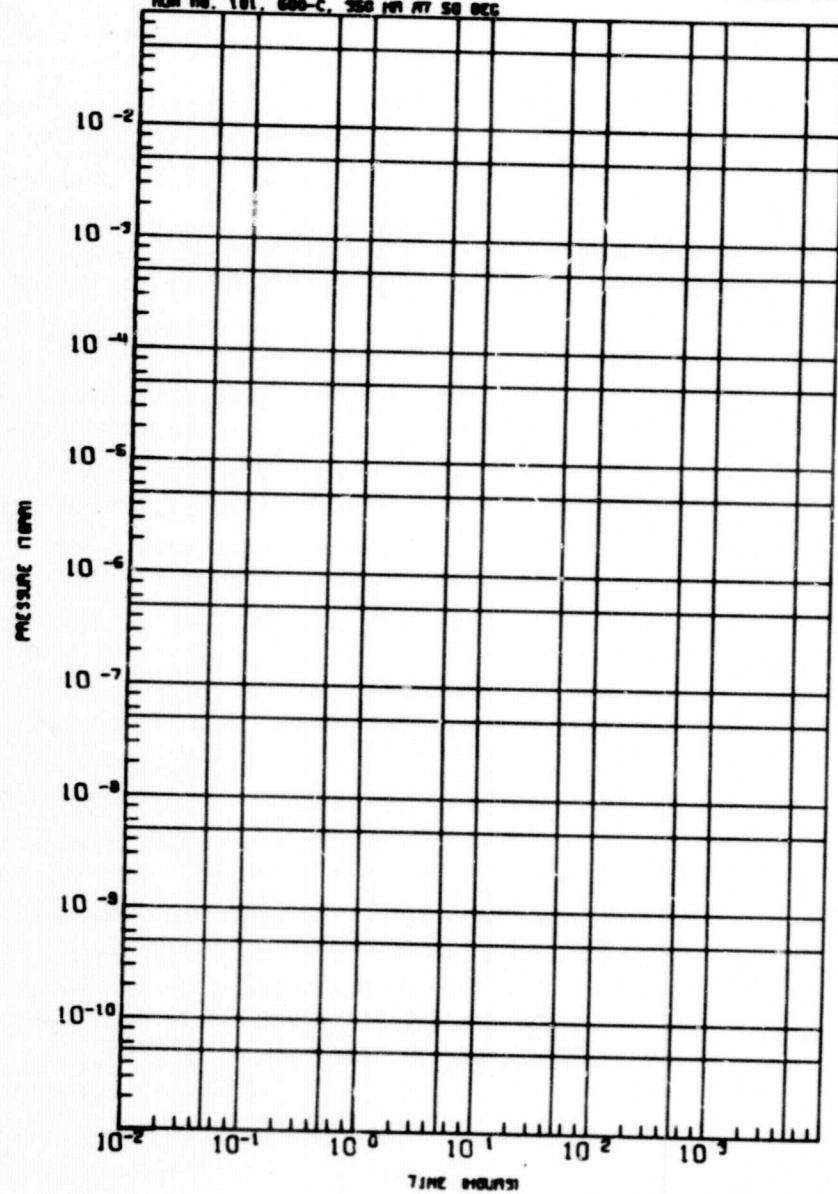




HELIUM

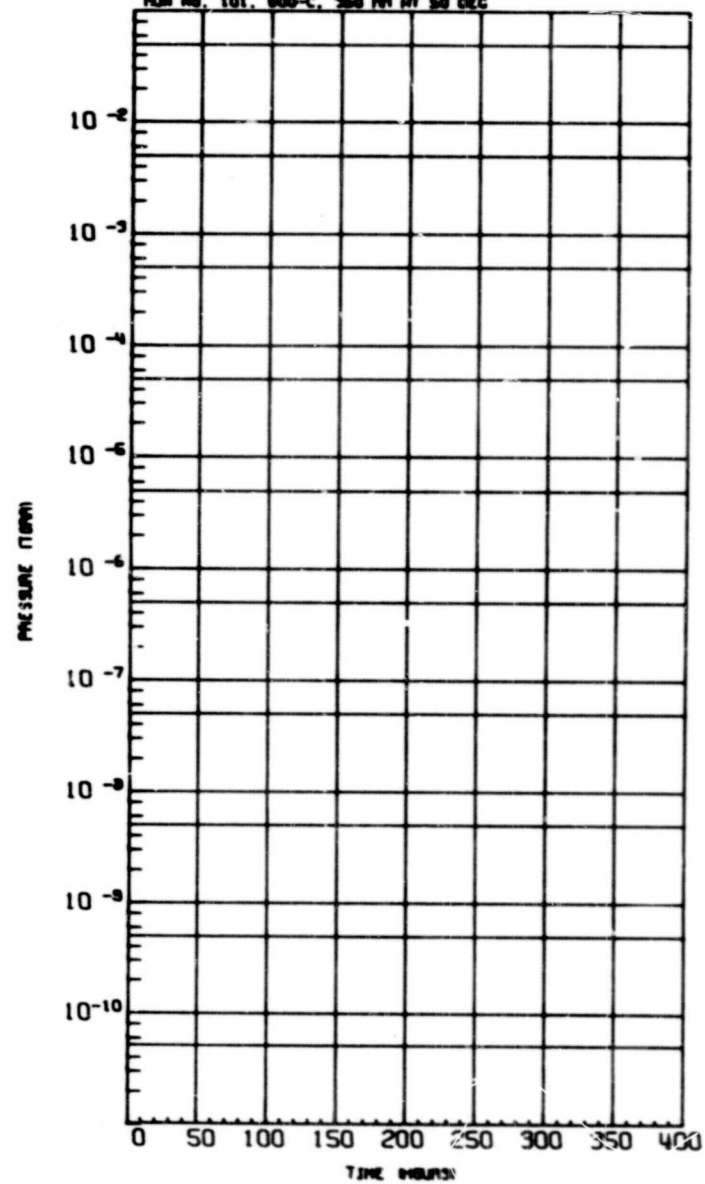
SLOPE = $-5.975E-05$

RUN NO. 101, 600-C, 350 MP AT 50 DEC



HELIUM

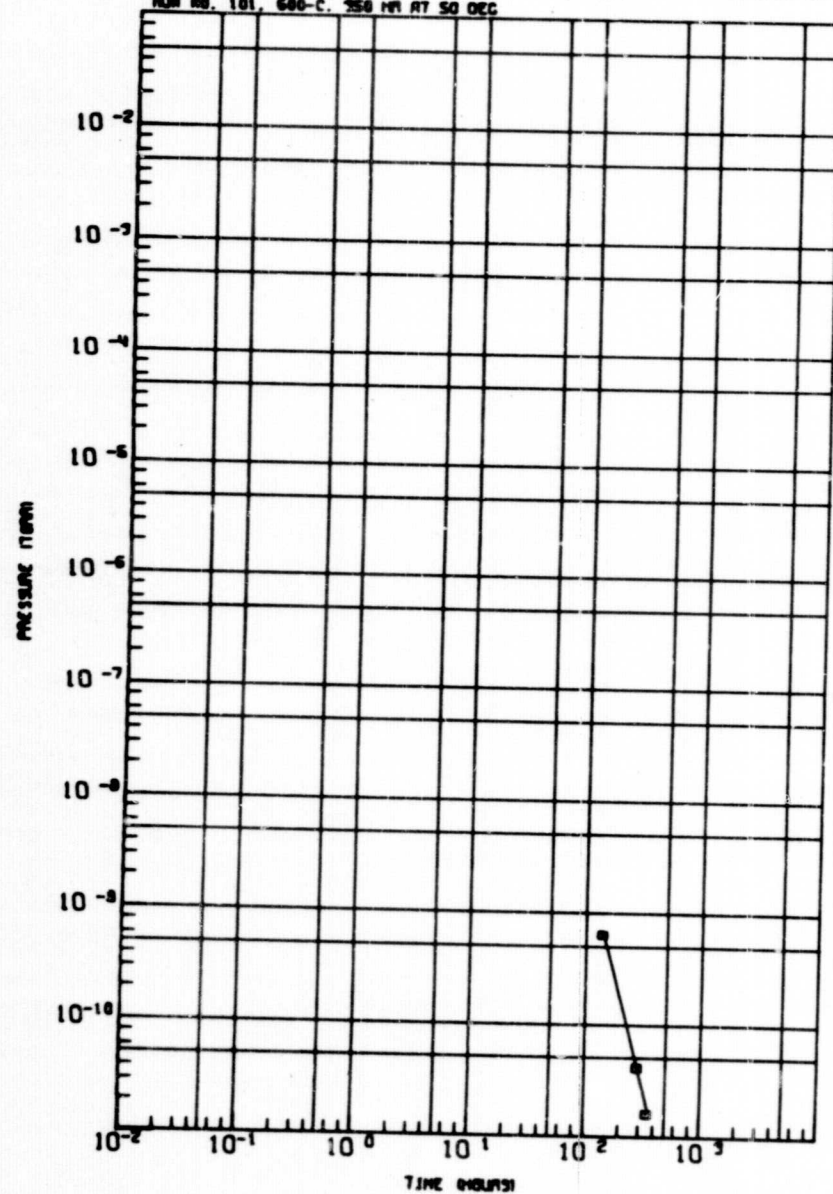
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METHANE

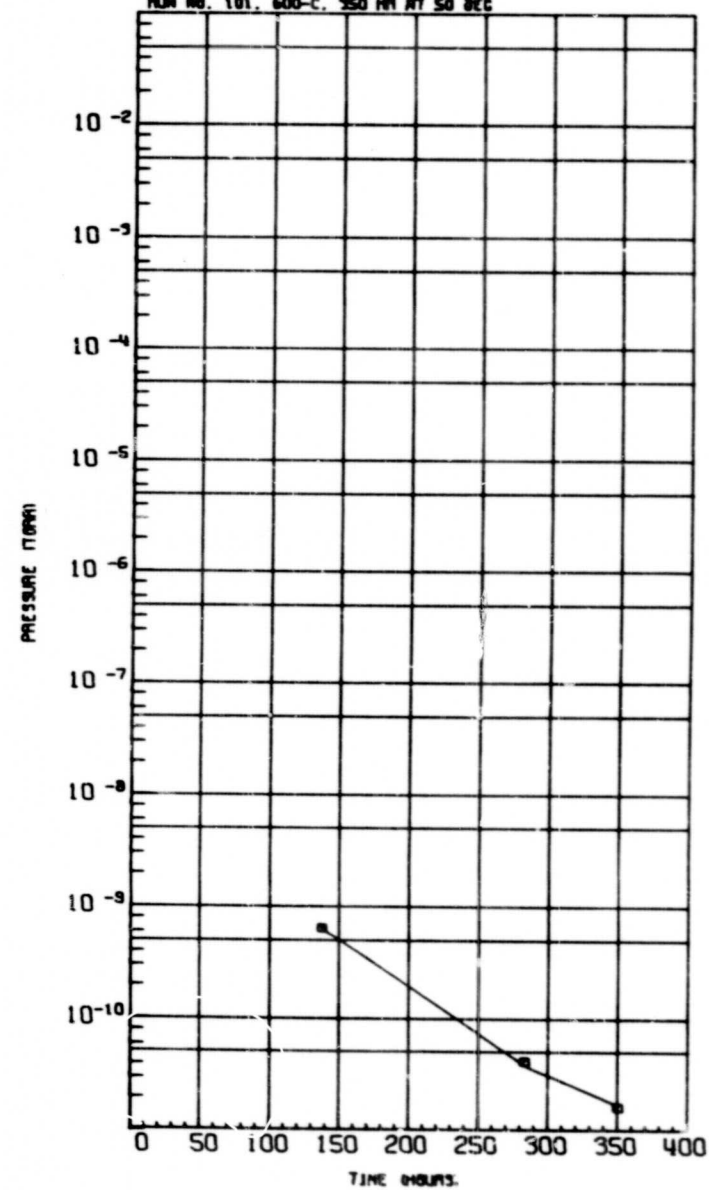
SLOPE = -3.851E 00

RUN NO. 101, 600-C, 350 HPI AT 50 DEG



METHANE

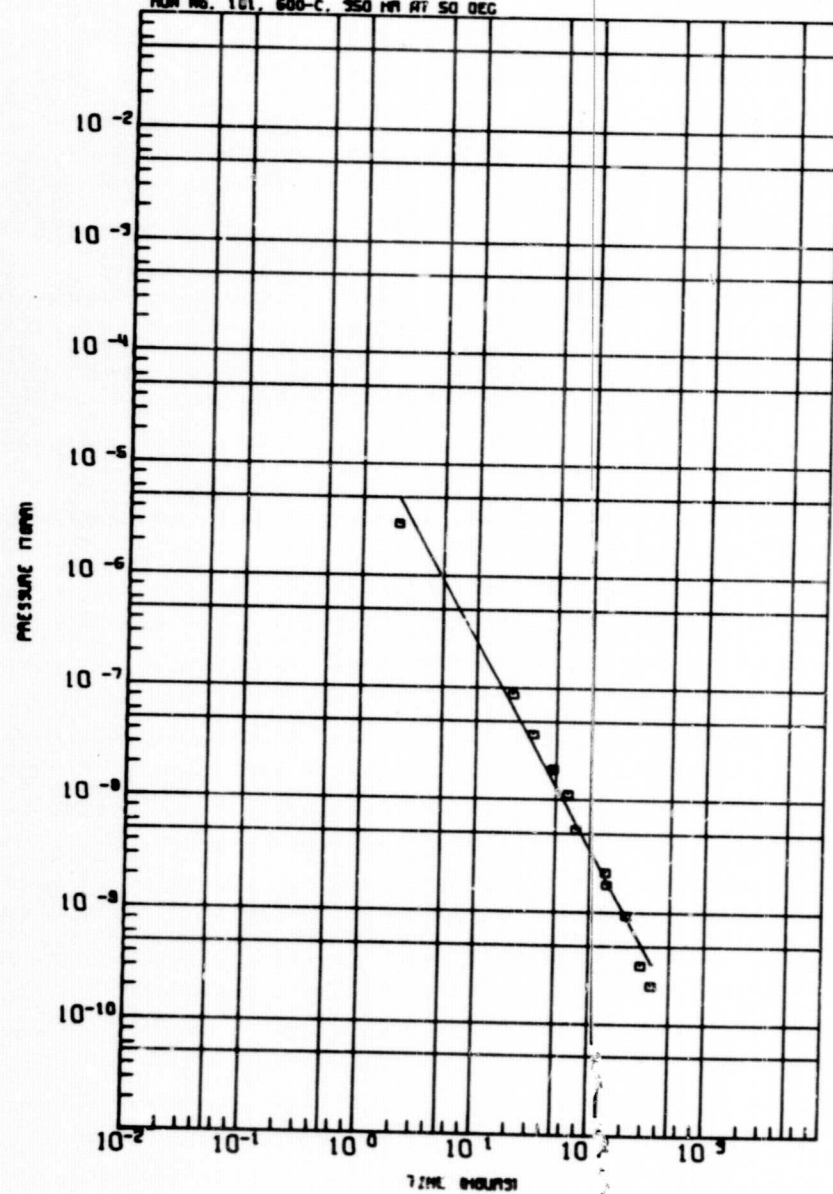
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WATER VAPOR

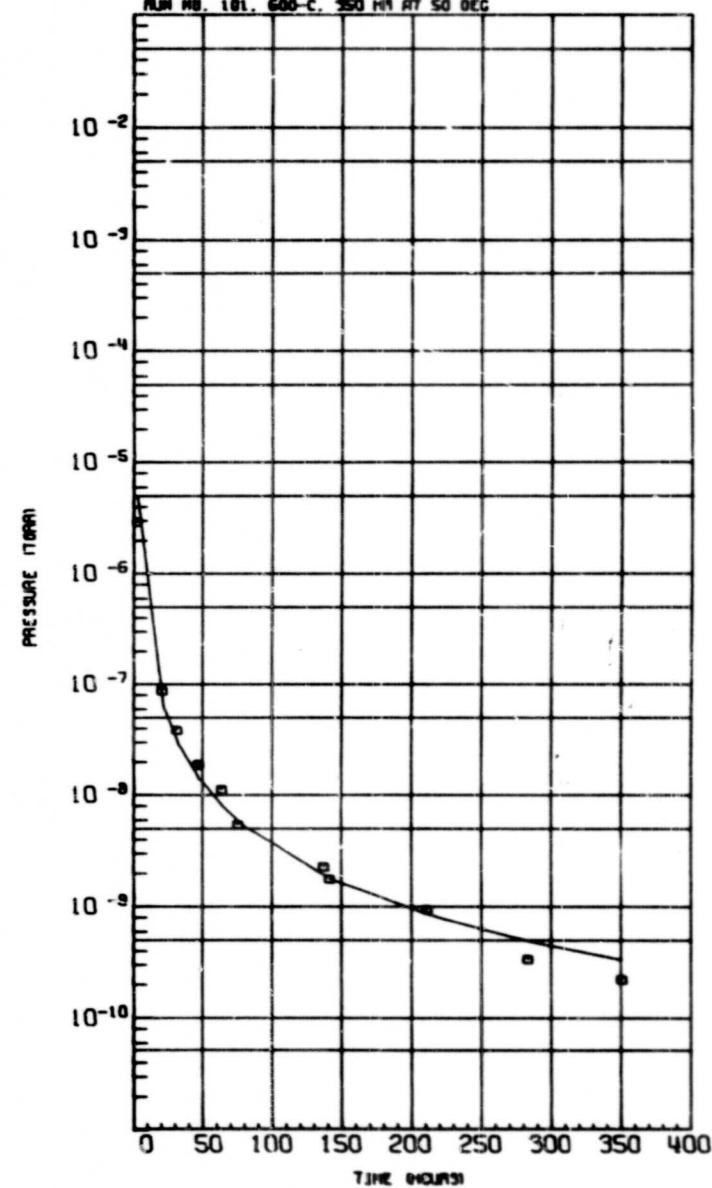
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RUN NO. 101, 600-C, 350 MP AT 50 DEG



WATER VAPOR

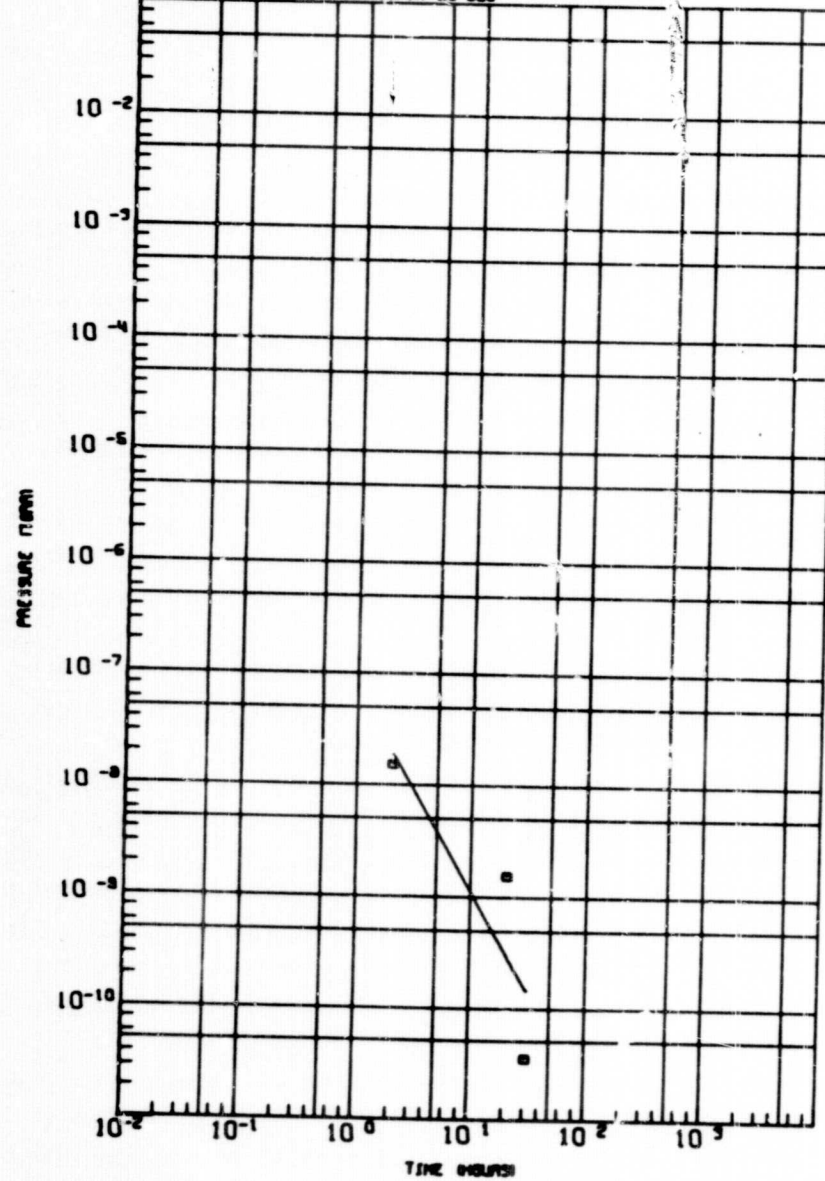
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NITROGEN

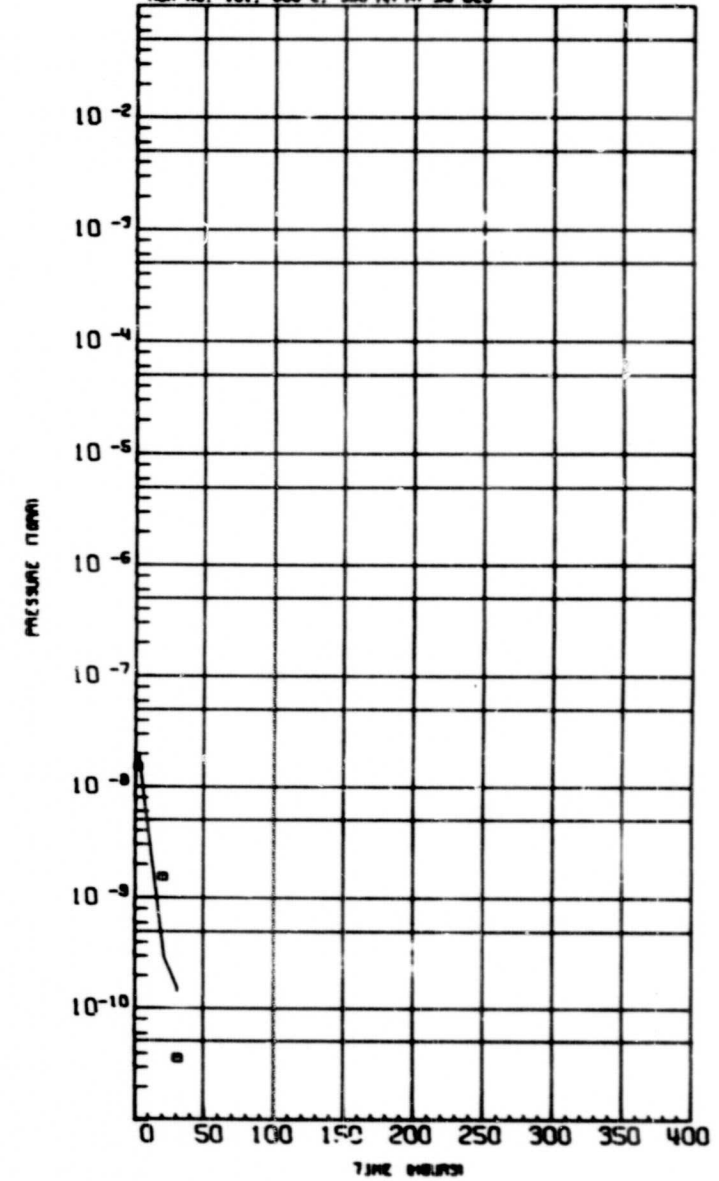
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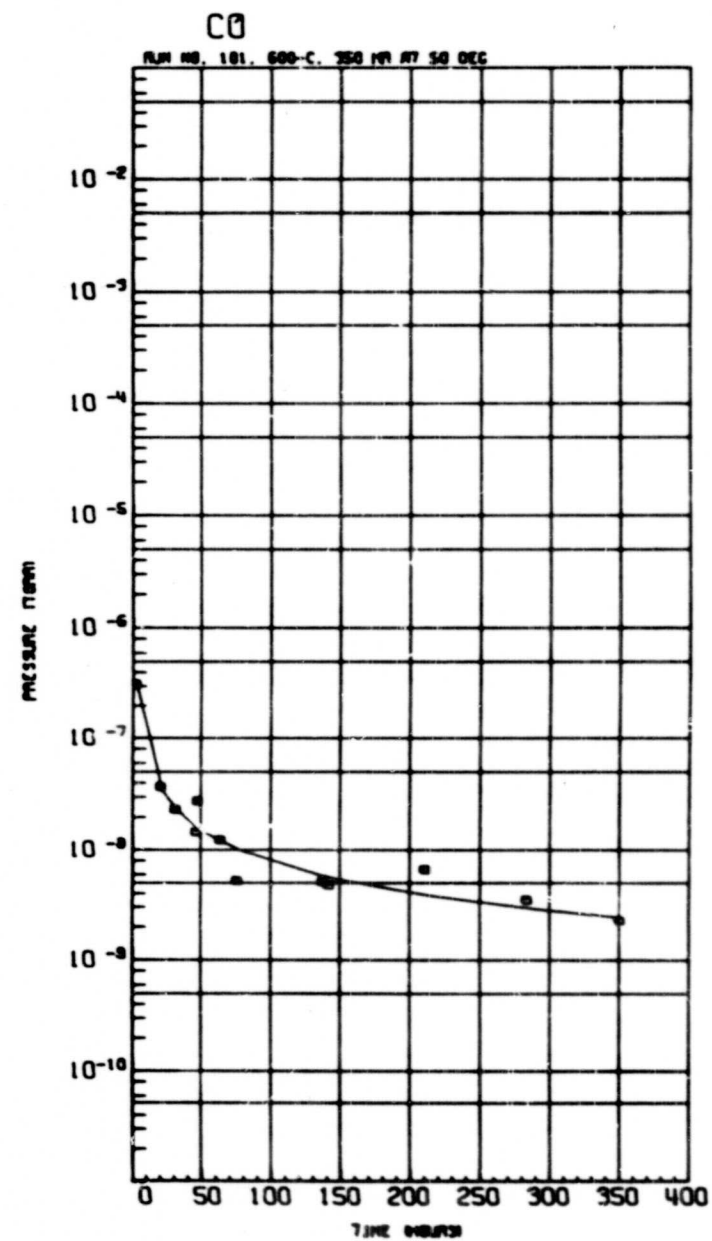
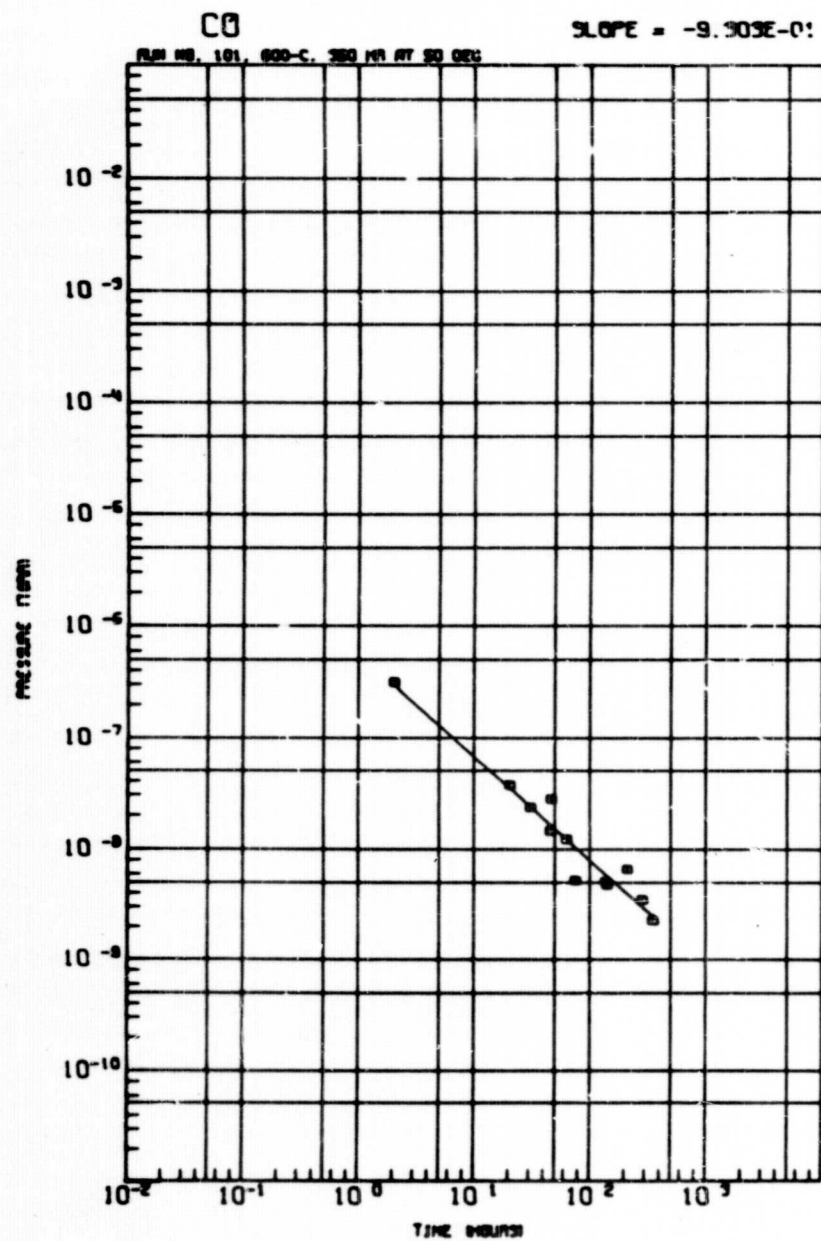
RUN NO. 101, 600-C, 350 MM AT 50 DEG



NITROGEN

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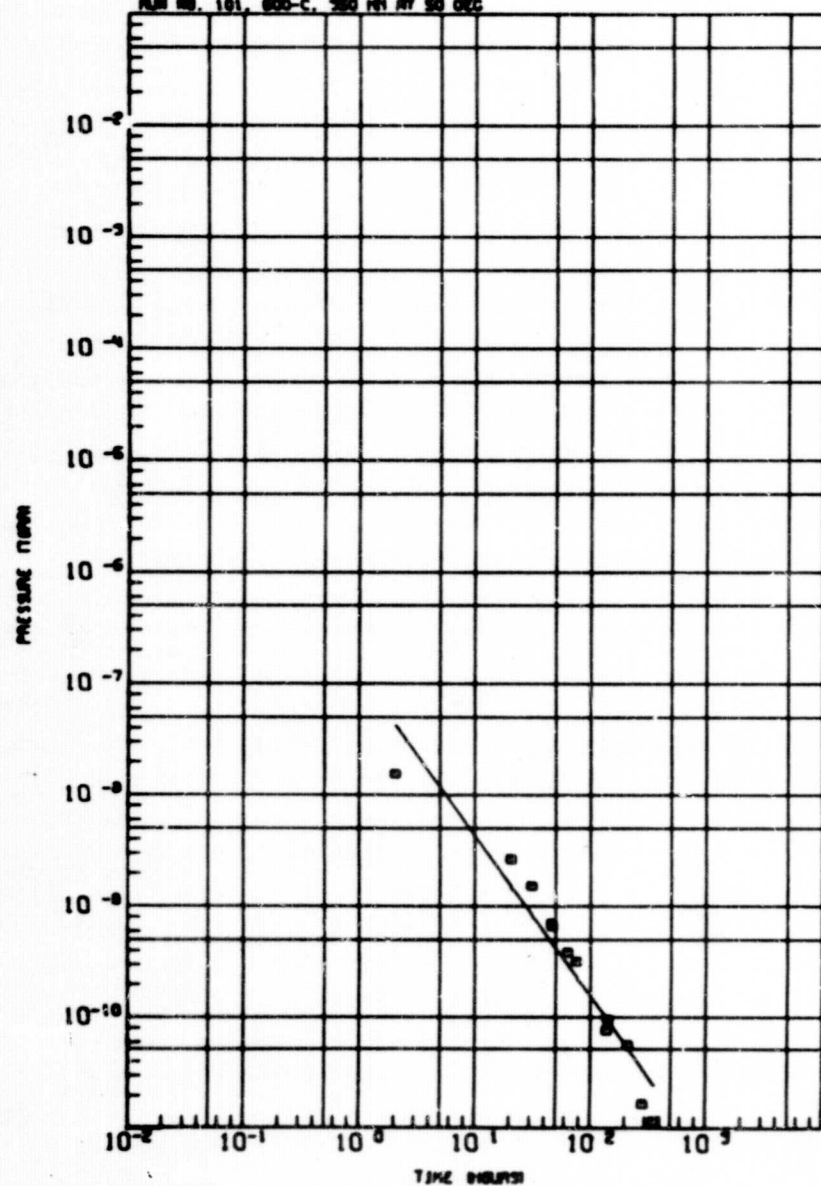




OXYGEN

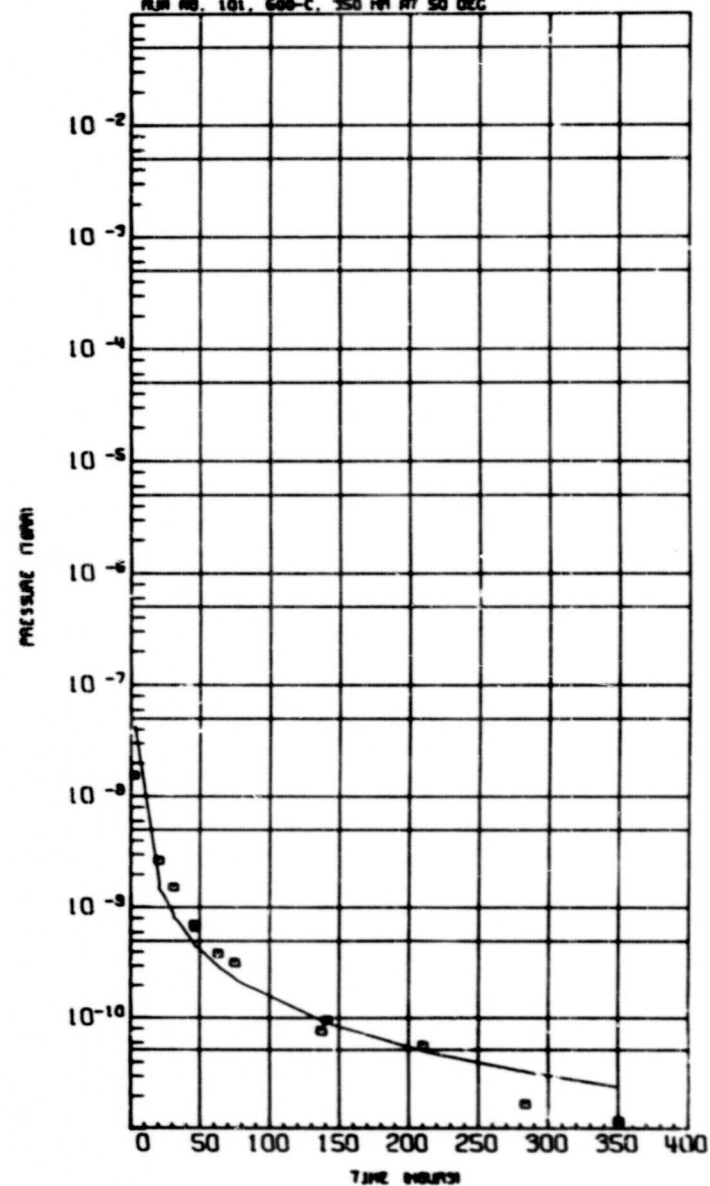
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RUN NO. 101, 600-C, 350 MP AT 50 DEG



OXYGEN

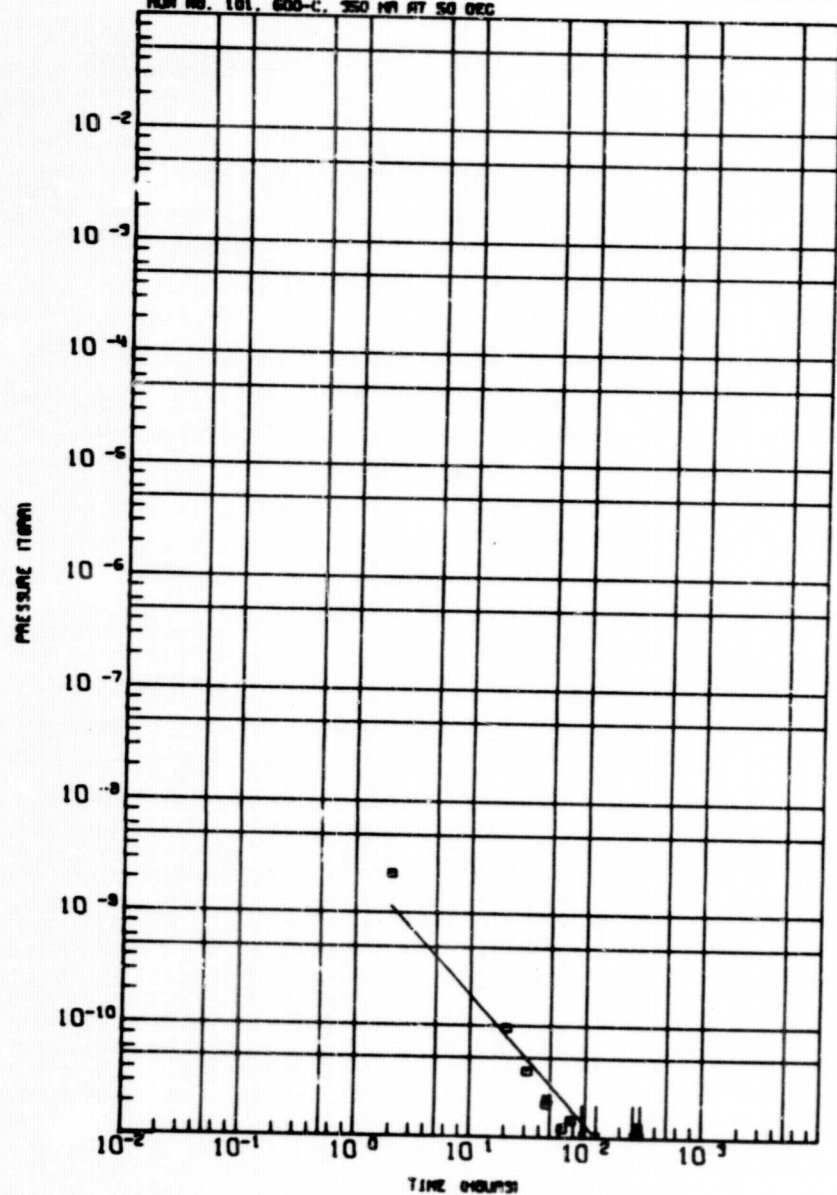
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ARGON

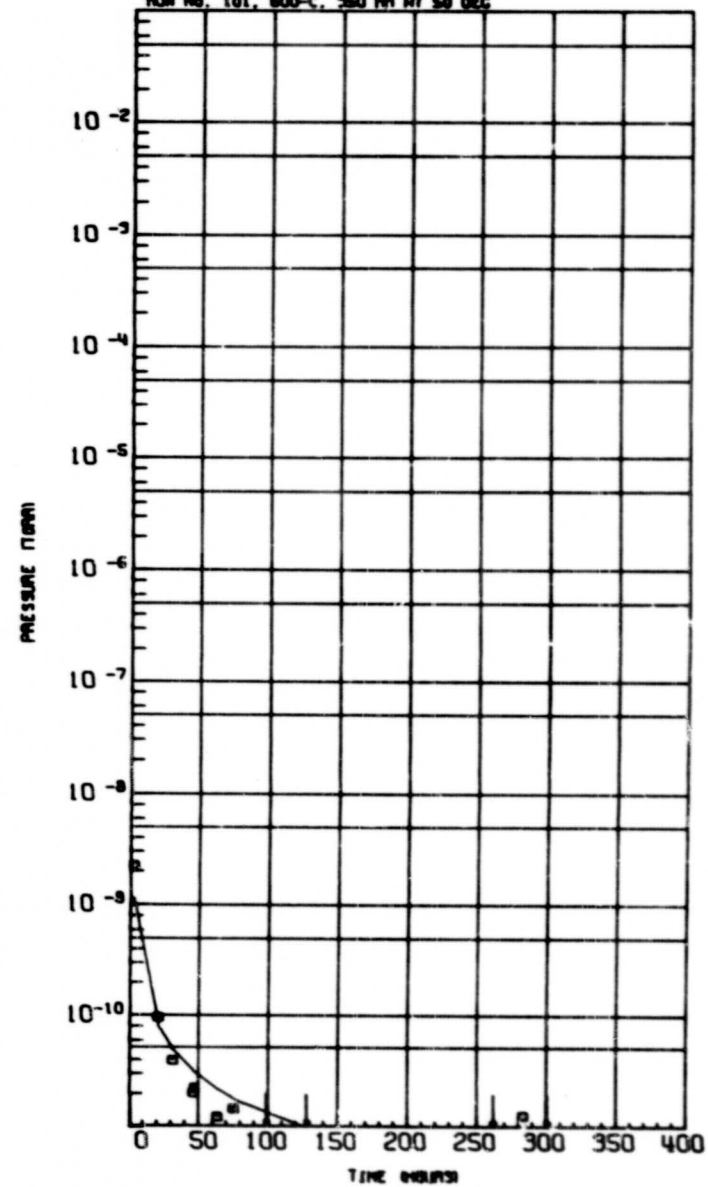
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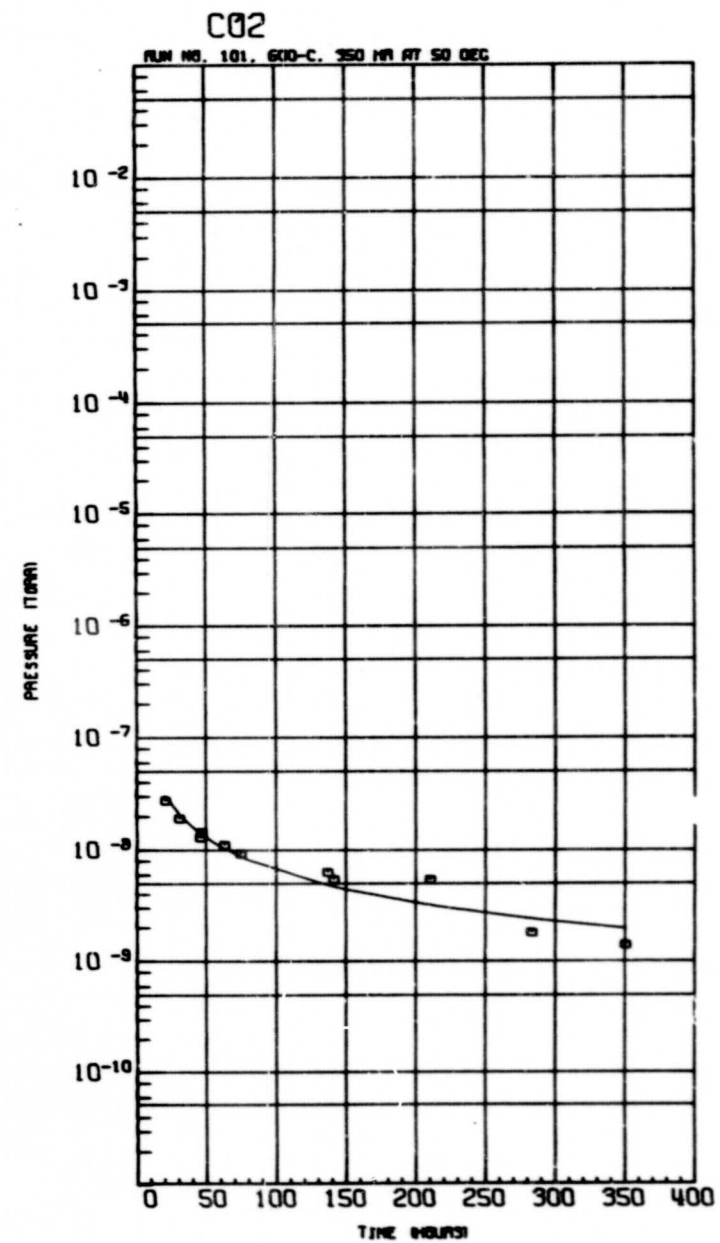
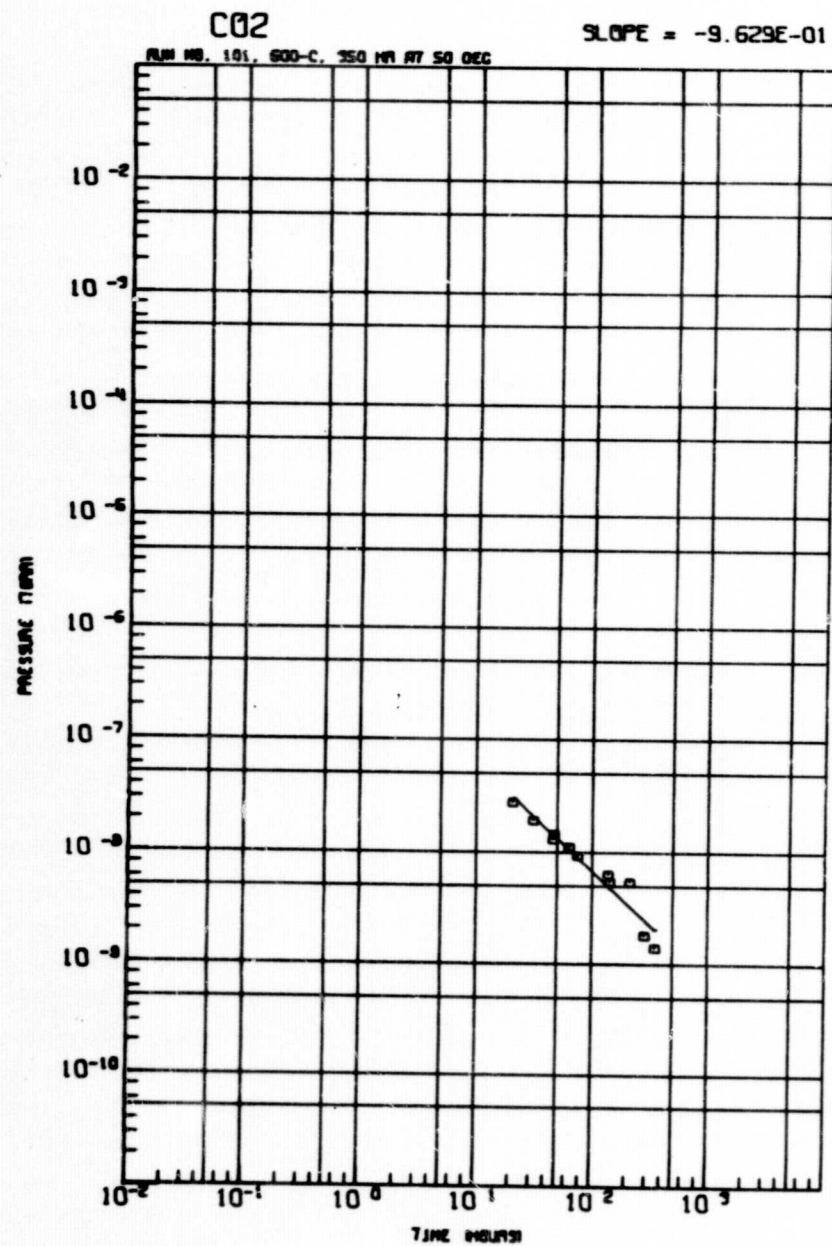
RUN NO. 101, 600-C, 350 MP AT 50 DEG



ARGON

RUN NO. 101, 600-C, 350 MP AT 50 DEG

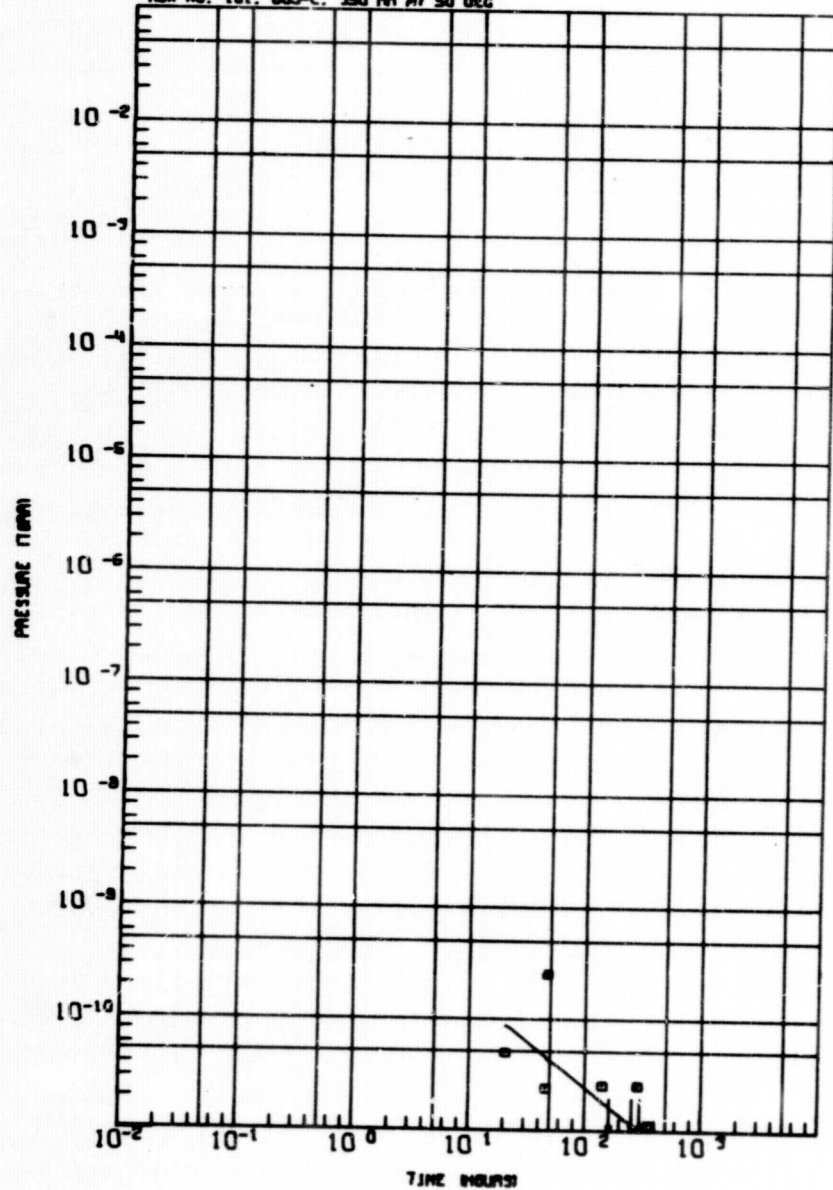




C2H4

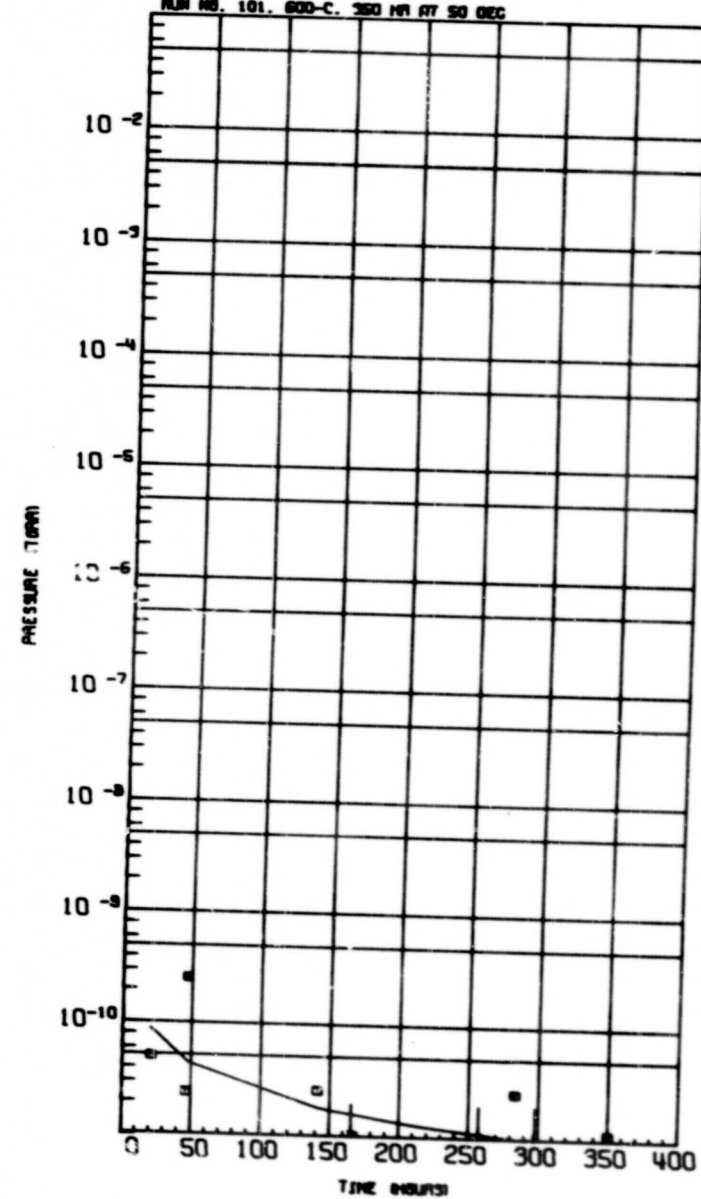
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RUN NO. 101, 600-C, 350 MM AT 50 DEG



C2H4

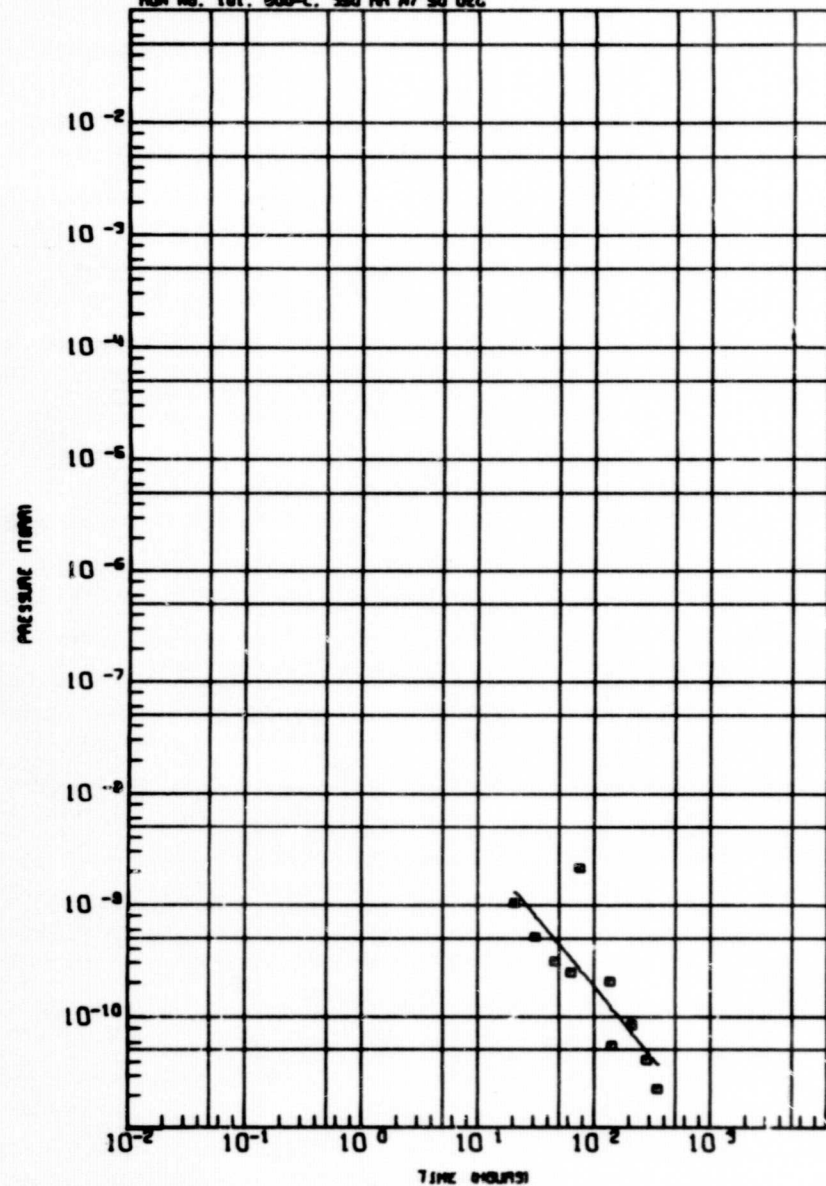
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C2H6

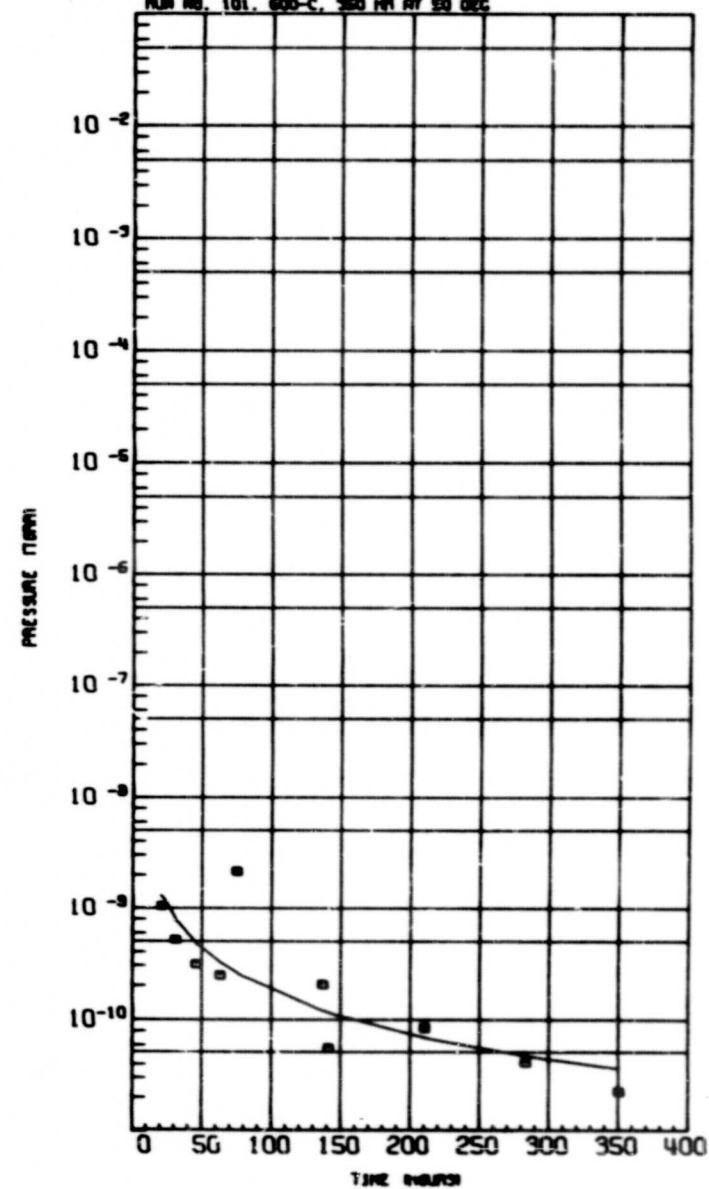
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RUN NO. 101, 500-C, 350 MP AT 50 DEG



C2H6

RUN NO. 101, 500-C, 350 MP AT 50 DEG

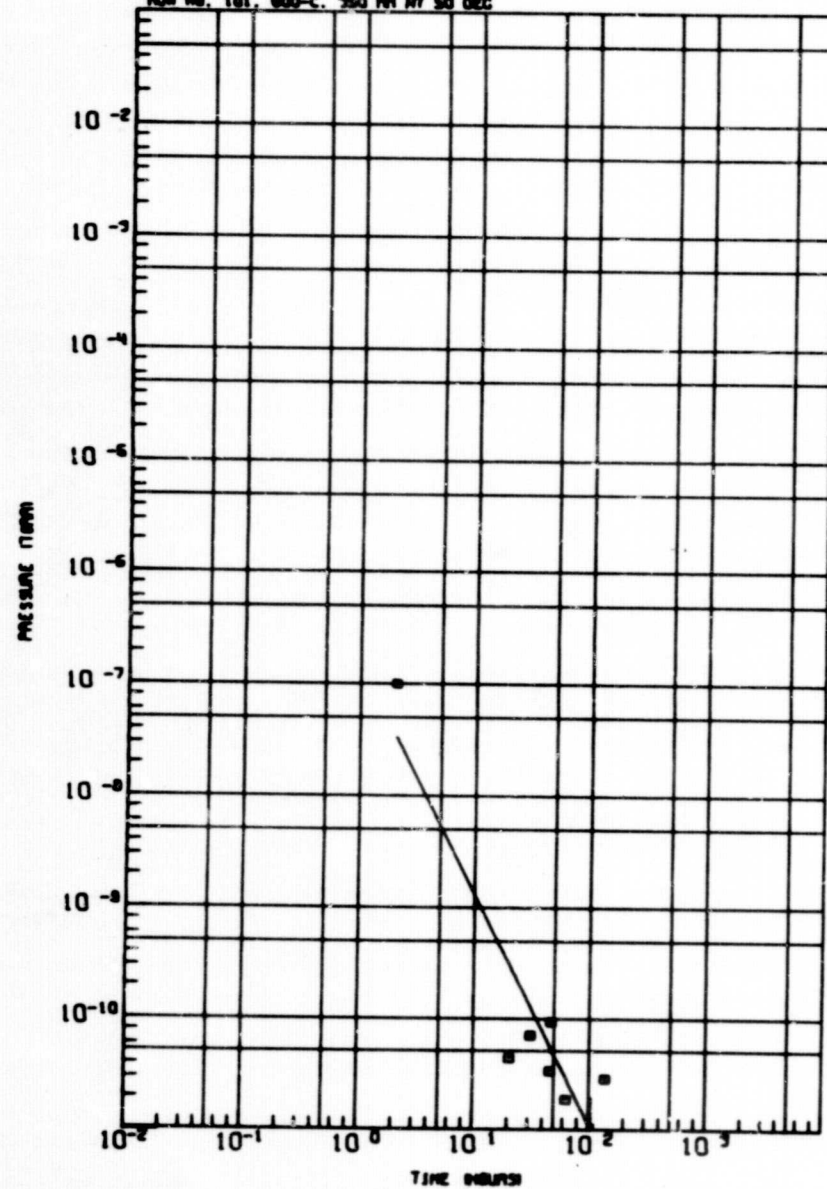


88

C3H8

SLOPE = -2.052E 00

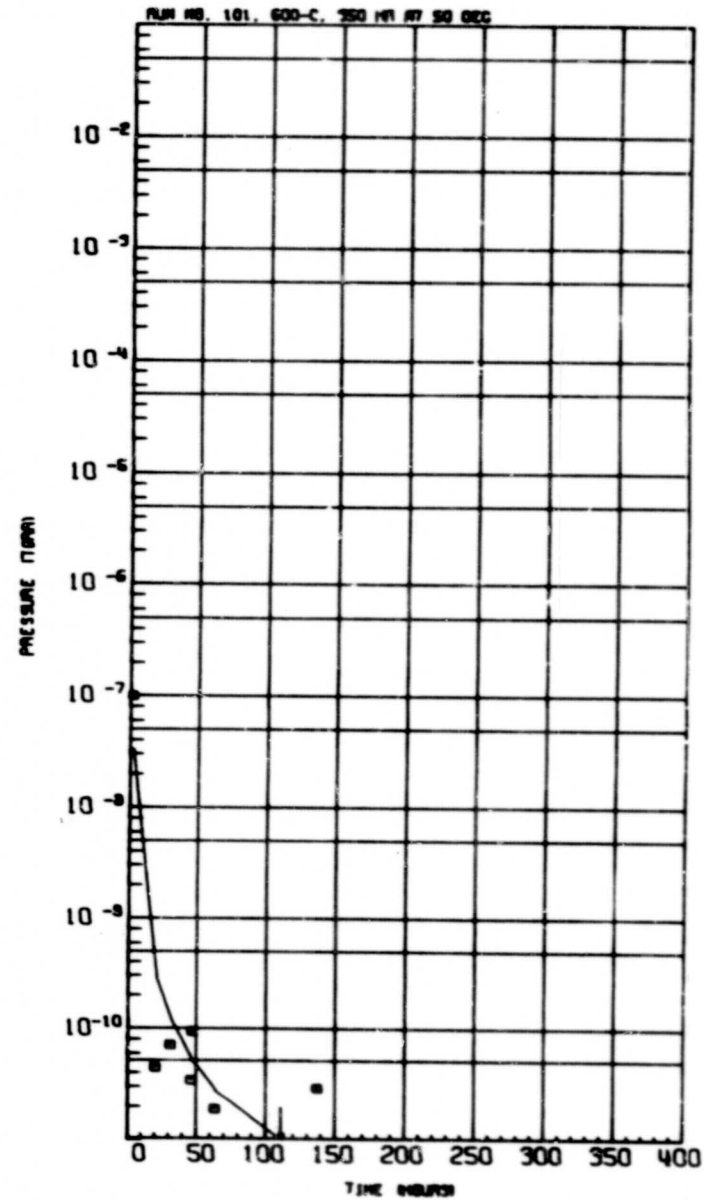
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89

C3H8

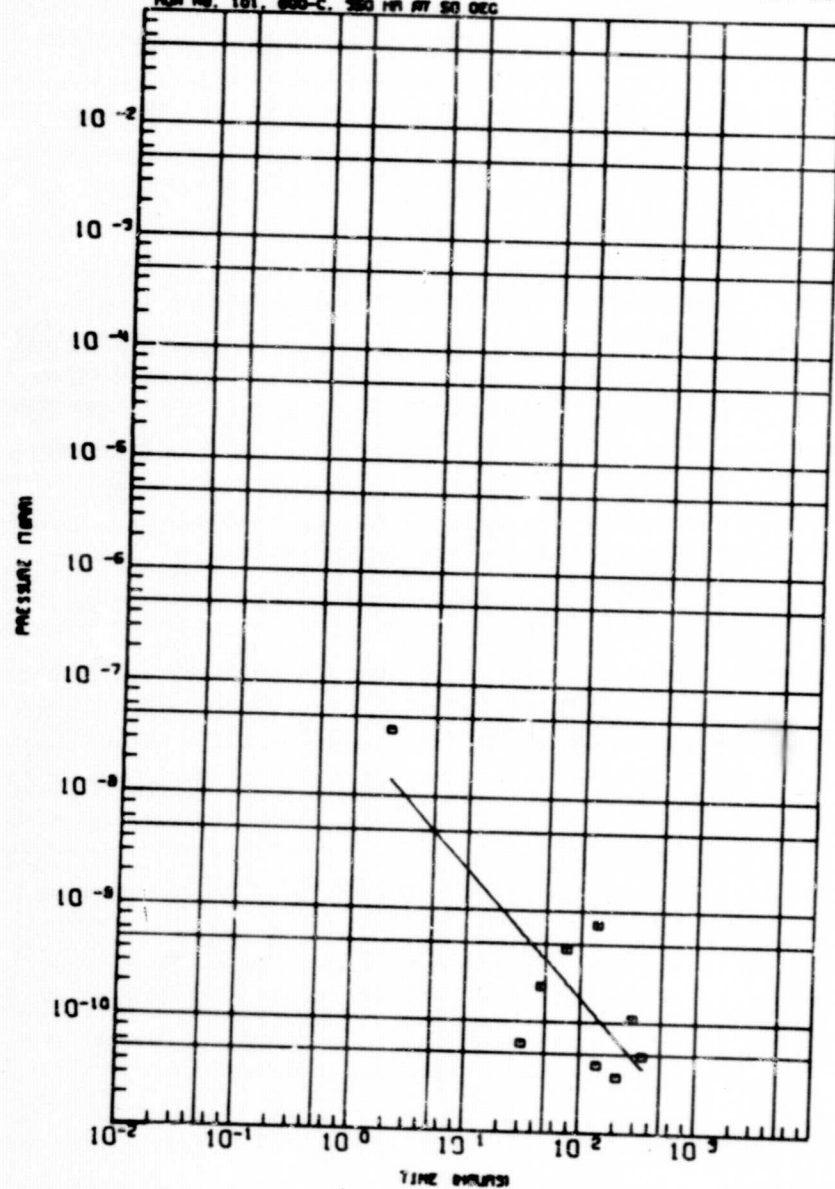
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HYDROCARBONS

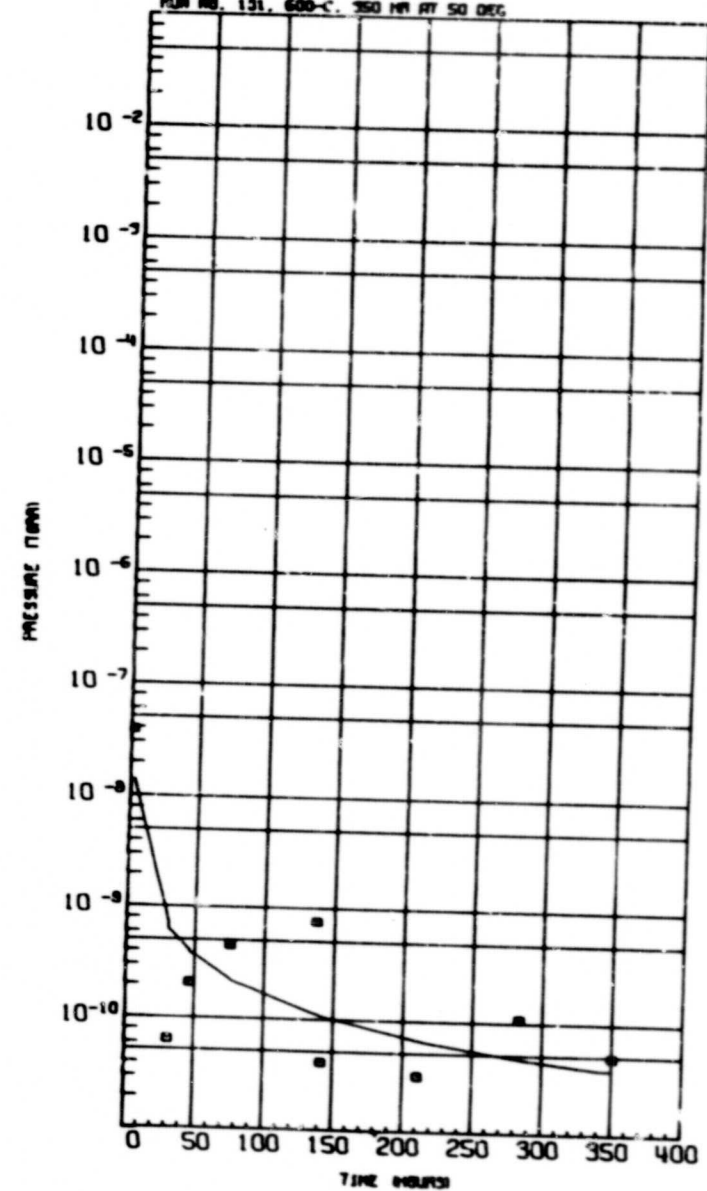
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RUN NO. 101, 600-C, 350 MM AT 50 DEG



HYDROCARBONS

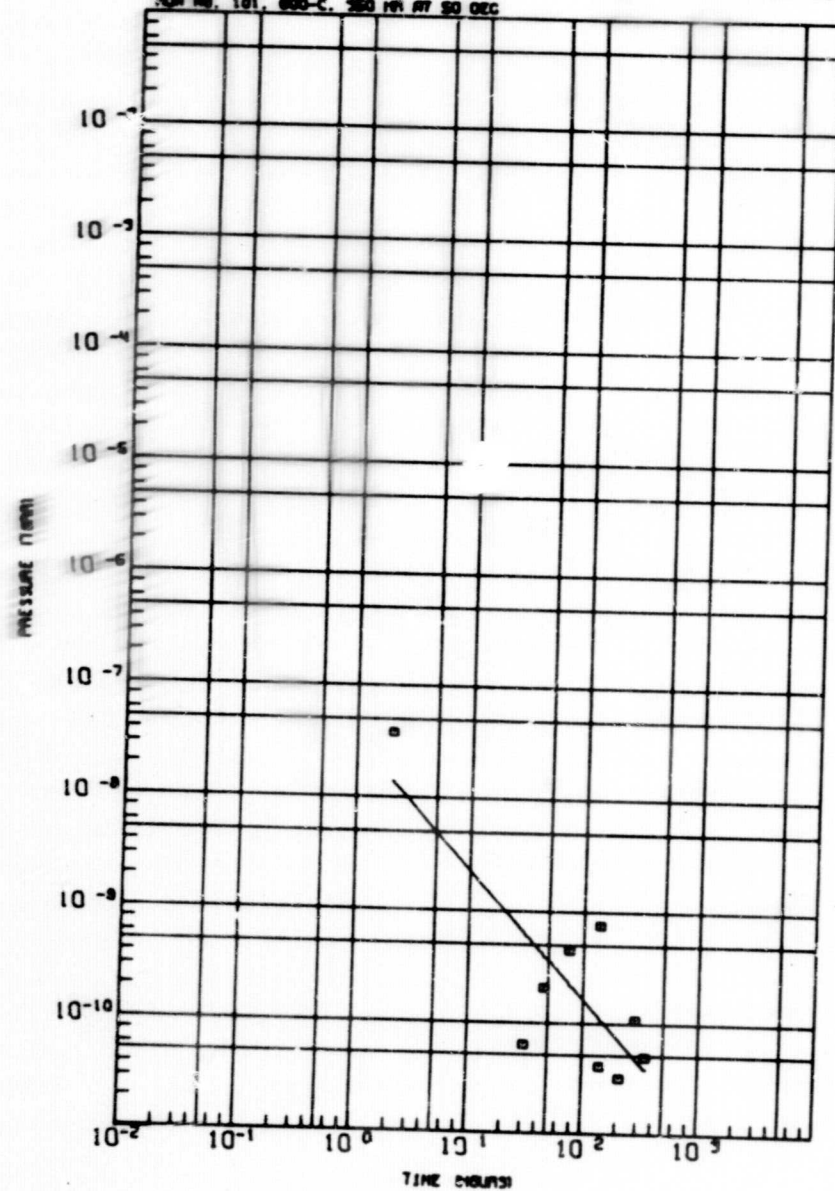
RUN NO. 131, 600-C, 350 MM AT 50 DEG



HYDROCARBONS

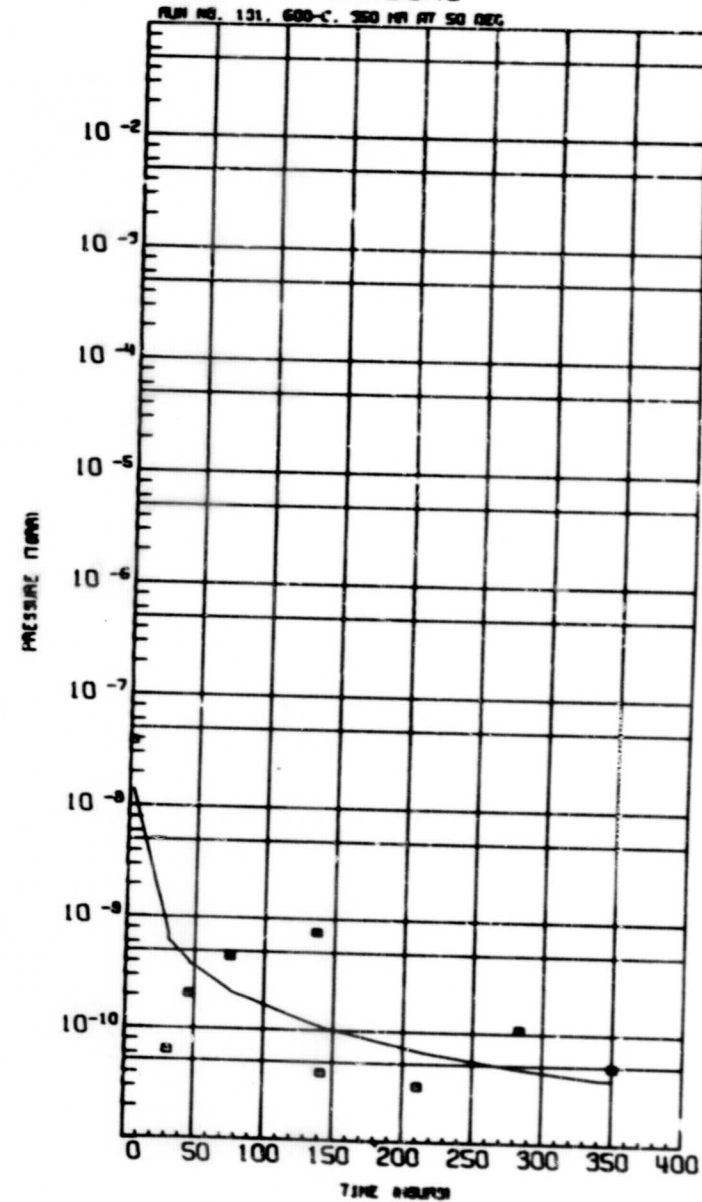
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RUN NO. 101, 600-C, 350 PSI AT 50 DEG

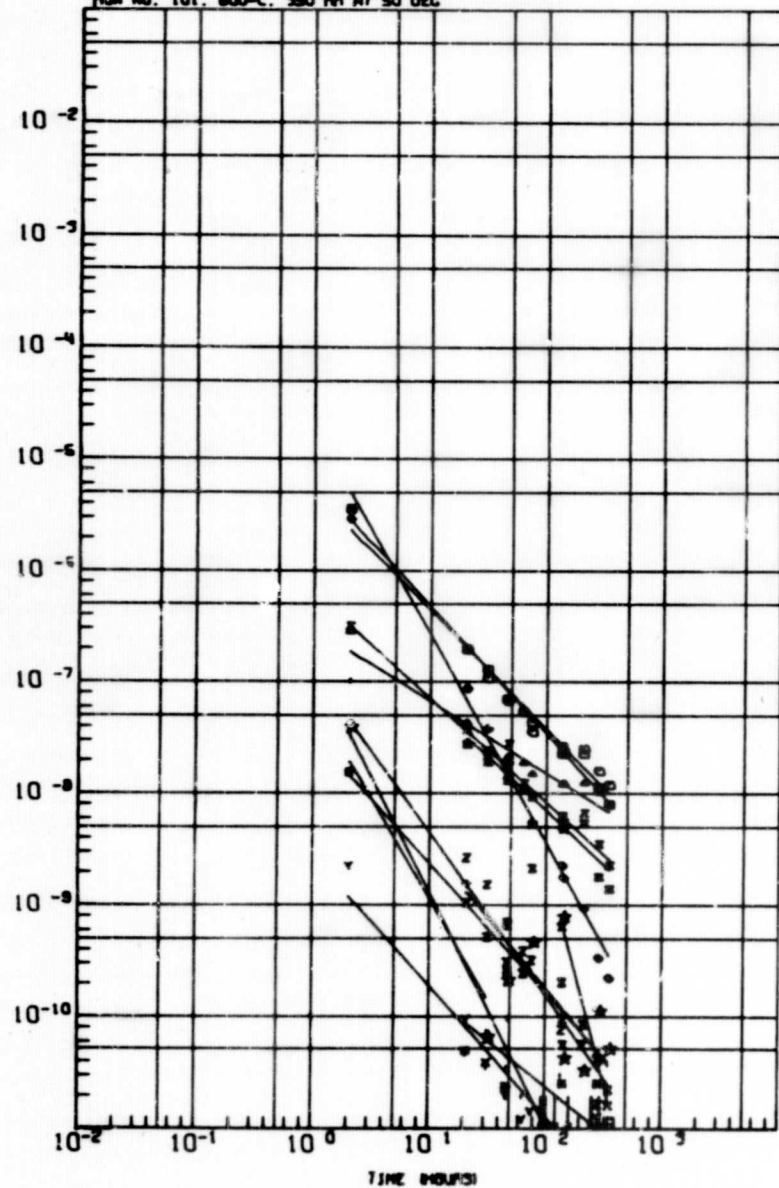


HYDROCARBONS

RUN NO. 131, 600-C, 350 PSI AT 50 DEG



FILE NO. 101. 600-C. 250 HP AT 50 DEG



LEGEND

- | | |
|---|------|
| 0 | GRCE |
| 1 | TETA |
| 2 | H |
| 3 | HELI |
| 4 | HETH |
| 5 | WHTA |
| 6 | WHTH |
| 7 | CB |
| 8 | EXYC |
| 9 | ANCB |
| A | CBZ |
| B | CBTH |
| C | CBH6 |
| D | CBH8 |
| E | MYTH |

FILE NO. 101, 600-C, 350 MP AT 50 DEG

