ORO5205-11-2

ngr #212

INDIVIDUAL WELL REPORT
FROM THE PROGRAM ON

CHARACTERIZATION AND ANALYSIS OF DEVONIAN SHALES AS RELATED TO RELEASE OF GASEOUS HYDROCARBONS

WELL K-4 JOHNSON COUNTY, KENTUCKY

by

R. S. Kalyoncu and M. J. Snyder

BATTELLE
Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201

Date Published - August 15, 1979

PREPARED FOR THE UNITED STATES
DEPARTMENT OF ENERGY

Under Contract No. DE-AC21-76MC05205

INDIVIDUAL WELL REPORT
FROM THE PROGRAM ON

CHARACTERIZATION AND ANALYSIS OF DEVONIAN SHALES AS RELATED TO RELEASE OF GASEOUS HYDROCARBONS

WELL K-4 JOHNSON COUNTY, KENTUCKY

from

BATTELLE
Columbus Laboratories

DOE Contract No. DE-AC21-76MC05205

"This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States DOE, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability of responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights."

LIST OF CONTRIBUTORS

M. J. Snyder, Program Manager

R. S. Kalyoncu, Principal Investigator

C. A. Alexander

D. Chase

R. W. Coutant

J. W. Lennon

D. W. Pickett

M. Rausch

A. J. Roese

A. J. Walker

M. V. Weaver

TABLE OF CONTENTS

	Page
INTRODUCTION AND SUMMARY	1
OBJECTIVE AND SCOPE	2
Task 1. Well Coring	3
Task 2. "Free" Gas Analysis and Release Kinetics	3
Task 3. Chemical Characterization Data	17
Task 4. Physical Characterization	17
Task 5. Lithology of K-4 Shales	30

LIST OF TABLES

	Page
TABLE 1. WELL DATA FOR K-4	4
TABLE 2. FIELD SAMPLING DATA FOR WELL K-4	6
TABLE 3. INITIAL GAS RELEASE DATA FOR WELL K-4	8
TABLE 4. STATISTICAL ANALYSES OF OFF GAS DATA FOR WELL K-4	10
TABLE 5. DIFFUSION COEFFICIENTS AND GAS CONTENTS	16
TABLE 6. CHEMICAL CHARACTERIZATION DATA	18
TABLE 7. SUMMARY OF PHYSICAL CHARACTERIZATION	27
TABLE 8. STATISTICAL ANALYSES OF PHYSICAL CHARACTERIZATION FOR WELL K-4	36
TABLE 9. MERCURY INTRUSION POROSIMETRY DATA	37
TABLE 10. HELIUM PERMEABILITY OF K-4 SHALES	38
TABLE 11. ENERGY DISPERSIVE ANALYSES OF K-4 SHALES	39

LIST OF FIGURES

	Page
FIGURE 1. ON SURFACE TIME VERSUS SAMPLE DEPTH FOR WELL K-4	11
FIGURE 2. HYDROCARBON GAS VERSUS DEPTH FOR WELL K-4	12
FIGURE 3. EXPERIMENTAL AND CALCULATED HYDROCARBON GAS RELEASE RATES IN SAMPLE K-4-1069	13
FIGURE 4. HYDROCARBON EFFUSION FROM SHALE K-4-1280	15
FIGURE 5. CARBON CONTENT VERSUS DEPTH FOR WELL K-4	20
FIGURE 6. HYDROGEN CONTENT VERSUS DEPTH FOR WELL K-4	21

LIST OF FIGURES (Continued)

Page

FIGURE 7. H/C ATOMIC RATIO VERSUS DEPTH FOR WELL K-4 22

FIGURE 8. SULFUR CONTENT VERSUS DEPTH FOR WELL K-4 23

FIGURE 9. HYDROCARBON CONTENT VERSUS CARBON CONTENT FOR WELL K-4 . . 24

FIGURE 10. HYDROCARBON CONTENT VERSUS HYDROGEN CONTENT FOR WELL K-4 25

FIGURE 11. HYDROCARBON CONTENT VERSUS SULFUR CONTENT FOR WELL K-4 . . 26

FIGURE 12. HYDROCARBON CONTENT VERSUS BULK DENSITY FOR WELL K-4 . . . 29

FIGURE 13. CARBON CONTENT VERSUS BULK DENSITY FOR WELL K-4 31

FIGURE 14. HYDROGEN CONTENT VERSUS BULK DENSITY FOR WELL K-4 32

FIGURE 15. POROSITY VERSUS H/C ATOMIC RATIO FOR WELL K-4 33

FIGURE 16. SULFUR CONTENT VERSUS BULK DENSITY FOR WELL K-4 34

FIGURE 17. POROSITY VERSUS BULK DENSITY FOR WELL K-4 35

FIGURE 18. SEM MICROPHOTOGRAPH OF SAMPLE K-4-969 41

FIGURE 19. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1079 42

FIGURE 20. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1183 43

FIGURE 21. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1290 44

FIGURE 22. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1379 45

FIGURE 23. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1495 46

INDIVIDUAL WELL REPORT
FROM THE PROGRAM ON

CHARACTERIZATION AND ANALYSIS OF DEVONIAN SHALES AS RELATED TO RELEASE OF GASEOUS HYDROCARBONS

WELL K-4 JOHNSON COUNTY, KENTUCKY

by

R. S. Kalyoncu and M. J. Snyder

INTRODUCTION AND SUMMARY

Various characterization tasks were performed on 54 cored shale samples from Johnson County, Kentucky. Core samples were obtained from depths of 967 to 1510 feet. A total of 126 samples were canned for several DOE contractors, including Battelle Columbus. "Free" gas analyses indicate the presence of significant quantities of higher chain hydrocarbon gases in the K-4 shales. Hydrocarbon gas release rates and kinetic studies indicate that diffusion coefficients are inversely proportional to the square root of the molecular weight of diffusing species.

Although wide scatter is observed in the chemical and physical characterization data, good correlations exist between the hydrocarbon gas contents and various laboratory characterization values (physical and chemical). A number of one-to-one relationships are pointed out and discussed throughout the text.

Lithologically, inorganic portions of K-4 shales are composed predominantly of quartz and illite with small quantities of pyrite and various carbonate minerals.

OBJECTIVE AND SCOPE

The objective of this program is to determine the relationships between shale characteristic, hydrocarbon gas content, and well location to provide a sound basis for defining the productive capacity of the Eastern Devonian Shale deposits and for guiding research, development, and demonstration projects to enhance the recovery of natural gas from the shale deposits. The program includes a number of elemental tasks as a part of the Resource Inventory and Shale Characterization subprojects of DOE's Eastern Gas Shales Project and is designed to provide a wide variety of support data for that project.

A large number of core samples of gas bearing Eastern Devonian Shale will have been examined by the end of the program. After the characterization data for individual wells have been compiled, attempts will be made to establish the interrelationships between the shale characteristics, the hydrocarbon gas content, and well locations from which the samples were obtained, employing the Automatic Interaction Detection (AID) Analysis.

The following tasks comprise the total efforts in this research program:

Task	Descriptive Title
1	Core Sampling
2	Gas Content and Gas Release Kinetics
3	Chemical Characterization of Shale
4	Physical Characterization of Shale
5	Lithology of Shale

ANALYSIS AND DISCUSSION OF THE CHARACTERIZATION DATA

Detailed descriptions of the experimental procedures employed in the execution of the elemental tasks were reported in the Appendix of the Fifth Quarterly Technical Progress Report (ORO-5205-5) submitted to U.S./DOE in January of 1978.

Task 1. Well Coring

Shale core samples from the K-4 well (Johnson County, Kentucky) were obtained in December 1978. Fifty-four samples were collected for Battelle and 72 samples for other DOE contractors. It took a total of ten barrels to obtain all the samples. Coring was made at depths between 967 and 1510 feet.

Task 2. "Free" Gas Analysis and Release Kinetics

Qualitative and quantitative results on the hydrocarbon gases in the free space surrounding the shale sample in the sealed canisters are presented in Table 3. The K-4 well exhibits significant quantities of higher chain hydrocarbon gases (C_2 through C_5) though methane is still the major hydrocarbon gas. Total hydrocarbon gas content of the shales is also significant. Various statistical parameters of the hydrocarbon gas contents are given in Table 4. Total hydrocarbons make up about 38 percent of the gas mixture in the sealed canisters, which translates to an average hydrocarbon gas content of 0.55 cubic foot of gas per cubic foot of shale.

General hydrocarbon gas diffusion coefficients at 28 and 80 C were determined for sample K-4-1069. Total hydrocarbon gas contents agree well with the last points shown in Figure 3. The diffusion coefficient measured at temperatures of 28 and 80 C are 5.0×10^{-7} and 1.1×10^{-6} cm^2/sec, respectively. Concentration values extrapolated to zero times in Figure 3 are 0.7 v/v and 2.9 v/v, respectively. Analysis of the individual components of the hydrocarbon gas mixtures during diffusion studies showed that the residual gas in the 80 C specimen was primarily propane, with small amounts of butane and pentane. The 28 C specimen showed some methane, but was again primarily propane.

Some of the shortcomings of the total hydrocarbon measurement as an indicator of gas diffusion rates were eliminated by modifying the experimental system to allow the determination of the diffusion coefficients of individual hydrocarbon gas species. The system permitted the analysis of the effluent gas as a function time. Thus, the individual diffusion coefficients for each of the gas species effusing from the shale samples could be determined.

TABLE 1. WELL DATA FOR K- 4

LOCATION: JOHNSON COUNTY, KY

ALTITUDE: 963 FEET

COORDINATES: 0.00 (DEGREES.MINUTES) LATITUDE
0.00 (DEGREES.MINUTES) LONGITUDE

CORING BEGAN AT 967 FEET AND STOPPED AT 1510 FEET. IT TOOK 10 BARRELS TO COMPLETE.

SAMPLES WERE RETURNED TO BATTELLE ON 12/18/78.

THERE WERE 54 SAMPLES COLLECTED FOR BATTELLE AND 72 SAMPLES COLLECTED FOR OTHERS.

RUN INFORMATION FROM WELL K- 4

RUN NO. 1 CORING BEGAN AT 967 FEET AND CORING STOPPED AT 1026 FEET. THE AVERAGE CORING RATE IS 8.46 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 2.05 HOURS

RUN NO. 2 CORING BEGAN AT 1026 FEET AND CORING STOPPED AT 1084 FEET. THE AVERAGE CORING RATE IS 8.07 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN47.72 HOURS

RUN NO. 3 CORING BEGAN AT 1084 FEET AND CORING STOPPED AT 1141 FEET. THE AVERAGE CORING RATE IS 8.74 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 5.15 HOURS

RUN NO. 4 CORING BEGAN AT 1141 FEET AND CORING STOPPED AT 1199 FEET. THE AVERAGE CORING RATE IS 10.52 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 1.98 HOURS

RUN NO. 5 CORING BEGAN AT 1199 FEET AND CORING STOPPED AT 1258 FEET. THE AVERAGE CORING RATE IS 9.31 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 1.57 HOURS

RUN NO. 6 CORING BEGAN AT 1258 FEET AND CORING STOPPED AT 1316 FEET. THE AVERAGE CORING RATE IS 9.66 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 3.70 HOURS

TABLE 1. (Continued)

RUN INFORMATION FROM WELL CONTINUED K- 4

RUN NO. 7	CORING BEGAN AT 1316 FEET AND CORING STOPPED AT 1374 FEET. THE AVERAGE CORING RATE IS 9.81 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 1.65 HOURS
RUN NO. 8	CORING BEGAN AT 1374 FEET AND CORING STOPPED AT 1432 FEET. THE AVERAGE CORING RATE IS 9.24 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 1.32 HOURS
RUN NO. 9	CORING BEGAN AT 1432 FEET AND CORING STOPPED AT 1492 FEET. THE AVERAGE CORING RATE IS 8.53 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 1.88 HOURS
RUN NO. 10	CORING BEGAN AT 1492 FEET AND CORING STOPPED AT 1510 FEET. THE AVERAGE CORING RATE IS 7.17 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 2.35 HOURS

TABLE 2. FIELD SAMPLING DATA FOR WELL K 4

SAMPLE ID.	COLOR	ON SURFACE TIME	BARREL NO	SEQ NO.
K 4- 969.	5Y4/1	1.00	1	1
K 4- 979.	N4	1.25	1	2
K 4- 989.	N3	1.48	1	3
K 4- 999.	N2	1.58	1	4
K 4-1009.	5YR2/1	1.73	1	5
K 4-1019.	5YR2/1	1.85	1	6
K 4-1039.	5YR2/1	1.10	2	7
K 4-1049.	5YR2/1	1.27	2	8
K 4-1059.	5YR2/1	1.38	2	9
K 4-1069.	5YR2/1	1.50	2	10
K 4-1079.	5Y2/1	1.60	2	11
K 4-1086.	5YR2/1	.92	3	12
K 4-1096.	N4	1.10	3	13
K 4-1106.	5YR2/1	1.25	3	14
K 4-1126.	N3	1.40	3	15
K 4-1136.	N3	1.53	3	16
K 4-1143.	5YR2/1	.50	4	17
K 4-1153.	5YR2/1	.63	4	18
K 4-1163.	5YR2/1	.82	4	19
K 4-1173.	5YR2/1	.90	4	20
K 4-1183.	YR2/1	.97	4	21
K 4-1193.	5YR2/1	1.15	4	22
K 4-1201.	5YR2/1	.58	5	23
K 4-1211.	5YR2/1	.70	5	24
K 4-1221.	5YR2/1	.77	5	25
K 4-1231.	5Y2/1	.85	5	26
K 4-1241.	5YR2/1	.92	5	27
K 4-1251.	5YR2/1	.95	5	28
K 4-1260.	5YR2/1	.80	6	29
K 4-1270.	5YR2/1	.92	6	30
K 4-1280.	5YR2/1	1.02	6	31
K 4-1290.	5YR2/1	1.12	6	32
K 4-1300.	5YR2/1	1.23	6	33
K 4-1310.	5YR2/1	1.38	6	34
K 4-1319.	5GY4/1	.47	7	35
K 4-1329.	5YR2/1	.57	7	36
K 4-1339.	5YR2/1	.65	7	37
K 4-1349.	5YR2/1	.77	7	38
K 4-1359.	5YR2/1	.90	7	39
K 4-1369.	5YR2/1	.98	7	40
K 4-1379.	5YR2/1	.80	8	41
K 4-1389.	5YR2/1	.90	8	42
K 4-1399.	5YR2/1	1.02	8	43
K 4-1409.	5YR2/1	1.12	8	44

TABLE 2. (Continued)

FIELD SAMPLING DATA FOR WELL K 4

SAMPLE ID.	COLOR	ON SURFACE TIME	BARREL NO	SEQ NO.
K 4-1419.	5YR2/1	1.20	8	45
K 4-1429.	N4	1.37	8	46
K 4-1436.	YR2GY4	.55	9	47
K 4-1446.	YR2GY4	.68	9	48
K 4-1456.	5GY4/1	.82	9	49
K 4-1466.	5GY4/1	.92	9	50
K 4-1476.	YR25G4	.98	9	51
K 4-1486.	GY2YR2	1.08	9	52
K 4-1495.	N4	.22	10	53
K 4-1505.	5GY4/1	.35	10	54

MEAN EXPOSURE TIME 1.01

STANDARD DEVIATION OF EXPOSURE TIME .35

TABLE 3. INITIAL GAS RELEASE DATA: WELL K 4

SAMPLE ID	DEPTH FT	PORE VOLUME CC	CORE VOLUME CC	POROSITY PCT.	GAS COMPOSITION, VOLUME PERCENT METHANE	ETHANE	PROPANE	BUTANE	PENTANE	TOTAL HYDROC.	NITROGEN	OXYGEN	CARBON DIOXIDE	GAS RELEASED/ UNIT VOLUME OF SHALE	SEQ NO.
K 4-969.	1300.	656.	736.	11.27	21.72	10.64	13.83	6.45	1.95	54.59	37.48	7.59	.32	.89	1
K 4-970.	750.	515.	535.	6.80	2.05	.37	.22	.02	0.00	2.66	80.76	14.69	1.90	.04	2
K 4-989.	750.	772.	673.	0.00	5.63	1.32	.53	.07	0.00	7.55	80.38	11.97	.09	.08	3
K 4-993.	750.	1013.	431.	12.14	4.31	.53	.22	.04	0.00	5.10	78.56	16.22	.12	.12	4
K 4-1002.	700.	734.	706.	2.85	12.46	1.11	.36	.08	0.00	14.01	71.87	12.79	1.33	.16	5
K 4-1010.	1300.	771.	669.	2.91	43.94	2.91	.84	.16	.02	47.87	46.57	5.01	.57	.95	6
K 4-1011.	1300.	833.	621.	1.71	33.00	2.44	.81	.17	.02	41.44	50.26	7.93	.37	.87	7
K 4-1013.	1500.	564.	886.	1.15	56.40	3.84	1.51	.34	.07	62.16	35.25	2.11	.48	.78	8
K 4-1020.	1300.	763.	697.	0.00	40.84	2.77	1.03	.21	.04	44.89	48.00	6.64	.46	.85	9
K 4-1070.	1050.	653.	797.	1.31	47.58	3.36	1.27	.26	.05	52.52	43.01	3.64	.78	.59	11
K 4-1095.	1050.	743.	697.	5.00	47.38	3.71	1.52	.30	.05	52.96	43.29	3.00	.80	1.36	12
K 4-1096.	750.	519.	931.	.35	10.75	.98	.55	.11	0.00	12.39	81.43	5.70	.50	.07	13
K 4-1104.	950.	615.	832.	4.13	23.43	1.65	.72	.15	.02	25.97	64.67	8.28	1.08	.24	14
K 4-1120.	850.	617.	833.	0.00	15.37	1.23	.59	.18	.05	17.42	73.56	7.01	2.00	.14	15
K 4-1130.	700.	600.	850.	3.19	4.73	.31	.15	.04	0.00	5.23	79.88	14.72	.20	.04	16
K 4-1153.	1300.	936.	624.	12.40	37.68	2.64	1.92	.26	.06	42.56	49.92	6.72	.82	.89	17
K 4-1155.	1500.	779.	671.	0.00	47.34	3.53	1.50	.33	.07	52.77	42.94	3.23	1.08	1.13	18
K 4-1163.	1500.	717.	733.	0.00	51.53	3.65	1.51	.34	.07	57.10	38.39	3.56	.95	1.10	19
K 4-1174.	1100.	493.	957.	0.00	64.83	4.40	1.76	.40	.09	71.49	26.92	.89	.73	.53	20
K 4-1193.	1500.	757.	743.	6.41	53.90	3.78	1.54	.35	.07	59.64	36.77	2.86	.73	1.12	21
K 4-1193.	1300.	763.	651.	0.00	41.81	3.11	1.37	.38	.09	46.76	47.69	4.62	.92	.98	22
K 4-1201.	1350.	740.	710.	0.00	45.53	3.44	1.48	.37	.09	50.91	44.46	3.84	.80	.94	23
K 4-1211.	1350.	727.	723.	7.33	44.18	3.44	1.58	.40	.09	49.69	45.18	4.14	.99	.89	24
K 4-1231.	1500.	499.	951.	1.28	57.31	4.35	2.06	.55	.12	64.39	33.69	1.23	.70	.67	25
K 4-1241.	1100.	746.	704.	9.55	30.49	2.69	1.29	.37	.09	34.93	57.16	6.76	1.15	.54	26
K 4-1241.	1150.	733.	712.	2.86	33.10	2.27	1.08	.27	.07	36.79	54.64	7.81	.76	.55	27
K 4-1251.	1450.	639.	812.	1.24	47.97	3.44	1.58	.38	.09	53.46	41.79	4.03	.74	.80	28
K 4-1260.	1500.	518.	932.	4.16	55.41	4.19	1.93	.49	.12	62.13	35.06	2.35	.46	.68	29
K 4-1270.	900.	574.	876.	6.13	66.12	6.46	3.03	.79	.18	76.58	22.13	.29	1.02	.60	30
K 4-1290.	1000.	615.	835.	1.19	25.24	2.49	1.53	.46	.14	29.85	62.34	4.32	3.50	.29	32
K 4-1309.	700.	520.	930.	3.65	16.07	1.93	1.13	.42	.13	19.68	70.53	5.81	3.93	.13	33
K 4-1310.	950.	773.	677.	0.00	16.02	1.60	.66	.23	.07	18.58	69.85	8.00	3.58	.25	34
K 4-1313.	700.	723.	711.	13.31	15.71	2.40	1.67	.65	.28	20.71	69.69	7.56	2.04	.25	35
K 4-1329.	1500.	715.	735.	0.00	53.21	4.80	1.74	.43	.10	60.28	36.42	1.05	2.26	1.16	36
K 4-1333.	1050.	913.	1031.	10.51	29.80	2.40	1.01	.28	.09	33.58	57.57	8.02	.83	.19	37
K 4-1350.	1150.	592.	763.	.53	33.51	3.29	1.19	.34	.10	38.42	53.30	5.67	2.61	.52	38
K 4-1353.	1350.	597.	853.	0.00	42.69	3.94	1.49	.41	.10	48.63	45.73	4.41	1.23	.60	39
K 4-1359.	1500.	631.	769.	0.00	44.13	4.06	1.51	.41	.10	50.21	44.14	4.50	1.15	.82	40
K 4-1370.	1500.	797.	653.	0.00	23.42	2.71	.97	.25	.06	27.41	61.84	8.65	2.10	.44	41
K 4-1389.	1150.	523.	827.	0.00	36.18	4.08	1.44	.36	.08	42.14	51.30	4.95	1.63	.48	42
K 4-1399.	1050.	619.	881.	0.00	32.51	3.81	1.49	.37	.08	38.26	55.64	3.06	3.05	.39	43
K 4-1409.	750.	550.	790.	2.32	30.09	3.76	1.35	.35	.08	35.63	54.30	8.62	1.43	.29	44
K 4-1419.	1200.	671.	779.	0.00	41.91	3.91	1.17	.25	.03	46.37	47.77	4.79	1.07	.63	45
K 4-1429.	850.	475.	975.	.73	14.86	1.45	.67	.19	.05	17.22	72.45	7.92	2.37	.09	46
K 4-1436.	1050.	579.	871.	13.19	29.91	3.55	1.93	.54	.15	36.18	58.71	.78	4.32	.33	47

TABLE 3. (Continued)

INITIAL GAS RELEASE DATA: WELL # 4

SAMPLE ID	[illegible] FEET	FLUID VOLUME CC	CO2F VOLUME CC	POROSITY PCT.	GAS COMPOSITION, VOLUME PERCENT METHANE	ETHANE	PROPANE	BUTANE	PENTANE	TOTAL HYDROC.	NITROGEN	OXYGEN	CARBON DIOXIDE	GAS RELEASED/ UNIT VOLUME OF SHALE	SEQ NO.
# 4-1645.	1[illegible].	567.	483.	5.69	47.13	5.18	2.10	.49	.11	55.01	41.96	.54	2.51	.67	48
# 4-1655.	1306.	6[illegible]4.	326.	16.06	42.60	4.65	1.75	.38	.08	49.46	46.73	.60	3.21	.64	49
# 4-1656.	7[illegible]5.	2[illegible]2.	397.	7.02	4.67	.45	.10	.03	0.00	5.25	78.87	15.78	.12	.04	50
# 4-1[illegible].	3[illegible]5.	761.	6[illegible].	5.06	40.37	3.95	1.42	.32	.07	46.13	48.87	1.64	3.37	.84	51
# 4-1[illegible].	1[illegible].	9[illegible].	641.	6.56	39.46	4.51	2.69	.87	.28	48.91	57.06	.76	3.28	.68	52
# 4-1[illegible].	7[illegible].	5[illegible].	898.	8.54	3.38	.24	.17	.04	0.00	4.43	77.98	17.46	.16	.03	53
# 4-1[illegible].	7[illegible].	7[illegible].	611.	8.16	1.69	.19	0.00	.02	0.00	1.81	78.55	19.49	.12	.02	54

TABLE 4. STATISTICAL ANALYSES OF OFF GAS DATA

WELL # 4

	MEAN	STANDARD DEVIATION	VARIANCE	COEFFICIENT OF DEVIATION	95 PCT. CONFIDENCE INTERVAL LOWER LIMIT	UPPER LIMIT	NO. OF SAMPLES
[illegible]	32.827	17.61	310.12	.54	27.922	37.730	52
[illegible]	3.040	1.79	3.22	.59	2.541	3.540	52
[illegible]	1.480	1.86	3.46	1.26	.962	1.998	52
[illegible]	.430	.87	.76	2.03	.187	.672	52
[illegible]	.111	.27	.07	2.41	.036	.185	52
[illegible]	17.887	19.64	385.59	.52	32.419	43.354	52
[illegible]	54.487	15.72	247.15	.29	50.109	58.864	52
[illegible]	5.231	4.70	22.13	.75	4.021	7.541	52
[illegible]	1.399	1.13	1.27	.80	1.085	1.712	52
[illegible]	.546	.36	.13	.66	.446	.647	52

[illegible]

WELL K-4

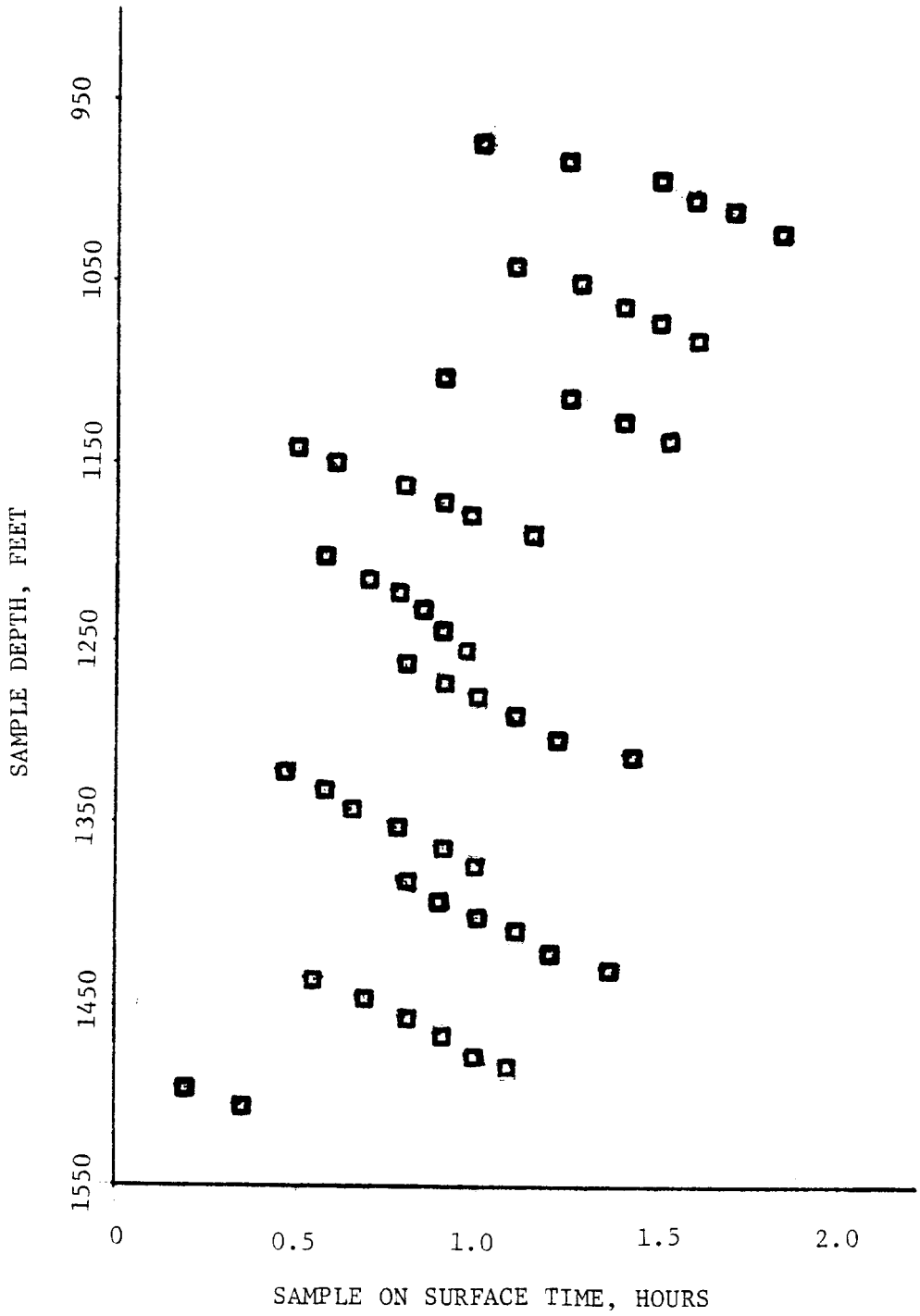


FIGURE 1. ON SURFACE TIME VERSUS SAMPLE DEPTH FOR WELL K-4

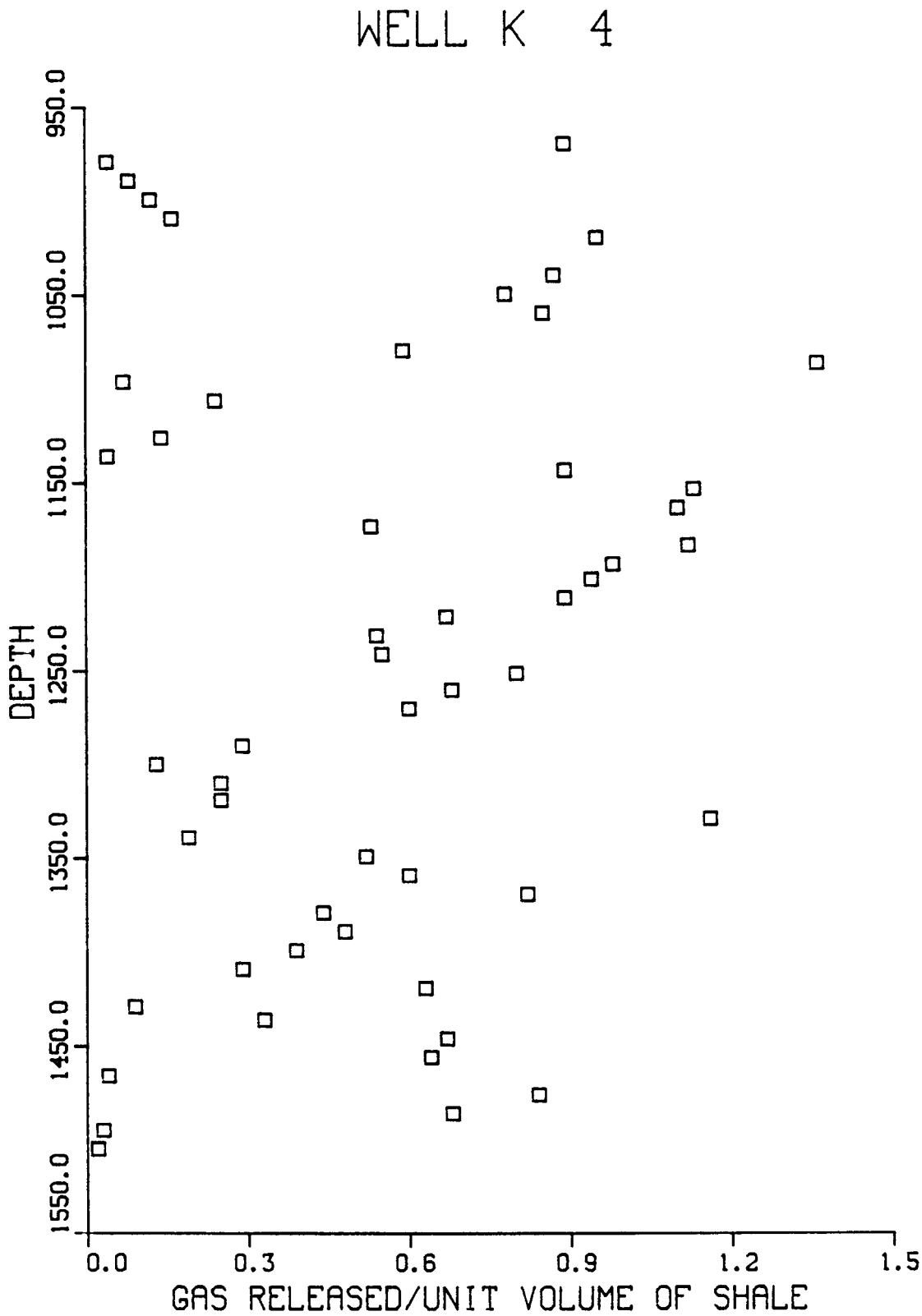


FIGURE 2. HYDROCARBON GAS VERSUS DEPTH FOR WELL K-4

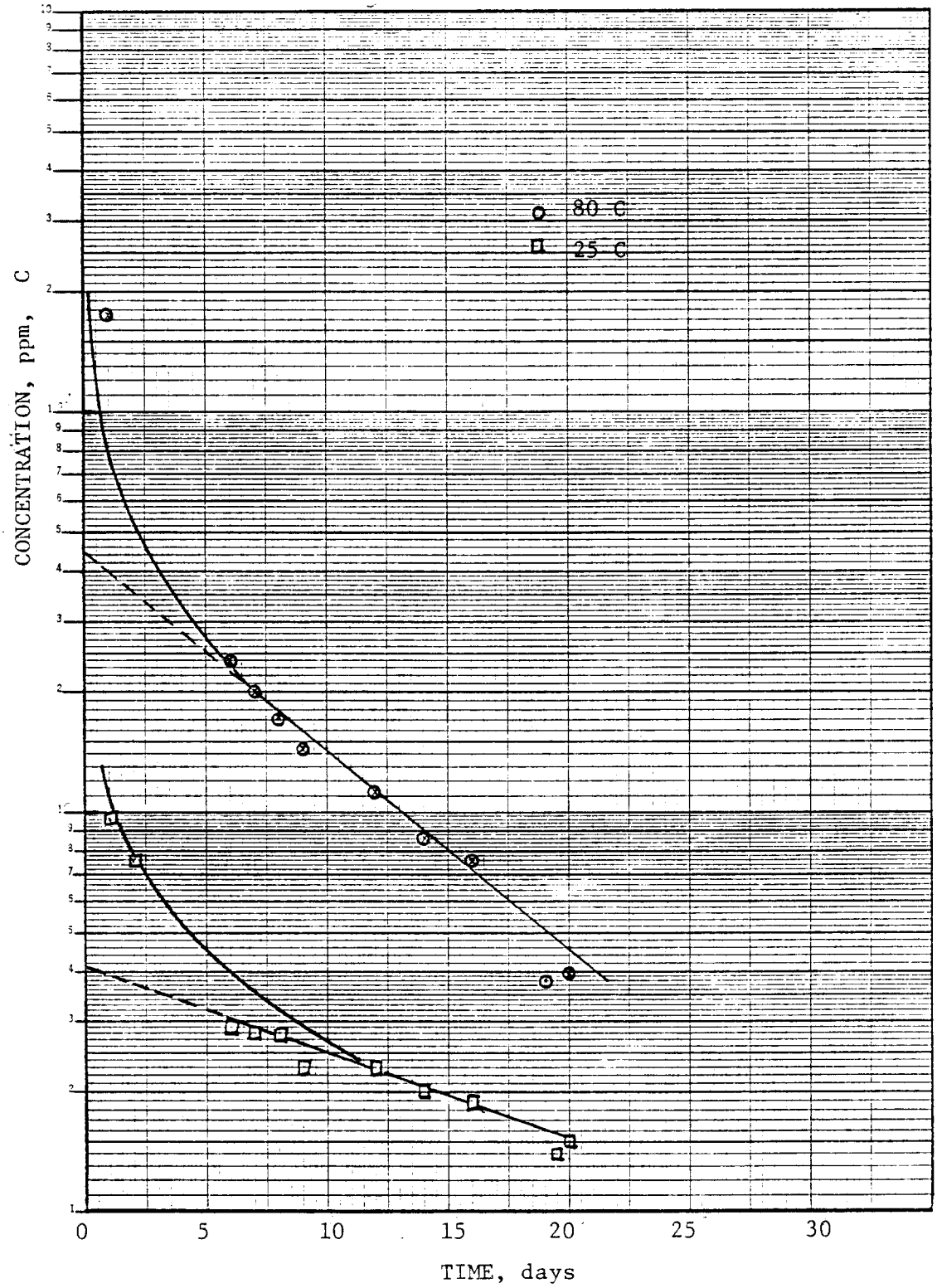


FIGURE 3. EXPERIMENTAL AND CALCULATED HYDROCARBON GAS RELEASE RATES IN SAMPLE K-4-1069

In addition, attempts were made to shorten the time requirements for the diffusion experiments by using smaller experimental shale samples. This modification worked well with shales having high gas contents and low diffusion coefficients. On the other hand, full size core samples still need to be used for shale samples having either high diffusion coefficients or low gas contents.

Figure 4 illustrates the type of results currently obtained with the modified method. In the figure the numbers refer to the number of carbon atoms in the species detected (e.g., 1 stands for methane). For purposes of clarity in presenting the data some data points have been omitted in Figure 4. Table 5 summarizes the diffusion coefficients and total gas contents derived from these data.

Although there is some scatter in these data, the diffusion coefficients appear to be, for the most part, inversely proportional to the square root of molecular weight for the various species. This suggests a Knudsen or molecular diffusion process for flow of the hydrocarbons through the shale matrix. With sample K-4-1280, the apparent activation energy for the process is 3.1 ± 0.4 kcal/mole.

It should be noted that the apparent gas contents for the K-4-1280 samples are different at the two temperatures. Not only are the individual component concentrations lower for the 25 C sample, but the relative ratios of the various hydrocarbons are different. This suggests that the two samples should not be considered as representative of the same material, and the apparent temperature dependence of the diffusion coefficients is therefore suspect.

It should also be noted that the K-4 shales exhibit relatively high contents of the higher chain hydrocarbons (e.g., C_2, C_3, C_4) in comparison to other shales examined thus far. Indeed, the total ethane, propane, and butane contents exceed the methane content in many K-4 samples. Thus, the commercial significance of this well is potentially greater than that of other wells showing comparable methane contents.

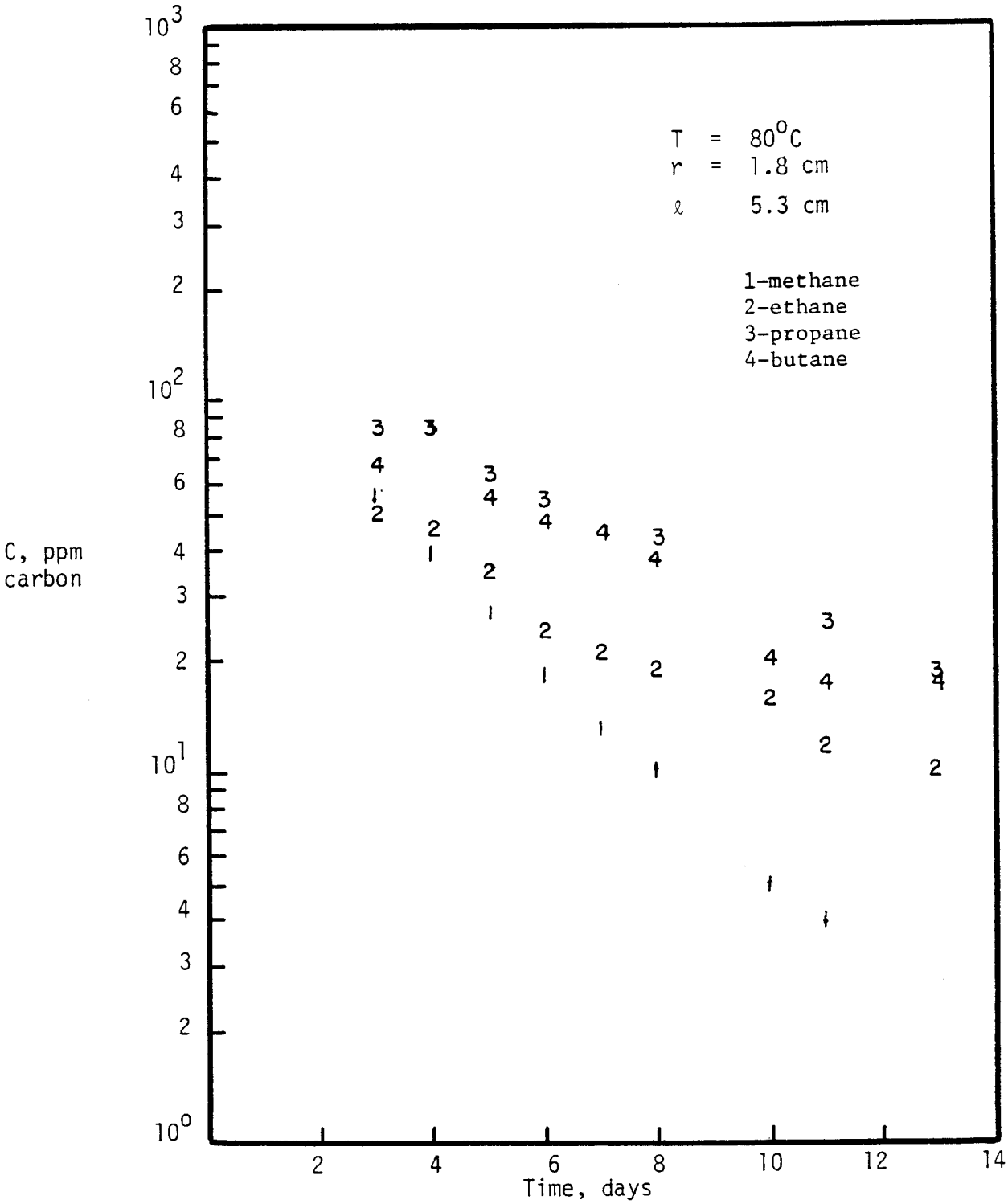


Figure 4. Hydrocarbon Effusion from Shale K-4-1280

TABLE 5. DIFFUSION COEFFICIENTS AND GAS CONTENTS

Shale Sample; T C	Hydrocarbon	D, cm^2/sec	P.E.[a]	V_{HC}/V_{Shale}[b]	P.E.[a]
K-4-1280; 80 C	Methane	2.0×10^{-6}	4	0.39	12
	Ethane	1.2×10^{-6}	4	0.23	7
	Propane	1.0×10^{-6}	4	0.31	6
	Butanes	9.9×10^{-7}	6	0.25	8
K-4-1280; 25 C	Methane	7.9×10^{-7}	9	0.28	11
	Ethane	5.2×10^{-7}	24	0.12	15
	Propane	5.6×10^{-7}	12	0.11	9
	Butanes	(1.4×10^{-6})	19	0.04	38
K-4-1069; 80 C	Total Hydrocarbons	1.1×10^{-6}	-	-	-
K-4-1069 25 C	Total Hydrocarbons	6.0×10^{-7}	-	-	-

(a) Percentage probable error based on least squares fit of data
(b) Volume of gaseous hydrocarbon per volume of shale

Task 3. Chemical Characterization Data

Total carbon, hydrogen, nitrogen (C-H-N), and sulfur values are depicted in Table 6. Carbon values vary between 0.3 and 11.1 percent with an average value of 3.6 percent, whereas hydrogen contents range from 0.1 to 1.4 percent averaging a value of 0.56 percent for 54 samples. A large scatter is also observed in the sulfur contents, which vary between 0.1 and 4.3 percent showing an average value of 2.0 percent for the well. Several bands can be observed in the carbon versus depth relationship as illustrated in Figure 5. Increasing carbon contents are observed from 950 to 1075 feet depth, followed by a decrease from 1075 to 1300 feet. Then, again an increase in carbon contents from 1300 to 1425 feet is observed. Similar bands are also noticeable in Figure 6 showing hydrogen versus depth. Figure 7 is H/C atomic ratio versus depth. Sulfur contents versus depth are plotted in Figure 8. A decrease in sulfur contents is apparent between 950 and 1150 feet, and a decrease is observed between 1050 and 1350 feet. And finally, a decrease between 1350 and 1475 feet is seen from Figure 8. Although there is a wide scatter in the data, a general increase in the hydrocarbon contents is observed with increasing carbon (Figure 9), hydrogen (Figure 10), and sulfur contents (Figure 11).

Task 4. Physical Characterization

Table 7 summarizes the density, porosity, and surface area results for the K-4 well. Porosity values in this table have been calculated from the density data. Mean values for bulk and true densities are 2.57 and 2.66, respectively. These density values result in a mean value of 4.1 percent for the porosity. Mean value of the surface area is 2.2 cm^2/g with 1.95 and 2.45 having lower and upper limits respectively. Statistical parameters on physical characterization data are given in Table 8.

As usual, the physical characterization data covers a wide range of values. But, even with this large scatter a good correlation between the bulk density and hydrocarbon gas contents is seen in Figure 12. Increasing hydrocarbon gas contents is observed with decreasing bulk densities. Bulk

TABLE 6. CHEMICAL CHARACTERIZATION DATA.

SAMPLE ID	TOTAL CARBON PERCENT	TOTAL HYDROGEN PERCENT	TOTAL NITROGEN PERCENT	TOTAL SULFUR PERCENT	CARD CODE	SEQ NO.
K 4- 969.	1.4	.1	.1	.1	5	1
K 4- 979.	.3	.2	.1	3.3	5	2
K 4- 989.	1.0	.6	.1	.1	5	3
K 4- 999.	.5	.6	.1	.2	5	4
K 4-1009.	3.6	.6	.1	1.7	5	5
K 4-1019.	8.2	1.1	.2	2.3	5	6
K 4-1039.	4.9	.8	.1	2.4	5	7
K 4-1049.	3.8	.7	.1	1.7	5	8
K 4-1059.	7.4	1.0	.2	1.1	5	9
K 4-1079.	6.6	.8	.2	1.6	5	11
K 4-1096.	4.8	.7	.1	1.5	5	12
K 4-1096.	.3	.4	.1	1.7	5	13
K 4-1106.	2.4	.6	.1	2.0	5	14
K 4-1126.	3.4	.7	.1	1.4	5	15
K 4-1136.	.3	.5	.1	.2	5	16
K 4-1143.	5.2	.8	.2	2.3	5	17
K 4-1153.	6.3	.9	.3	3.0	5	18
K 4-1163.	4.7	.7	.2	2.9	5	19
K 4-1173.	3.6	.7	.1	3.3	5	20
K 4-1193.	4.5	.8	.2	2.4	5	21
K 4-1193.	6.1	.9	.2	2.1	5	22
K 4-1201.	4.8	.8	.2	2.3	5	23
K 4-1211.	3.7	.7	.1	3.3	5	24
K 4-1221.	5.2	.8	.1	2.7	5	25
K 4-1231.	1.8	.5	.1	2.4	5	26
K 4-1241.	3.3	.7	.1	2.8	5	27
K 4-1251.	3.4	.7	.1	2.4	5	28
K 4-1260.	3.1	.6	.1	2.0	5	29
K 4-1270.	2.9	.7	.1	2.8	5	30
K 4-1290.	3.0	.6	.1	3.3	5	32
K 4-1300.	3.2	.6	.1	2.7	5	33
K 4-1310.	4.3	.8	.1	3.5	5	34
K 4-1319.	.6	.5	.1	1.8	5	35
K 4-1329.	6.4	.9	.1	4.5	5	36
K 4-1339.	.7	.4	.1	1.7	5	37
K 4-1349.	5.3	.8	.1	3.1	5	38
K 4-1359.	6.4	.9	.1	2.4	5	39
K 4-1369.	6.9	1.0	.1	2.4	5	40
K 4-1379.	8.2	1.1	.1	3.2	5	41
K 4-1389.	7.2	1.0	.1	2.9	5	42
K 4-1399.	6.0	.9	.1	2.5	5	43
K 4-1409.	6.1	.9	.1	2.0	5	44
K 4-1419.	11.1	1.4	.3	3.1	5	45
K 4-1429.	.9	.4	.1	.6	5	46
K 4-1436.	.7	.5	.1	1.7	5	47

TABLE 6. (Continued)
CHEMICAL CHARACTERIZATION DATA.

SAMPLE ID	TOTAL CARBON PERCENT	TOTAL HYDROGEN PERCENT	TOTAL NITROGEN PERCENT	TOTAL SULFUR PERCENT	CARD CODE	SEQ NO.
* 4-1446.	3.1	.7	.1	2.3	5	48
* 4-1456.	.9	.4	.1	3.9	5	49
* 4-1466.	.5	.5	.1	.3	5	50
* 4-1476.	.3	.4	.1	1.6	5	51
* 4-1486.	3.1	.7	.1	4.3	5	52
* 4-1495.	1.1	.4	.1	.1	5	53
* 4-1505.	.8	.5	.1	.1	5	54

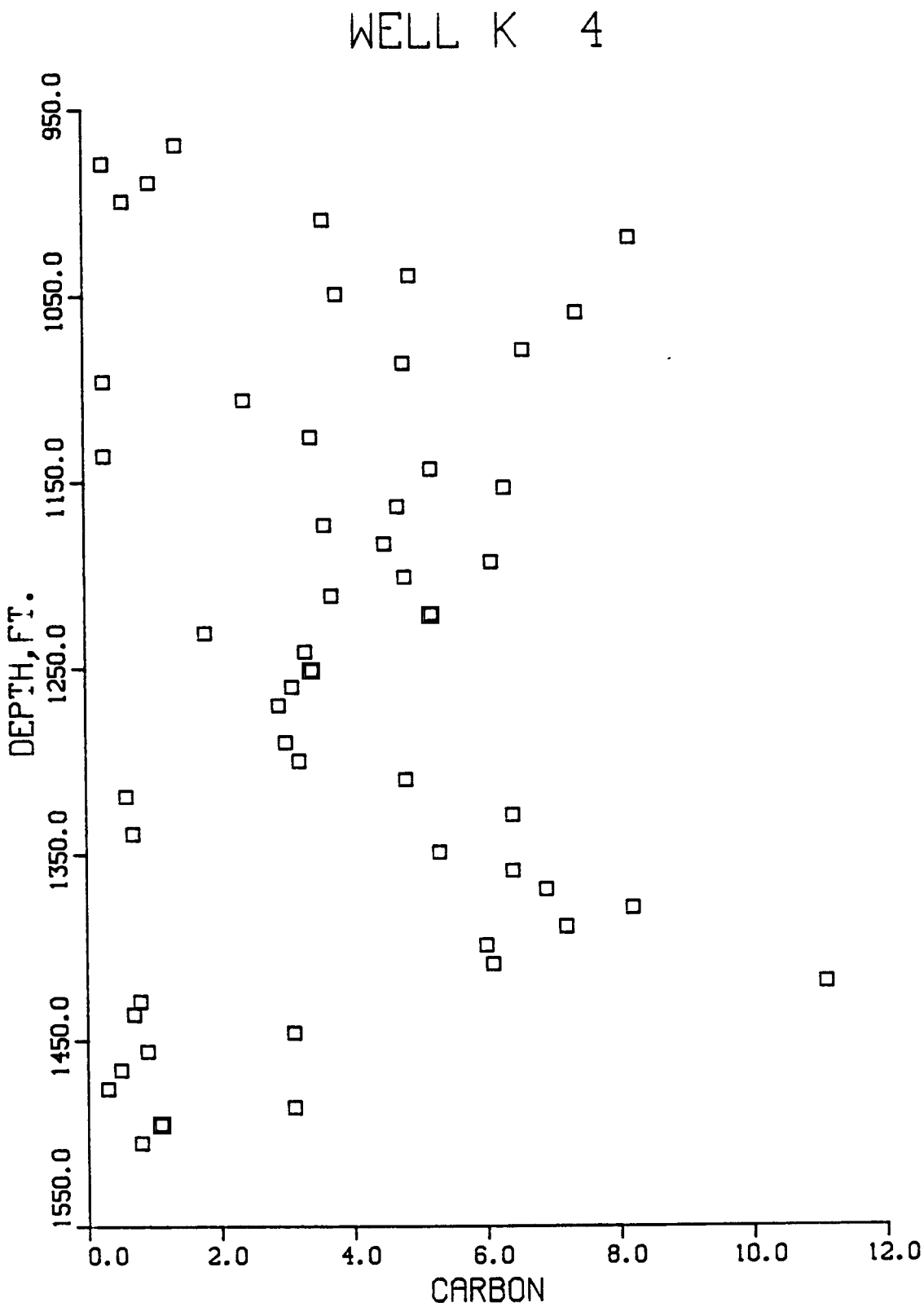


FIGURE 5. CARBON CONTENT VERSUS DEPTH FOR WELL K-4

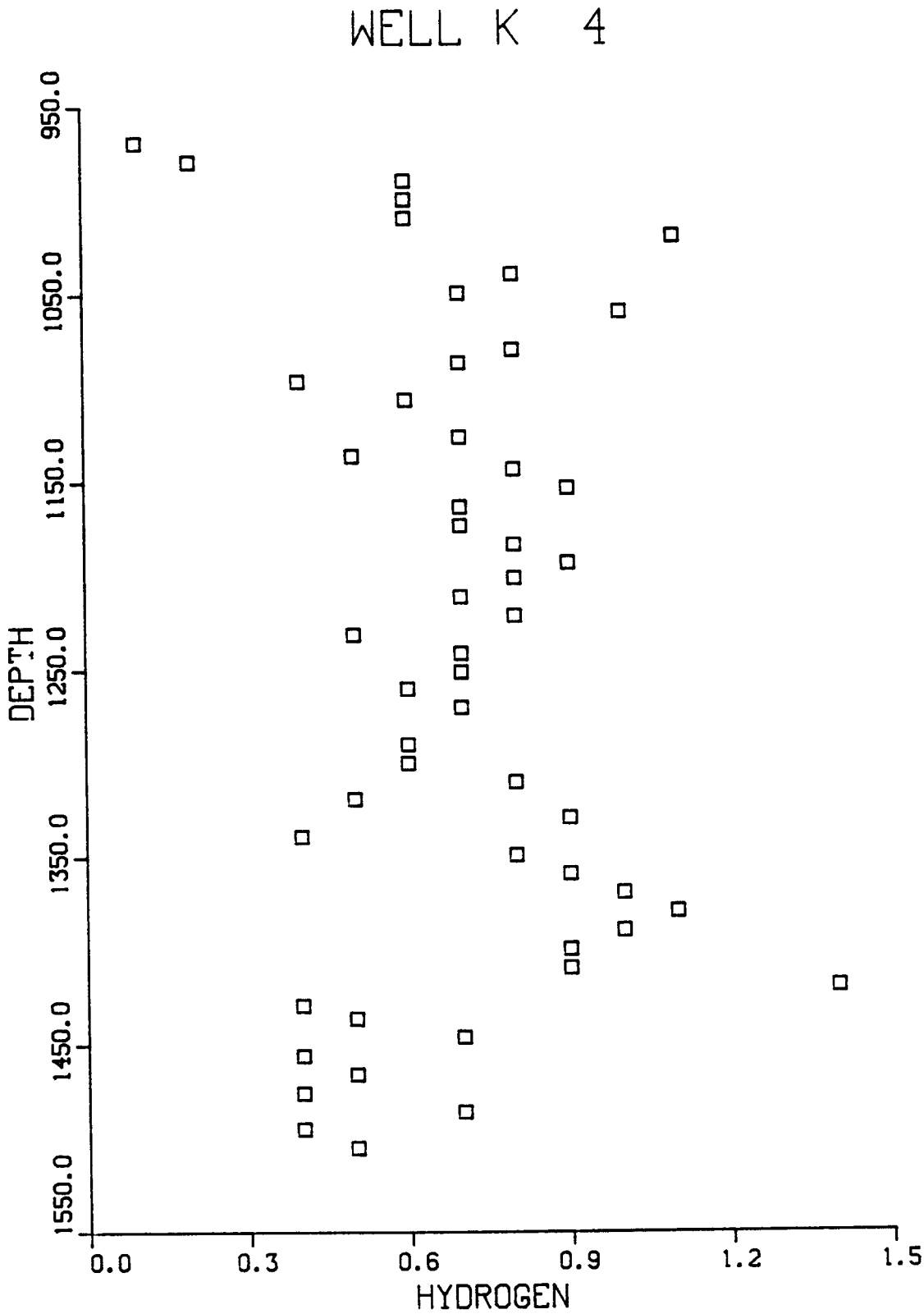


FIGURE 6. HYDROGEN CONTENT VERSUS DEPTH FOR WELL K-4

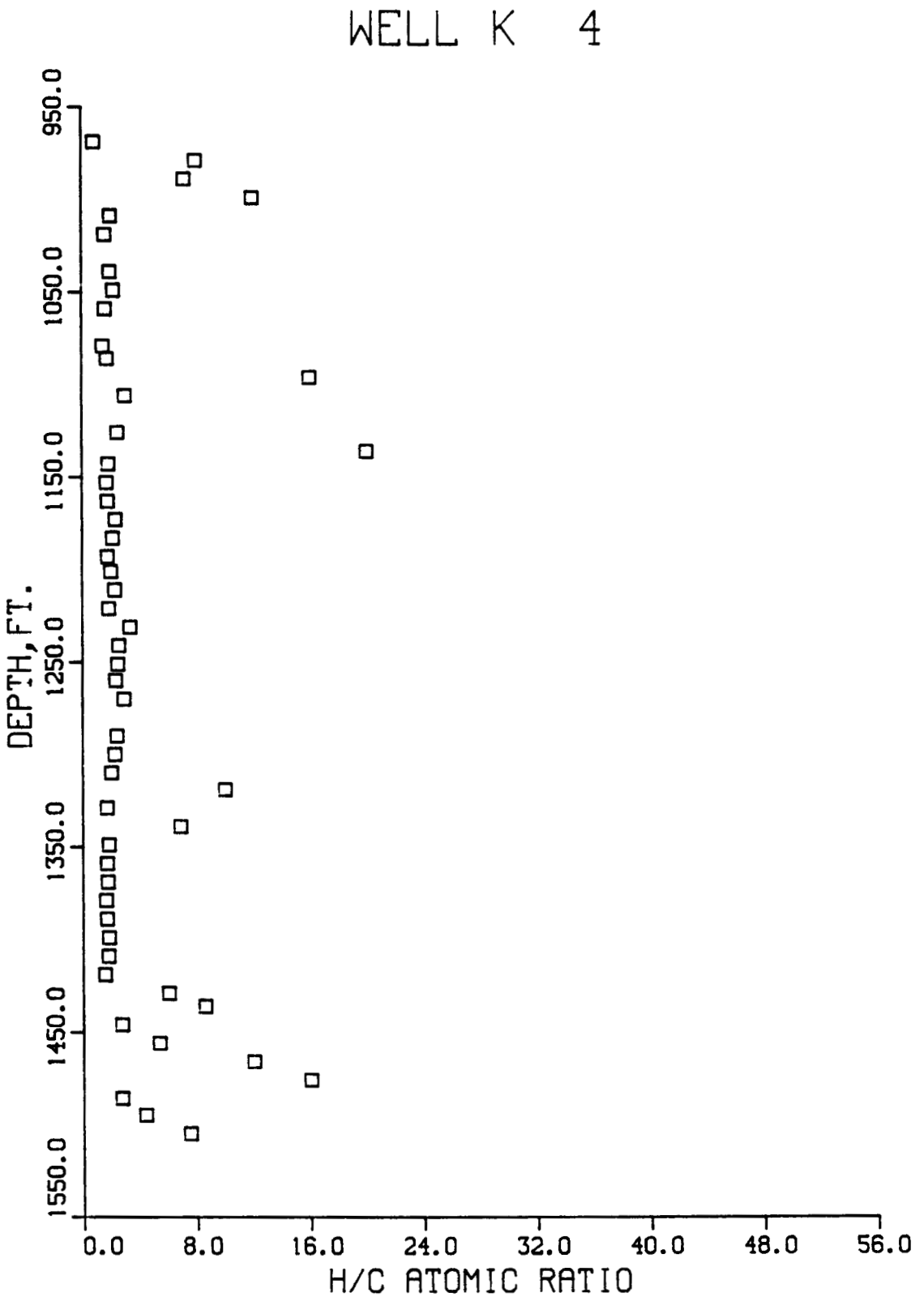


FIGURE 7. H/C ATOMIC RATIO VERSUS DEPTH FOR WELL K-4

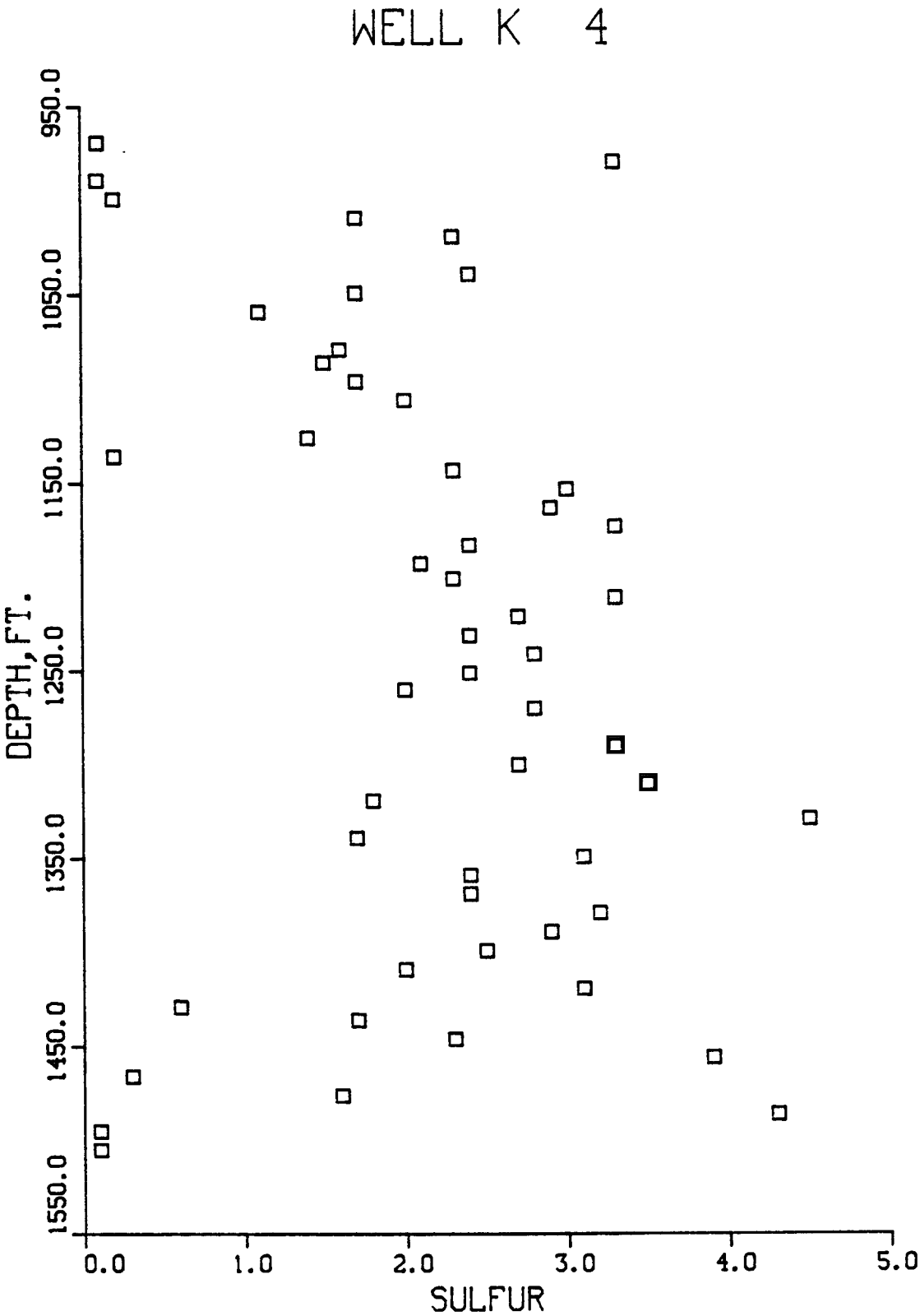


FIGURE 8. SULFUR CONTENT VERSUS DEPTH FOR WELL K-4

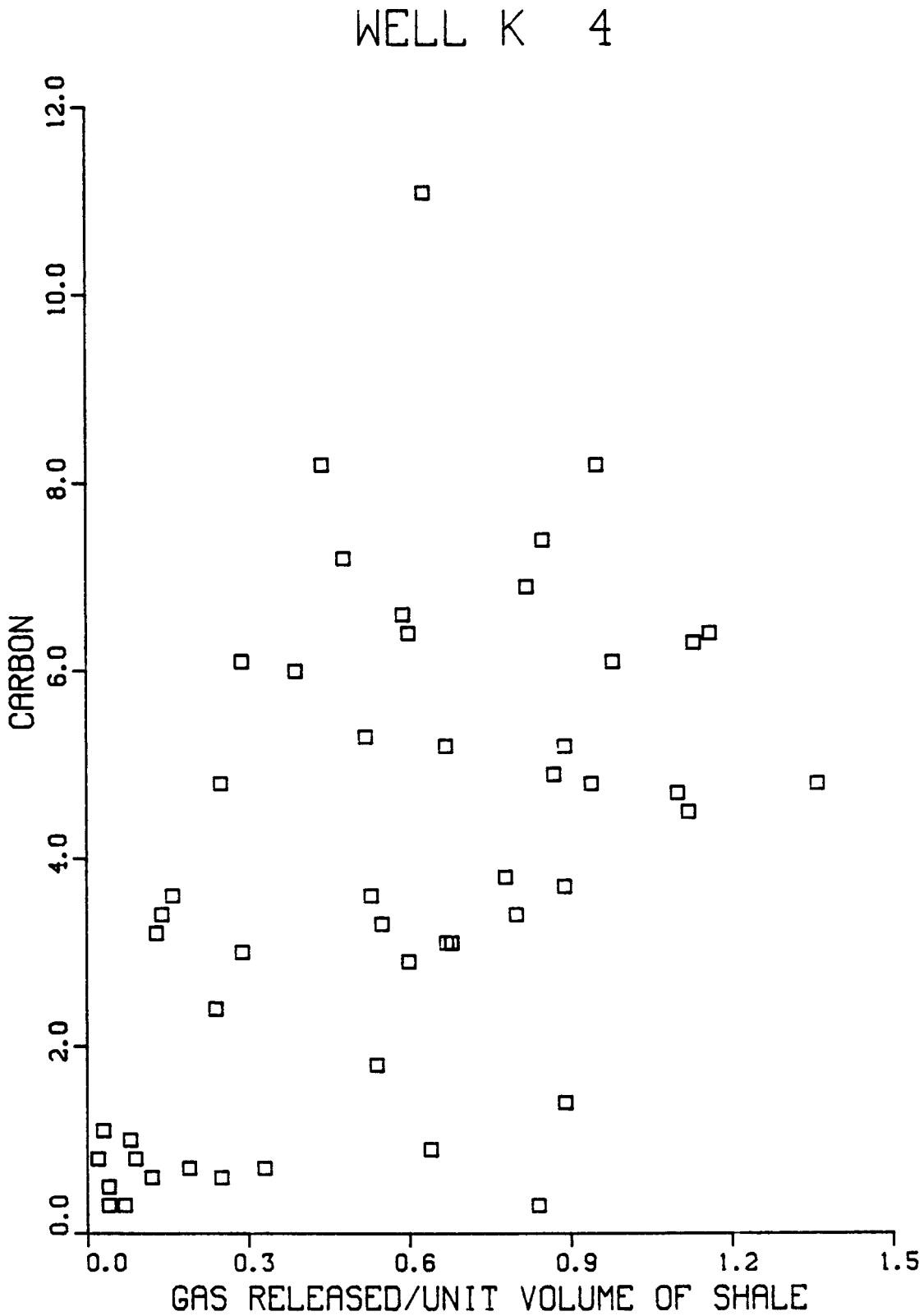


FIGURE 9. HYDROCARBON CONTENT VERSUS CARBON CONTENT FOR WELL K-4

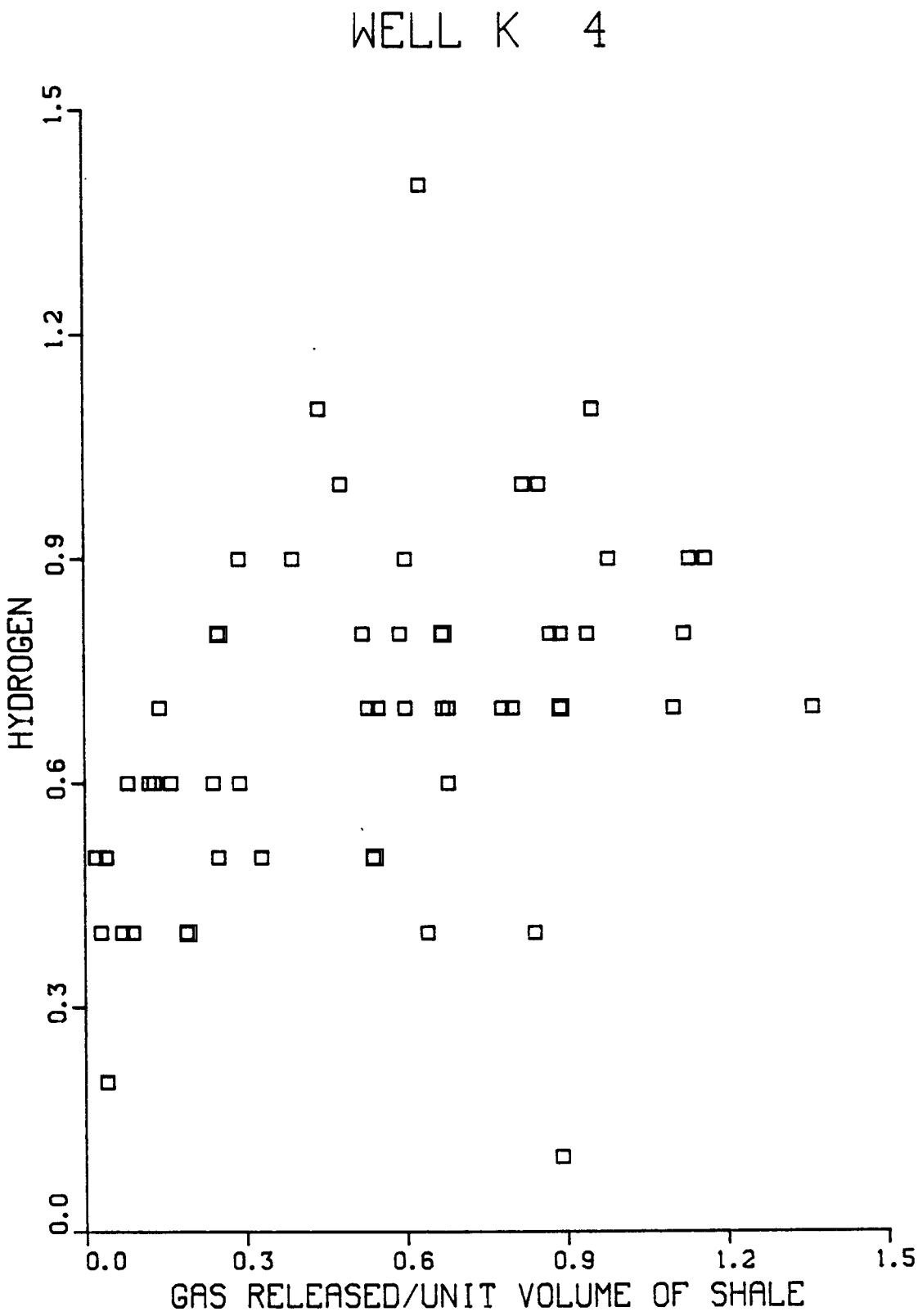


FIGURE 10. HYDROCARBON CONTENT VERSUS HYDROGEN CONTENT FOR WELL K-4

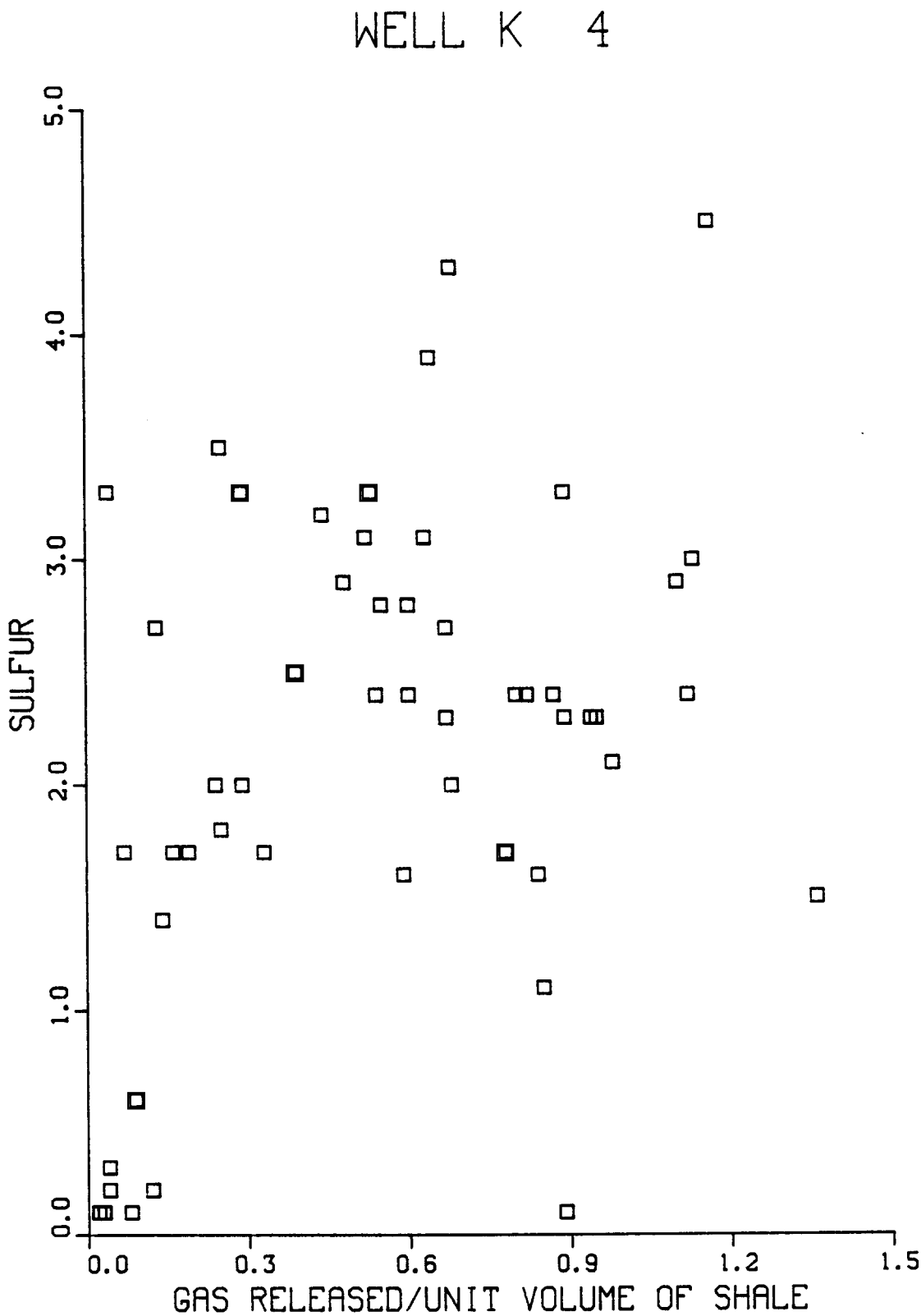


FIGURE 11. HYDROCARBON CONTENT VERSUS SULFUR CONTENT FOR WELL K-4

TABLE 7. SUMMARY OF PHYSICAL CHARACTERIZATION DATA

SAMPLE ID.	BULK DENSITY, G/CC	TRUE DENSITY, G/CC	POROSITY, PCT	SURFACE AREA, M2/G	SEQ NO.
K 4- 969.	2.546	2.869	11.270	1.272	1
K 4- 979.	2.508	2.788	6.803	2.058	2
K 4- 989.	2.629	2.614	0.000	1.724	3
K 4- 999.	2.593	2.951	12.143	1.378	4
K 4-1009.	2.546	2.621	2.849	1.485	5
K 4-1019.	2.493	2.568	2.913	1.780	6
K 4-1031.	2.566	2.611	1.706	3.204	7
K 4-1049.	2.501	2.530	1.154	2.442	8
K 4-1059.	2.533	2.526	0.000	2.293	9
K 4-1079.	2.547	2.581	1.313	1.966	11
K 4-1089.	2.524	2.657	5.003	2.563	12
K 4-1099.	2.632	2.641	.345	3.997	13
K 4-1109.	2.597	2.827	8.133	1.357	14
K 4-1129.	2.596	2.569	0.000	.994	15
K 4-1139.	2.567	2.652	3.192	3.868	16
K 4-1149.	2.520	2.877	12.400	2.042	17
K 4-1159.	2.576	2.506	0.000	2.987	18
K 4-1169.	2.539	2.526	0.000	1.145	19
K 4-1179.	2.585	2.552	0.000	1.707	20
K 4-1189.	2.532	2.705	6.412	1.691	21
K 4-1199.	2.580	2.471	0.000	1.062	22
K 4-1209.	2.576	2.389	0.000	1.741	23
K 4-1219.	2.585	2.790	7.325	3.140	24
K 4-1229.	2.534	2.567	1.278	2.470	25
K 4-1239.	2.567	2.838	9.546	1.532	26
K 4-1249.	2.569	2.645	2.864	2.403	27
K 4-1259.	2.508	2.539	1.238	2.098	28
K 4-1269.	2.547	2.658	4.161	2.025	29
K 4-1279.	2.531	2.696	6.127	1.015	30
K 4-1299.	2.618	2.650	1.192	1.350	32
K 4-1309.	2.587	2.685	3.649	2.344	33
K 4-1319.	2.597	2.515	0.000	2.912	34
K 4-1329.	2.571	2.966	13.396	1.550	35
K 4-1339.	2.608	2.538	0.000	2.058	36
K 4-1349.	2.584	2.887	10.510	2.176	37
K 4-1359.	2.591	2.595	.534	2.559	38
K 4-1369.	2.580	2.412	0.000	2.153	39
K 4-1379.	2.578	2.533	0.000	1.606	40
K 4-1389.	2.576	2.524	0.000	2.138	41
K 4-1399.	2.618	2.520	0.000	2.475	42
K 4-1409.	2.564	2.412	0.000	1.722	43
K 4-1419.	2.587	2.648	2.317	1.901	44
K 4-1429.	2.569	2.367	0.000	1.065	45
K 4-1439.	2.604	2.623	.730	4.133	46
K 4-1439.	2.596	2.091	11.142	1.494	47

TABLE 7. (Continued)

SUMMARY OF PHYSICAL CHARACTERIZATION DATA

SAMPLE NO.	BULK DENSITY, G/CC	TRUE DENSITY, G/CC	POROSITY, PCT	SURFACE AREA, M2/G	SEQ NO.
* 4-1444.	2.580	2.736	5.693	4.382	48
* 4-1456.	2.590	3.085	16.058	3.916	49
* 4-1466.	2.533	2.805	7.417	3.037	50
* 4-1478.	2.566	2.703	5.056	1.896	51
* 4-1486.	2.592	2.774	6.561	2.173	52
* 4-1495.	2.525	2.826	8.539	1.556	53
* 4-1505.	2.593	2.823	8.157	4.367	54

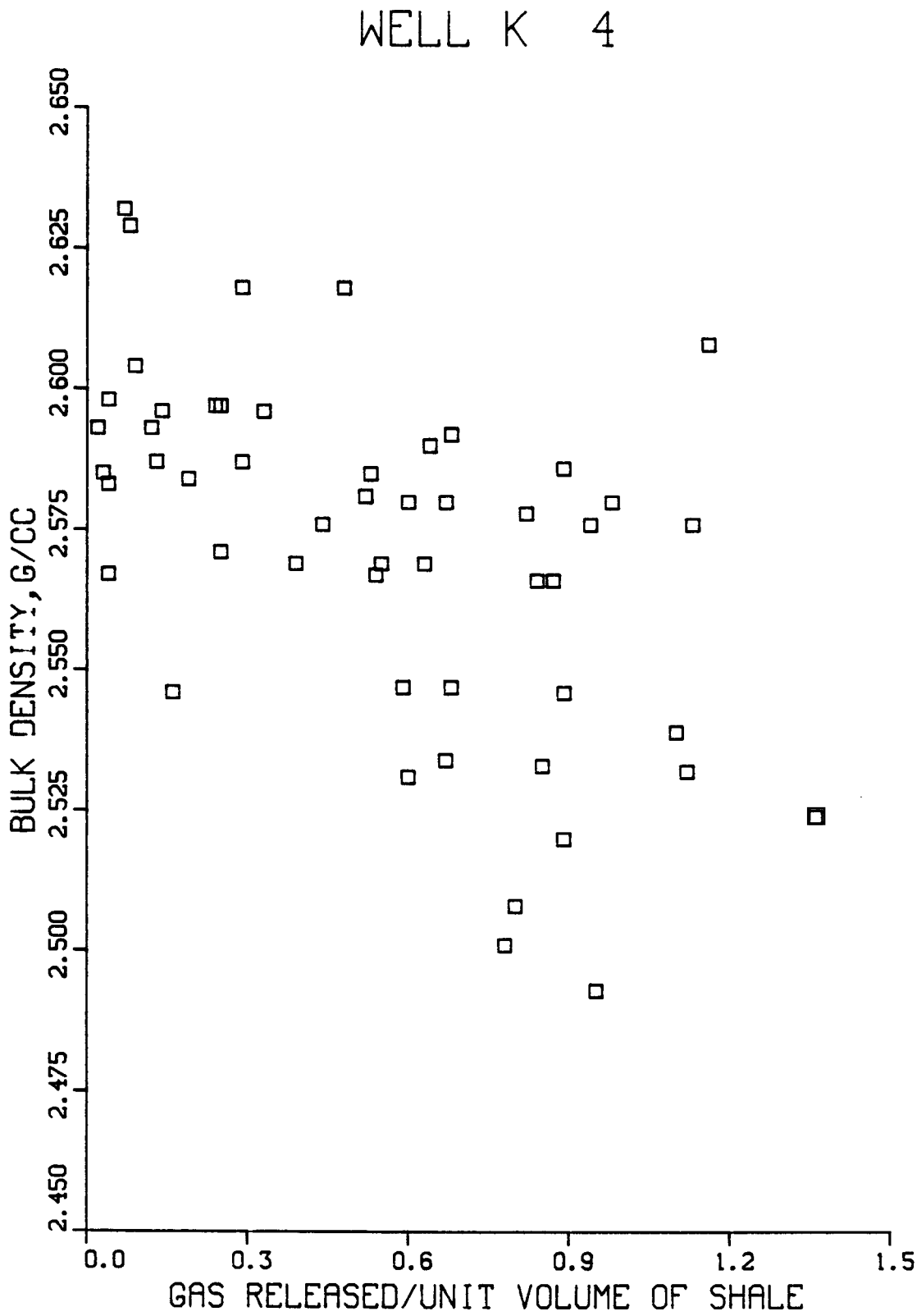


FIGURE 12. HYDROCARBON CONTENT VERSUS BULK DENSITY FOR WELL K-4

density versus carbon data also show a similar relationship (Figure 13). Such a relationship between the bulk density and hydrogen contents is less apparent (Figure 14). Figures 16 and 17 depict sulfur and porosity values as a function of bulk density.

Porosity values determined from the mercury intrusion experiments are tabulated in Table 9. Detailed data on pore size and porosity distribution are given in Appendix A.

Permeability measurements were also made on several K-4 shales. The results are given in Table 10. Average permeability is about 5×10^{-6} darcy.

Task 5. Lithology of K-4 Shales

Several K-4 shales were examined under the petrographic microscope and by SEM/EDAX. K-4 shales are composed predominantly of quartz, illite, and small amounts of pyrite.

Except for the top and bottom samples, the shale samples were similar. These intermediate samples were composed mainly of the clay minerals, predominantly illite, as well as quartz, and small amounts of pyrite. As shown in the energy dispersive analysis in Table 11, the K content of the intermediate samples, which is taken to be indicative of the illite content, is similar. The Si content of these samples is also similar. There is a gradual increase in Fe content with depth, but the S contents vary little.

Sample No. K-4-969, at the top, was predominantly quartz. Further, the quartz in this sample was coarser than in the samples below it, the grains ranging up to about 90 μm, compared to a maximum size range of 20 to 35 μm in all of the other samples. Though no Ca was indicated by EDAX in the top sample, a carbonate mineral taken to be calcite was observed in the powder sample examined by petrographic microscope. Pyrite was not noted in this top sample either by the powder examination or EDAX.

The sample No. K-4-1495, at the bottom, differed from the intermediate samples largely in that it contained an abundance of carbonate mineral. The relatively high Ca count of 7.1 indicates a carbonate mineral. Both powder examination and EDAX results indicate an absence of pyrite in this sample.

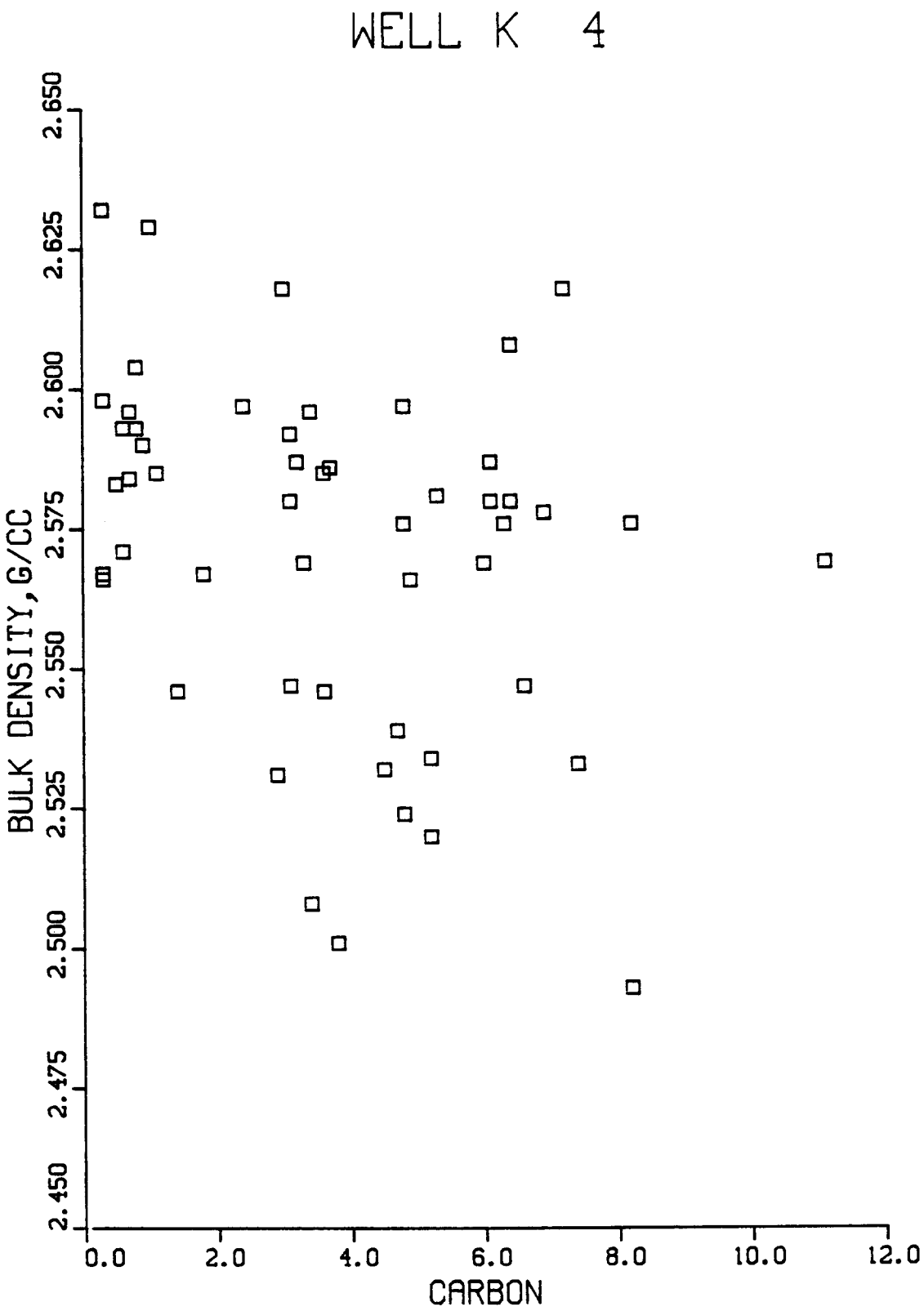


FIGURE 13. CARBON CONTENT VERSUS BULK DENSITY FOR WELL K-4

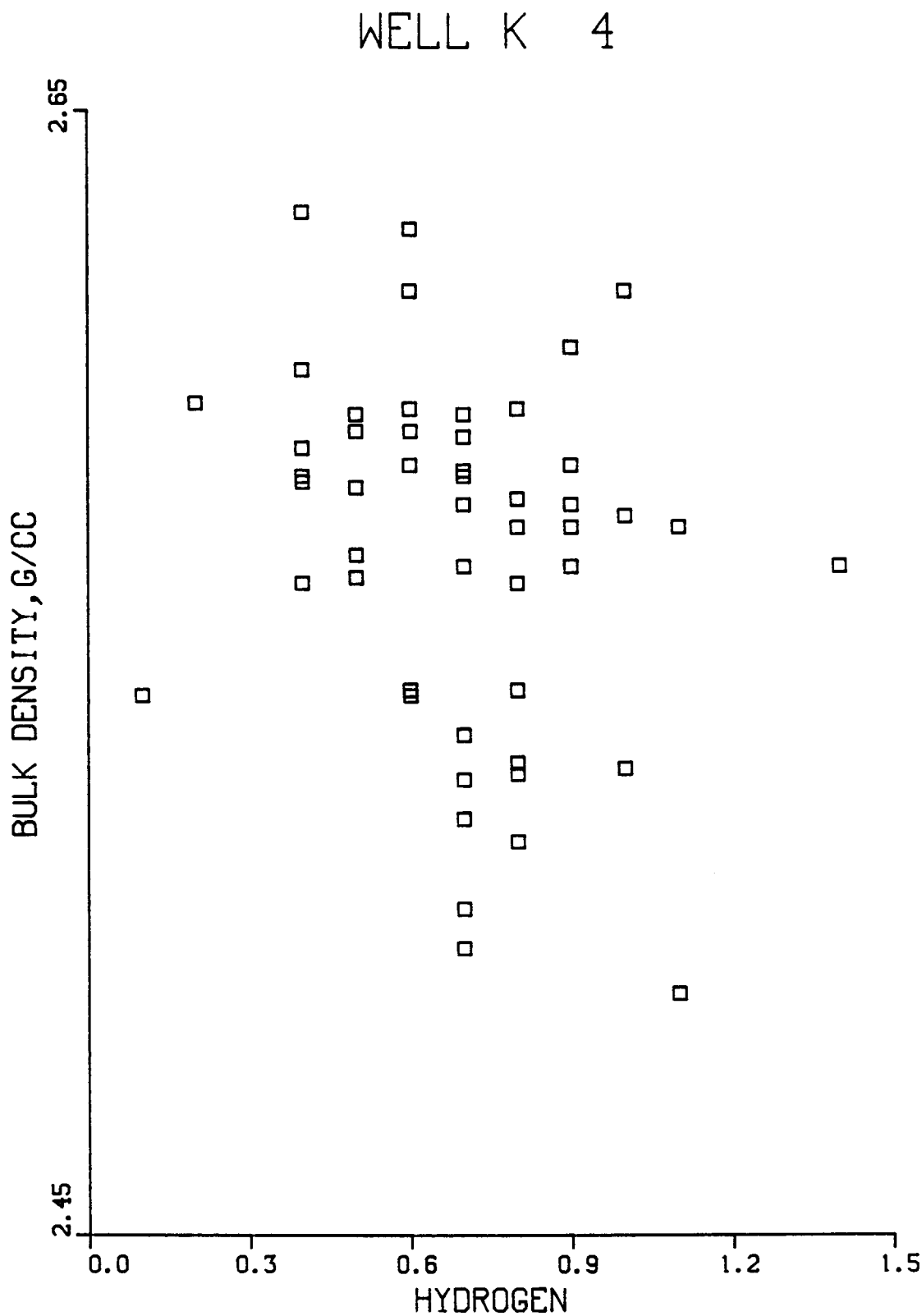


FIGURE 14. HYDROGEN CONTENT VERSUS BULK DENSITY FOR WELL K-4

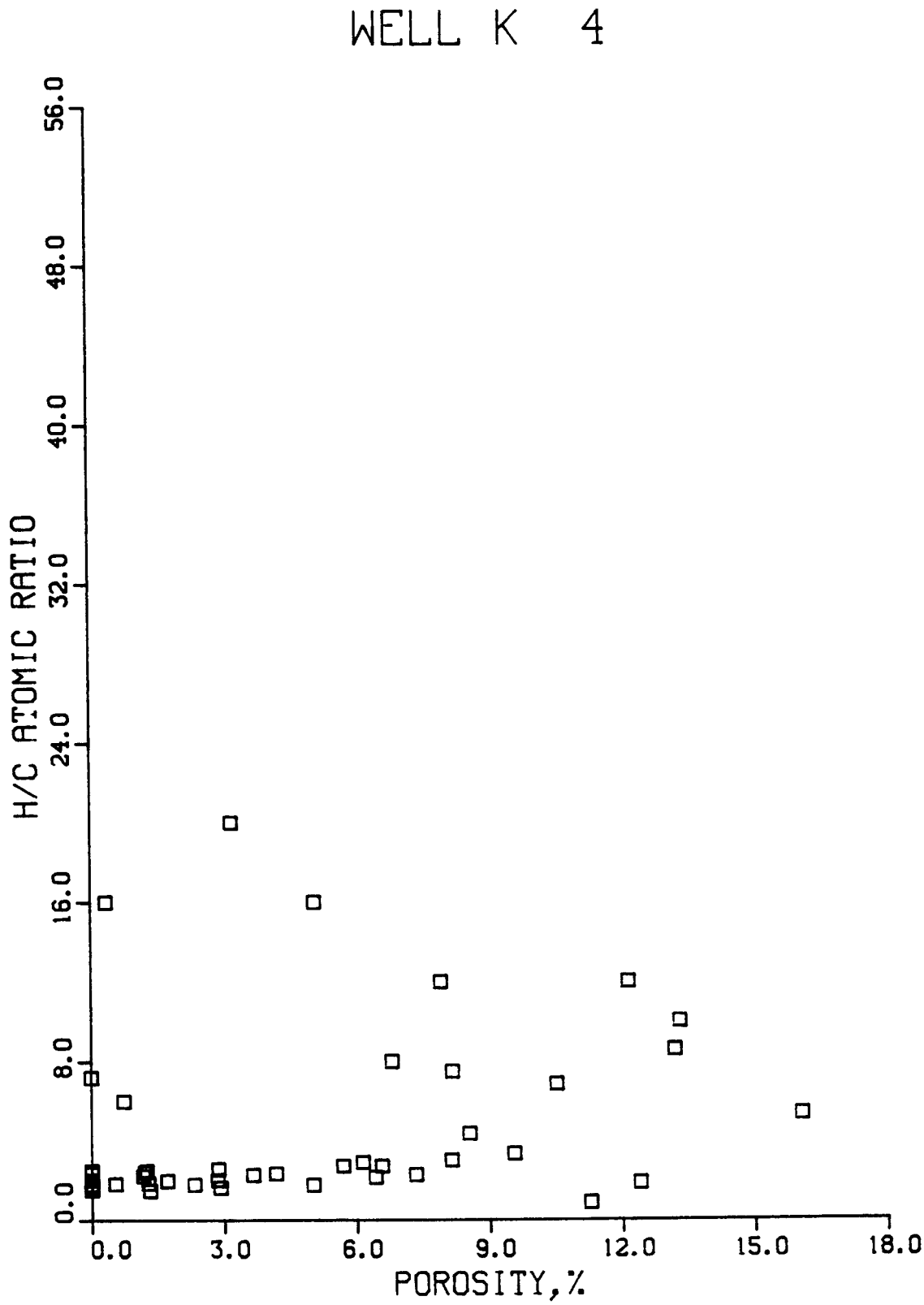


FIGURE 15. POROSITY VERSUS H/C ATOMIC RATIO FOR WELL K-4

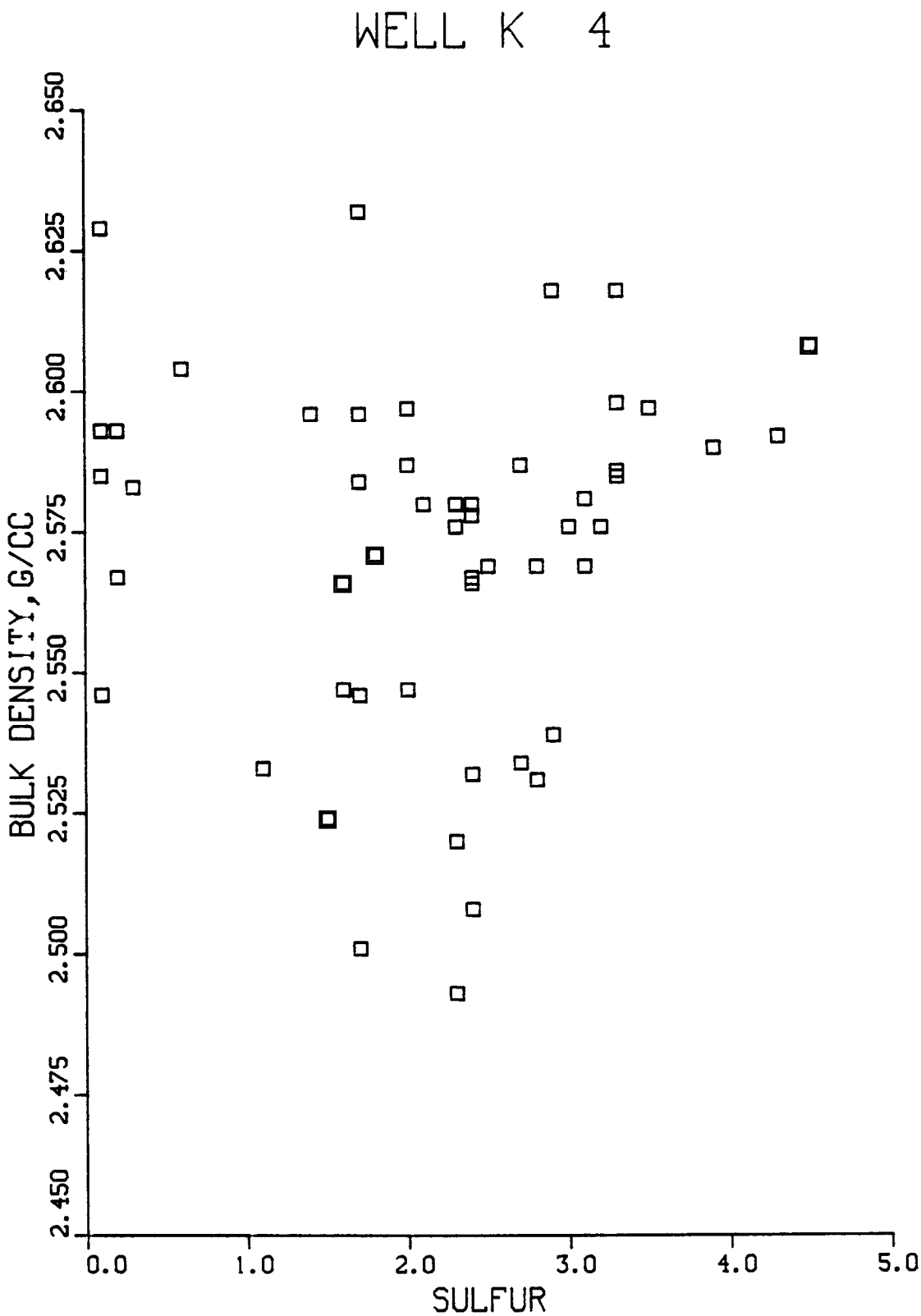


FIGURE 16. SULFUR CONTENT VERSUS BULK DENSITY FOR WELL K-4

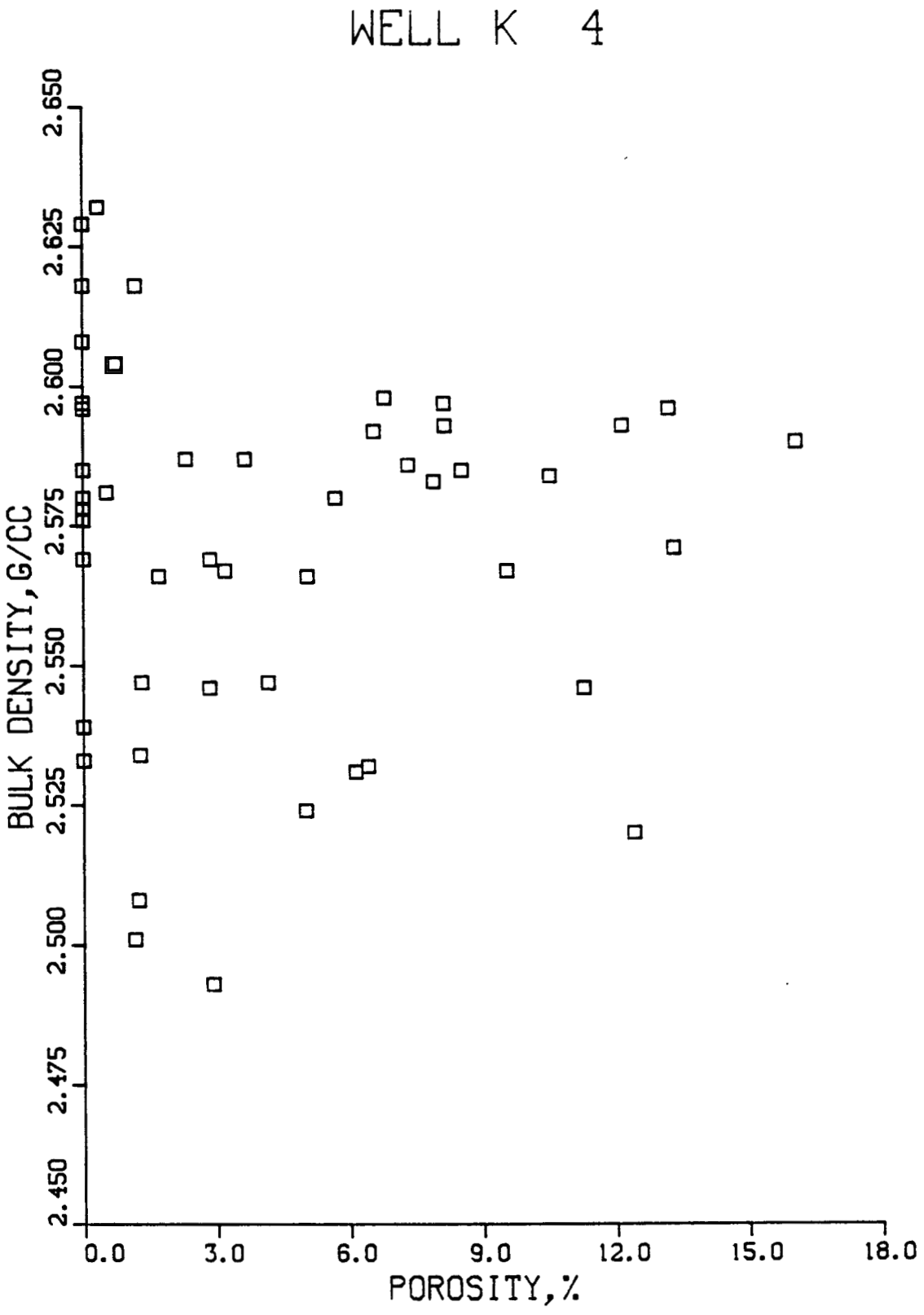


FIGURE 17. POROSITY VERSUS BULK DENSITY FOR WELL K-4

PLOT 7 16.26.40 MON 30 APR, 1979 JOB- . BATTELLE DISSPLA VER 7.5

TABLE 8. STATISTISTICAL ANALYSES OF PHYSICAL CHARACTERIZATION DATA

WELL K 4

	MEAN	STANDARD DEVIATION	VARIANCE	COEFFICIENT OF DEVIATION	95 PCT. CONFIDENCE INTERVAL LOWER LIMIT	UPPER LIMIT	NO OF SAMPLES
BULK DENSITY, G/CC	2.572	.03	.00	.01	2.563	2.580	52
TOUR DENSITY, G/CC	2.661	.16	.03	.06	2.616	2.707	52
POROSITY, PCT	4.069	4.50	20.26	1.11	2.816	5.322	52
SURFACE AREA, M2/G	2.200	.89	.79	.40	1.953	2.447	52

TABLE 9. MERCURY INTRUSION POROSIMETRY DATA

SEQUENCE NUMBER	ID NUMBER	POROSITY PERCENT
1	K-4- 969	7.02
3	K-4- 989	10.92
5	K-4-1009	5.46
7	K-4-1039	2.60
9	K-4-1059	4.96
11	K-4-1079	5.20
13	K-4-1096	5.46
15	K-4-1126	5.46
17	K-4-1143	4.42
19	K-4-1163	5.20
21	K-4-1183	5.20
23	K-4-1201	0.23
25	K-4-1221	5.46
27	K-4-1241	0.23
29	K-4-1260	5.72
33	K-4-1300	5.46
35	K-4-1319	8.84
37	K-4-1339	7.80
39	K-4-1359	0.23
41	K-4-1379	2.86
43	K-4-1399	5.98
45	K-4-1419	2.86
47	K-4-1436	7.54
49	K-4-1456	8.58
51	K-4-1476	8.06
53	K-4-1495	9.36

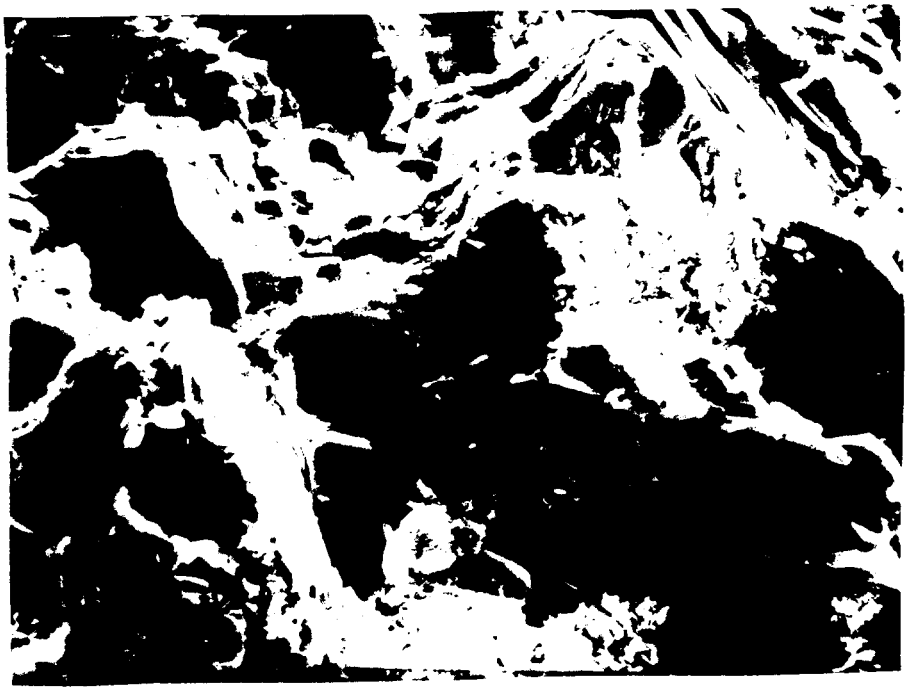
TABLE 10. HELIUM PERMEABILITY OF K-4 SHALES

Sample I.D. Number	Permeability, Darcy
K-4- 969	6.67×10^{-6}
K-4-1126	4.99×10^{-6}
K-4-1300	5.81×10^{-6}
K-4-1399	9.16×10^{-6}
K-4-1505	4.99×10^{-6}

TABLE 11. ENERGY DISPERSIVE ANALYSES OF K-4 SHALES

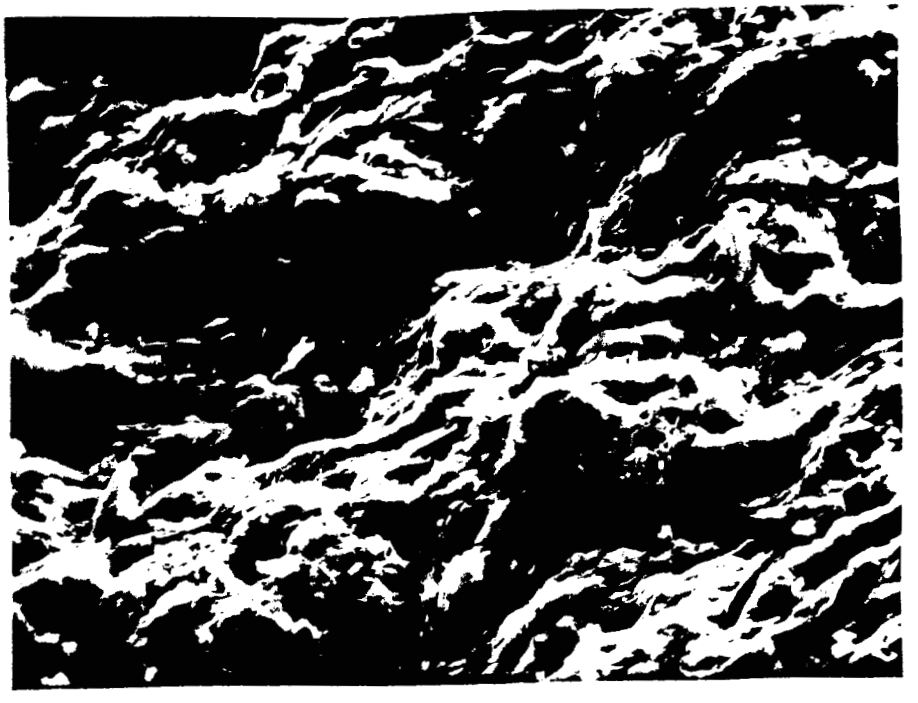
Shale Sample	Element Count Per 100 Counts												
	Na	K	Ca	Mg	Al	Si	Fe	S	Ti	Fe/S	K/Al	K/Si	Al/Si
K-4- 969	-	1.8	-	-	8.9	86.2	2.4	-	0.7	∞	0.20	0.02	0.10
K-4-1079	-	6.8	-	-	16.8	69.8	3.6	2.8	0.2	1.3	0.40	0.10	0.24
K-4-1183	-	8.0	-	-	17.9	66.2	4.1	2.8	1.0	1.5	0.45	0.12	0.27
K-4-1290	-	8.0	-	-	20.1	64.0	4.7	2.4	0.8	2.0	0.40	0.13	0.31
K-4-1379	-	8.8	-	-	16.9	64.5	6.7	2.3	0.8	2.9	0.52	0.14	0.26
K-4-1495	-	8.3	7.1	2.4	21.1	54.4	5.4	-	1.1	∞	0.40	0.16	0.39
Illite Grain	-	17.2	-	-	25.5	57.3	-	-	-	-	0.67	0.30	0.45
Pyrite Grain	-	-	-	-	-	-	27.5	72.5	-	0.38	-	-	-
Quartz Grain	-	-	-	-	-	100.0	-	-	-	-	-	-	-

SEM views in Figures 18 through 23 show typical fracture surfaces of the samples.



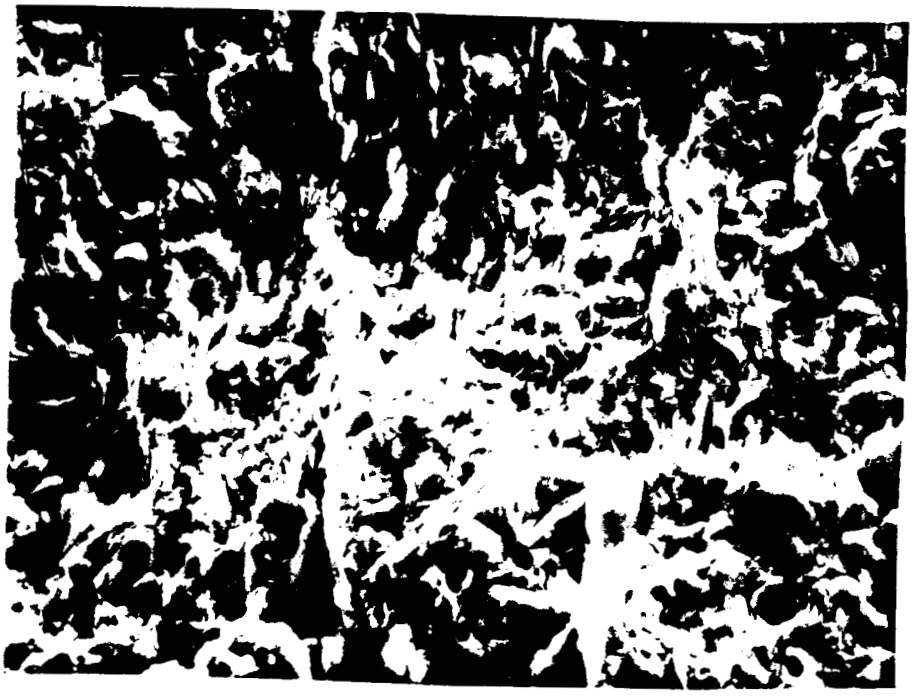
700 X

FIGURE 18. SEM MICROPHOTOGRAPH OF SAMPLE K-4-969



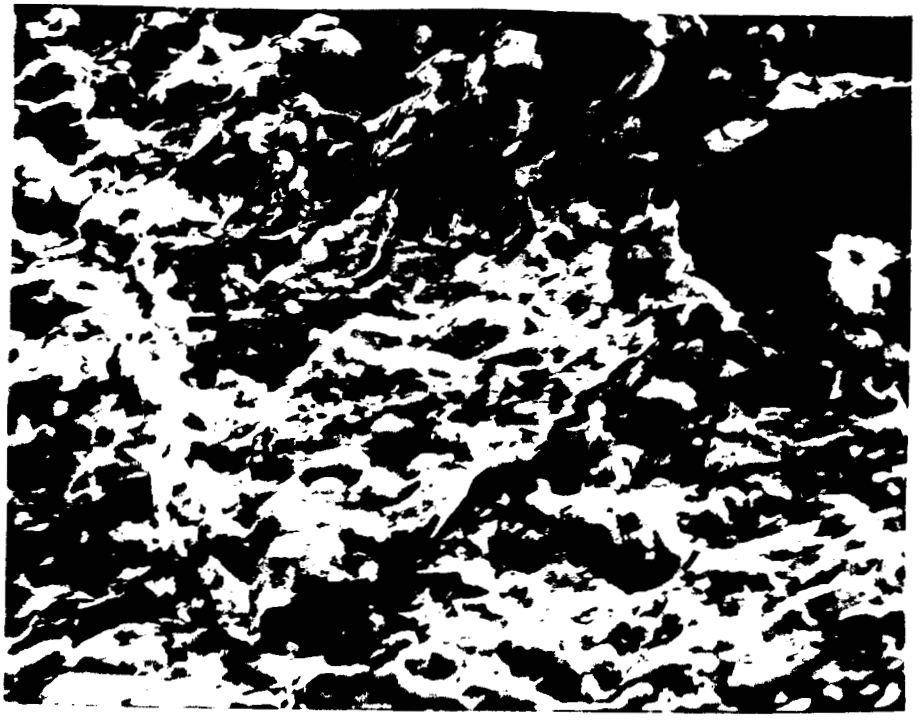
700 X

FIGURE 19. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1079



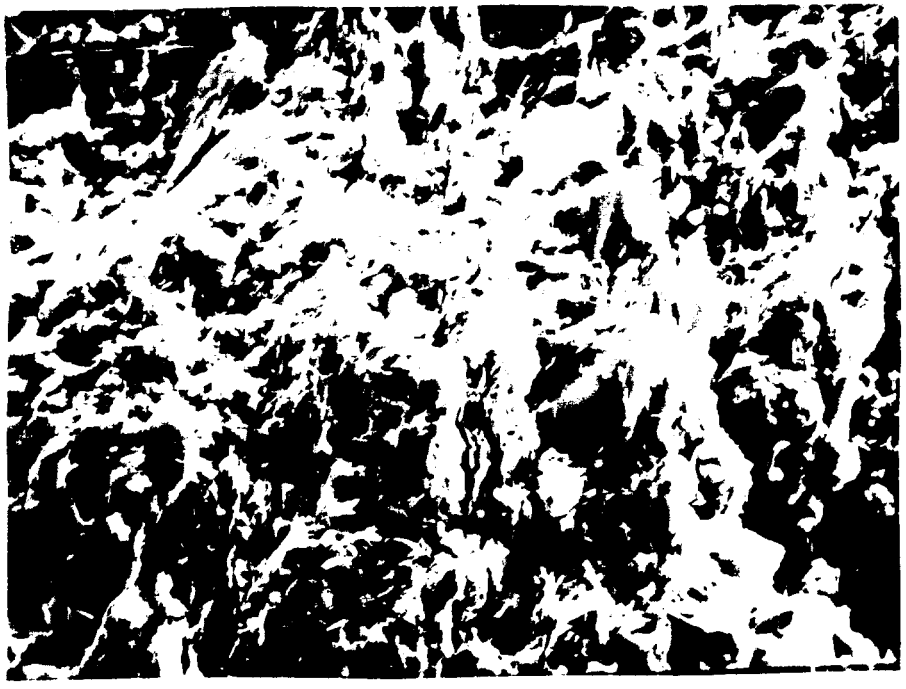
700 X

FIGURE 20. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1183



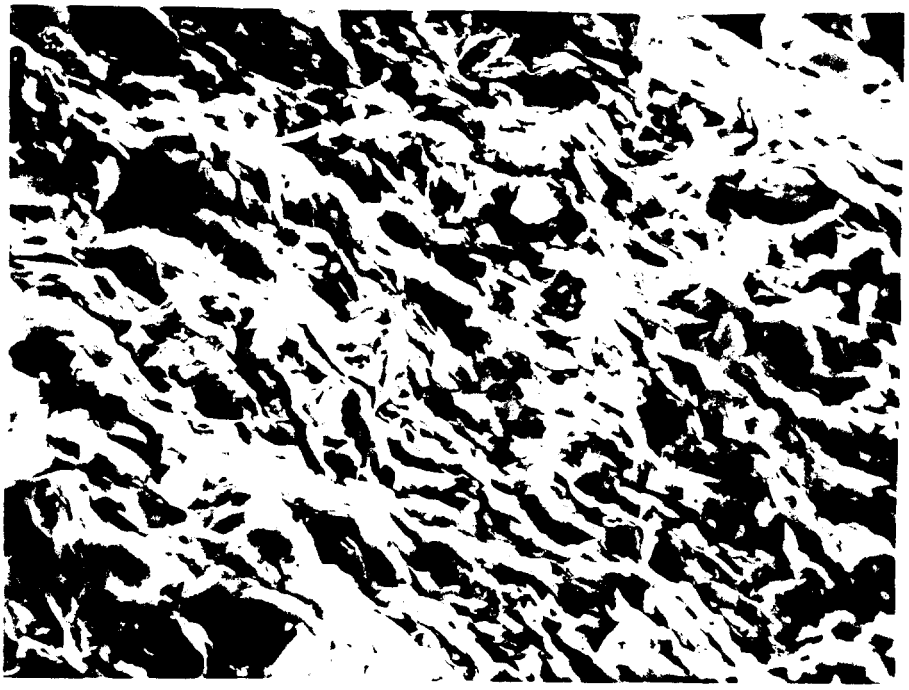
700 X

FIGURE 21. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1290



700 X

FIGURE 22. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1379



700 X

FIGURE 23. SEM MICROPHOTOGRAPH OF SAMPLE K-4-1495

APPENDIX A

SUMMARY OF PHYSICAL CHARACTERIZATION DATA
04/26/79

SAMPLE ID.	BULK DENSITY, G/CC	TRUE DENSITY, G/CC	POROSITY, PCT	SURFACE AREA, M2/G	SEQ NO.
* 4- 969.	2.546	2.869	11.270	1.272	1
* 4- 979.	2.598	2.789	6.863	2.058	2
* 4- 990.	2.503	2.951	12.143	1.378	4
* 4-1009.	2.546	2.621	2.849	1.485	5
* 4-1019.	2.493	2.568	2.913	1.780	6
* 4-1039.	2.566	2.611	1.706	3.204	7
* 4-1049.	2.501	2.530	1.154	2.442	8
* 4-1079.	2.547	2.581	1.313	1.966	11
* 4-1089.	2.524	2.657	5.003	2.563	12
* 4-1099.	2.632	2.641	.345	3.997	13
* 4-1109.	2.597	2.827	8.133	1.357	14
* 4-1139.	2.567	2.652	3.192	3.868	16
* 4-1149.	2.520	2.877	12.400	2.042	17
* 4-1199.	2.532	2.705	6.412	1.691	21
* 4-1219.	2.536	2.790	7.325	3.140	24
* 4-1229.	2.534	2.567	1.278	2.470	25
* 4-1239.	2.567	2.839	9.546	1.532	26
* 4-1249.	2.569	2.645	2.864	2.403	27
* 4-1259.	2.508	2.539	1.238	2.098	28
* 4-1269.	2.547	2.658	4.161	2.025	29
* 4-1279.	2.531	2.696	6.127	1.015	30
* 4-1299.	2.618	2.650	1.192	1.350	32
* 4-1309.	2.587	2.685	3.649	2.344	33
* 4-1319.	2.571	2.966	13.306	1.550	35
* 4-1339.	2.584	2.887	10.510	2.176	37
* 4-1349.	2.591	2.595	.534	2.559	38
* 4-1409.	2.587	2.648	2.317	1.901	44
* 4-1429.	2.604	2.623	.730	4.133	46
* 4-1439.	2.596	2.991	13.192	1.494	47

POROSITY DATA FOR SAMPLE K 4- 369.

SEQUENCE NUMBER 1
PORE VOLUME .027 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0270	.0
2.	29.392	7.500	.0012	.0258	4.6
3.	44.088	5.000	.0012	.0258	4.6
4.	58.784	3.700	.0012	.0258	4.6
5.	73.480	3.000	.0014	.0256	5.1
6.	88.176	2.500	.0014	.0256	5.1
7.	102.872	2.100	.0014	.0256	5.1
8.	117.568	1.900	.0017	.0253	6.3
9.	132.264	1.600	.0022	.0248	8.0
10.	146.960	1.500	.0025	.0245	9.1
11.	161.656	1.400	.0028	.0242	10.3
12.	176.352	1.300	.0031	.0239	11.4
13.	191.048	1.200	.0034	.0236	12.6
14.	205.744	1.100	.0035	.0235	13.1
15.	220.440	1.000	.0037	.0233	13.7
16.	235.136	.930	.0039	.0231	14.3
17.	243.832	.880	.0043	.0227	16.0
18.	264.528	.830	.0045	.0225	16.6
19.	279.224	.790	.0045	.0225	16.6
20.	293.920	.750	.0049	.0221	18.3
25.	367.400	.600	.0049	.0221	18.3
30.	440.880	.500	.0049	.0221	18.3
35.	514.360	.430	.0059	.0211	21.7
40.	587.840	.370	.0068	.0202	25.1
45.	661.320	.330	.0074	.0196	27.4
50.	734.800	.300	.0080	.0190	29.7
55.	808.280	.270	.0090	.0181	33.1
60.	881.760	.250	.0099	.0171	36.6
65.	955.240	.230	.0108	.0162	40.0
70.	1028.720	.210	.0117	.0153	43.4
75.	1102.200	.200	.0130	.0140	48.0
80.	1175.680	.180	.0142	.0128	52.6
85.	1249.160	.170	.0148	.0122	54.9

POROSITY DATA FOR SAMPLE K 4- 369.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0154	.0116	57.1
100.	1469.600	.150	.0162	.0108	60.0
110.	1616.560	.140	.0170	.0100	62.9
120.	1763.520	.130	.0176	.0094	65.1
130.	1910.480	.120	.0179	.0091	66.3
140.	2057.440	.110	.0193	.0077	71.4
150.	2204.400	.100	.0193	.0077	71.4
170.	2498.320	.088	.0201	.0069	74.3
180.	2645.280	.083	.0204	.0066	75.4
190.	2792.240	.079	.0208	.0062	77.1
200.	2939.200	.075	.0208	.0062	77.1
220.	3233.120	.068	.0216	.0054	80.0
240.	3527.040	.062	.0219	.0051	81.1
260.	3820.960	.057	.0224	.0046	82.9
280.	4114.880	.053	.0225	.0045	83.4
300.	4408.800	.050	.0228	.0042	84.6
330.	4849.680	.045	.0231	.0039	85.7
360.	5290.560	.041	.0233	.0037	86.3
390.	5731.440	.038	.0236	.0034	87.4
420.	6172.320	.035	.0239	.0031	88.6
450.	6613.200	.033	.0239	.0031	88.6
490.	7201.040	.030	.0244	.0026	90.3
510.	7496.960	.029	.0245	.0025	90.9
540.	7935.840	.027	.0248	.0022	92.0
590.	8670.640	.025	.0250	.0020	92.6
610.	8964.560	.024	.0250	.0020	92.6
640.	9405.440	.023	.0250	.0020	92.6
700.	10287.200	.021	.0256	.0014	94.9
740.	10875.040	.020	.0256	.0014	94.9
770.	11315.920	.019	.0259	.0011	96.0
800.	11756.800	.019	.0259	.0011	96.0
830.	12197.680	.018	.0262	.0008	97.1
860.	12638.560	.017	.0262	.0008	97.1
900.	13226.400	.017	.0262	.0008	97.1
930.	13667.280	.016	.0265	.0005	98.3
960.	13961.200	.016	.0267	.0003	98.9
1000.	14696.000	.014	.0270	.0000	100.0

POROSITY DATA FOR SAMPLE K 4- 989.

SEQUENTIAL NUMBER 3
PORE VOLUME .042 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0418	.0
2.	29.392	7.500	.0117	.0301	28.0
3.	44.088	5.000	.0141	.0277	33.8
4.	58.784	3.700	.0147	.0271	35.3
5.	73.480	3.000	.0147	.0271	35.3
6.	88.176	2.500	.0154	.0265	36.7
7.	102.872	2.100	.0158	.0261	37.7
8.	117.568	1.800	.0166	.0253	39.6
9.	132.264	1.600	.0172	.0246	41.1
10.	146.960	1.500	.0178	.0240	42.5
11.	161.656	1.400	.0186	.0232	44.4
12.	176.352	1.300	.0190	.0228	45.4
13.	191.048	1.200	.0190	.0228	45.4
14.	205.744	1.100	.0202	.0216	48.3
15.	220.440	1.000	.0206	.0212	49.3
16.	235.136	.930	.0210	.0208	50.2
17.	249.832	.880	.0214	.0204	51.2
18.	264.528	.830	.0218	.0200	52.2
19.	279.224	.790	.0226	.0192	54.1
20.	293.920	.750	.0230	.0188	55.1
25.	367.400	.600	.0230	.0188	55.1
30.	440.880	.500	.0230	.0188	55.1
35.	514.360	.430	.0234	.0184	56.0
40.	587.840	.370	.0238	.0180	57.0
45.	661.320	.330	.0251	.0168	59.9
50.	734.800	.300	.0263	.0156	62.8
55.	808.280	.270	.0271	.0147	64.7
60.	881.760	.250	.0279	.0139	66.7
65.	955.240	.230	.0283	.0135	67.6
70.	1028.720	.210	.0287	.0131	68.6
75.	1102.200	.200	.0289	.0129	69.1
80.	1175.680	.180	.0291	.0127	69.6
85.	1249.160	.170	.0295	.0123	70.5

POROSITY DATA FOR SAMPLE K 4- 989.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0293	.0119	71.5
100.	1469.600	.150	.0303	.0115	72.5
110.	1616.560	.140	.0305	.0113	72.9
120.	1763.520	.130	.0309	.0109	73.9
130.	1910.480	.120	.0317	.0101	75.8
140.	2057.440	.110	.0319	.0099	76.3
150.	2204.400	.100	.0325	.0093	77.8
160.	2351.360	.090	.0325	.0093	77.8
170.	2498.320	.088	.0325	.0093	77.8
180.	2645.280	.083	.0325	.0093	77.8
190.	2792.240	.079	.0325	.0093	77.8
200.	2939.200	.075	.0325	.0093	77.8
220.	3233.120	.065	.0325	.0093	77.8
240.	3527.040	.062	.0335	.0083	80.2
260.	3820.960	.057	.0343	.0075	82.1
280.	4114.880	.053	.0343	.0075	82.1
300.	4408.800	.050	.0345	.0073	82.6
330.	4849.680	.045	.0347	.0071	83.1
360.	5290.560	.041	.0347	.0071	83.1
390.	5731.440	.038	.0356	.0063	85.0
420.	6172.320	.035	.0360	.0059	86.0
450.	6613.200	.033	.0364	.0055	87.0
480.	7201.040	.030	.0366	.0053	87.4
510.	7494.960	.029	.0372	.0046	88.9
540.	7935.840	.027	.0376	.0042	89.9
570.	8670.640	.025	.0380	.0038	90.8
610.	8964.560	.024	.0380	.0038	90.8
640.	9405.440	.023	.0384	.0034	91.8
700.	10287.200	.021	.0388	.0030	92.8
740.	10875.040	.020	.0392	.0026	93.7
770.	11315.920	.019	.0396	.0022	94.7
800.	11756.800	.019	.0404	.0014	96.6
850.	12197.680	.018	.0404	.0014	96.6
900.	12638.560	.017	.0410	.0008	98.1
950.	13226.400	.017	.0412	.0006	98.6
990.	13667.280	.016	.0416	.0002	99.5
1050.	13961.200	.016	.0418	.0000	100.0
1100.	14695.000	.014	.0418	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1009.

[illegible] NUMBER 5
PORE VOLUME .021 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0210	.0
2.	29.392	7.500	.0017	.0193	8.1
3.	44.088	5.000	.0017	.0193	8.1
4.	58.784	3.700	.0017	.0193	8.1
5.	73.480	3.000	.0017	.0193	8.1
6.	88.176	2.500	.0020	.0191	9.3
7.	102.872	2.100	.0020	.0191	9.3
8.	117.568	1.800	.0020	.0191	9.3
9.	132.264	1.600	.0020	.0191	9.3
10.	146.960	1.500	.0020	.0191	9.3
11.	161.656	1.400	.0022	.0188	10.5
12.	176.352	1.300	.0022	.0188	10.5
13.	191.048	1.200	.0022	.0188	10.5
14.	205.744	1.100	.0022	.0188	10.5
15.	220.440	1.000	.0022	.0188	10.5
16.	235.136	.930	.0022	.0188	10.5
17.	249.832	.880	.0022	.0188	10.5
18.	264.528	.830	.0024	.0186	11.6
19.	279.224	.790	.0024	.0186	11.6
20.	293.920	.750	.0029	.0181	14.0
25.	367.400	.600	.0029	.0181	14.0
30.	440.880	.500	.0029	.0181	14.0
35.	514.360	.430	.0032	.0179	15.1
40.	587.840	.370	.0034	.0176	16.3
45.	661.320	.330	.0039	.0171	18.6
50.	734.800	.300	.0044	.0166	20.9
55.	808.280	.270	.0049	.0161	23.3
60.	881.760	.250	.0054	.0156	25.6
65.	955.240	.230	.0059	.0152	27.9
70.	1028.720	.210	.0064	.0147	30.2
75.	1102.200	.200	.0066	.0144	31.4
80.	1175.680	.180	.0068	.0142	32.6
85.	1243.160	.170	.0071	.0139	33.7

POROSITY DATA FOR SAMPLE K 4-1009.

PRESSURE PSIA	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0073	.0137	34.9
100.	1469.600	.150	.0078	.0132	37.2
110.	1616.560	.140	.0078	.0132	37.2
120.	1763.520	.130	.0078	.0132	37.2
130.	1910.480	.120	.0093	.0117	44.2
140.	2057.440	.110	.0095	.0115	45.3
150.	2204.400	.100	.0095	.0115	45.3
160.	2351.360	.093	.0098	.0112	46.5
170.	2498.320	.083	.0098	.0112	46.5
180.	2645.280	.079	.0100	.0110	47.7
190.	2792.240	.075	.0100	.0110	47.7
200.	2939.200	.068	.0100	.0110	47.7
220.	3233.120	.062	.0112	.0098	53.5
240.	3527.040	.057	.0117	.0093	55.8
260.	3820.960	.053	.0120	.0090	57.0
280.	4114.880	.050	.0122	.0088	58.1
300.	4408.800	.045	.0122	.0088	58.1
330.	4849.680	.041	.0130	.0081	61.6
360.	5290.560	.038	.0132	.0078	62.8
390.	5731.440	.035	.0139	.0071	66.3
420.	6172.320	.033	.0142	.0068	67.4
450.	6613.200	.030	.0147	.0064	69.8
480.	7201.040	.029	.0152	.0059	72.1
510.	7494.960	.027	.0156	.0054	74.4
540.	7935.840	.025	.0161	.0049	76.7
570.	8670.640	.024	.0166	.0044	79.1
610.	8964.560	.023	.0169	.0042	80.2
640.	9405.440	.021	.0174	.0037	82.6
680.	10287.200	.020	.0181	.0029	86.0
740.	10875.040	.019	.0183	.0027	87.2
770.	11315.920	.018	.0183	.0027	87.2
800.	11756.800	.017	.0193	.0017	91.9
830.	12197.680	.017	.0193	.0017	91.9
860.	12638.560	.016	.0200	.0010	95.3
890.	13226.400	.016	.0205	.0005	97.7
930.	13667.280	.016	.0210	.0000	100.0
960.	13961.200	.014	.0210	.0000	100.0
1000.	14636.000				

POROSITY DATA FOR SAMPLE K 4-1039.

PROBE NO. NUMBER 7
PORE VOLUME .010 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0102	0.0
2.	29.392	7.500	.0018	.0084	17.5
3.	44.088	5.000	.0018	.0084	17.5
4.	58.784	3.700	.0018	.0084	17.5
5.	73.480	3.000	.0018	.0084	17.5
6.	88.176	2.500	.0018	.0084	17.5
7.	102.872	2.100	.0018	.0084	17.5
8.	117.568	1.900	.0018	.0084	17.5
9.	132.264	1.600	.0018	.0084	17.5
10.	146.960	1.500	.0018	.0084	17.5
11.	161.656	1.400	.0018	.0084	17.5
12.	176.352	1.300	.0020	.0082	20.0
13.	191.048	1.200	.0020	.0082	20.0
14.	205.744	1.100	.0020	.0082	20.0
15.	220.440	1.000	.0020	.0082	20.0
16.	235.136	.930	.0020	.0082	20.0
17.	249.832	.880	.0020	.0082	20.0
18.	264.528	.830	.0020	.0082	20.0
19.	279.224	.790	.0020	.0082	20.0
20.	293.920	.750	.0020	.0082	20.0
25.	367.400	.600	.0020	.0082	20.0
30.	440.880	.500	.0020	.0082	20.0
35.	514.360	.430	.0020	.0082	20.0
40.	587.840	.370	.0020	.0082	20.0
45.	661.320	.330	.0020	.0082	20.0
50.	734.800	.300	.0020	.0082	20.0
55.	808.280	.270	.0020	.0082	20.0
60.	881.760	.250	.0020	.0082	20.0
65.	955.240	.230	.0020	.0082	20.0
70.	1028.720	.210	.0023	.0079	22.5
75.	1102.200	.200	.0023	.0079	22.5
80.	1175.680	.190	.0023	.0079	22.5
85.	1249.160	.170	.0023	.0079	22.5

POROSITY DATA FOR SAMPLE K 4-1039.

ABSOLUTE MPa	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.150	.0023	.0079	22.5
100.	1469.600	.150	.0023	.0079	22.5
110.	1616.560	.140	.0023	.0079	22.5
120.	1763.520	.130	.0023	.0079	22.5
130.	1910.480	.120	.0023	.0079	22.5
140.	2057.440	.110	.0023	.0079	22.5
150.	2204.400	.100	.0023	.0079	22.5
170.	2498.320	.085	.0023	.0079	22.5
180.	2645.280	.083	.0023	.0079	22.5
190.	2792.240	.079	.0023	.0079	22.5
200.	2939.200	.075	.0026	.0077	25.0
220.	3233.120	.068	.0026	.0077	25.0
240.	3527.040	.062	.0028	.0074	27.5
260.	3820.960	.057	.0031	.0072	30.0
280.	4114.880	.053	.0031	.0072	30.0
300.	4408.800	.050	.0031	.0072	30.0
330.	4849.680	.045	.0036	.0066	35.0
360.	5290.560	.041	.0041	.0061	40.0
390.	5731.440	.038	.0046	.0056	45.0
420.	6172.320	.035	.0046	.0056	45.0
450.	6613.200	.033	.0051	.0051	50.0
480.	7201.040	.030	.0054	.0049	52.5
510.	7494.960	.029	.0056	.0046	55.0
540.	7935.840	.027	.0056	.0046	55.0
570.	8670.640	.025	.0061	.0041	60.0
610.	9364.560	.024	.0066	.0036	65.0
640.	9805.440	.023	.0066	.0036	65.0
700.	10267.200	.021	.0077	.0026	75.0
740.	10875.040	.020	.0077	.0026	75.0
770.	11315.920	.019	.0082	.0020	80.0
800.	11756.800	.019	.0082	.0020	80.0
830.	12197.680	.018	.0087	.0015	85.0
860.	12638.560	.017	.0087	.0015	85.0
900.	13226.400	.017	.0092	.0010	90.0
930.	13667.280	.016	.0097	.0005	95.0
960.	13961.200	.016	.0097	.0005	95.0
1000.	14696.000	.014	.0102	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1059.

[illegible]
PORE VOLUME .019 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0189	.0
2.	29.392	7.500	.0013	.0176	6.7
3.	44.088	5.000	.0015	.0174	7.9
4.	58.784	3.700	.0015	.0174	7.9
5.	73.480	3.000	.0015	.0174	7.9
6.	88.176	2.500	.0015	.0174	7.9
7.	102.872	2.100	.0015	.0174	7.9
8.	117.568	1.800	.0017	.0172	9.0
9.	132.264	1.600	.0017	.0172	9.0
10.	146.960	1.500	.0017	.0172	9.0
11.	161.656	1.400	.0017	.0172	9.0
12.	176.352	1.300	.0017	.0172	9.0
13.	191.048	1.200	.0017	.0172	9.0
14.	205.744	1.100	.0017	.0172	9.0
15.	220.440	1.000	.0017	.0172	9.0
16.	235.136	.930	.0019	.0170	10.1
17.	249.832	.830	.0019	.0170	10.1
18.	264.528	.830	.0019	.0170	10.1
19.	279.224	.790	.0019	.0170	10.1
20.	293.920	.750	.0019	.0170	10.1
25.	367.400	.600	.0019	.0170	10.1
30.	440.880	.500	.0019	.0170	10.1
35.	514.360	.430	.0025	.0163	13.5
40.	587.840	.370	.0034	.0155	18.0
45.	661.320	.330	.0040	.0148	21.3
50.	734.800	.300	.0042	.0146	22.5
55.	808.280	.270	.0047	.0142	24.7
60.	881.760	.250	.0049	.0140	25.8
65.	955.240	.230	.0053	.0136	28.1
70.	1028.720	.210	.0053	.0136	28.1
75.	1102.200	.200	.0057	.0131	30.3
80.	1175.680	.180	.0061	.0127	32.6
85.	1249.160	.170	.0061	.0127	32.6

POROSITY DATA FOR SAMPLE K 4-1059.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0061	.0127	32.6
100.	1469.600	.150	.0068	.0121	36.0
110.	1616.560	.140	.0068	.0121	36.0
120.	1763.520	.130	.0072	.0117	38.2
130.	1910.480	.120	.0074	.0114	39.3
140.	2057.440	.110	.0081	.0106	42.7
150.	2204.400	.100	.0081	.0108	42.7
160.	2351.360	.093	.0085	.0104	44.9
170.	2498.320	.086	.0085	.0104	44.9
180.	2645.280	.079	.0087	.0102	46.1
190.	2792.240	.075	.0087	.0102	46.1
200.	2939.200	.068	.0091	.0098	48.3
220.	3233.120	.062	.0095	.0093	50.6
240.	3527.040	.057	.0098	.0091	51.7
260.	3820.960	.053	.0102	.0087	53.9
280.	4114.880	.050	.0106	.0083	56.2
300.	4408.800	.046	.0108	.0081	57.3
320.	4702.720	.041	.0110	.0078	58.4
360.	5290.560	.038	.0117	.0072	61.8
380.	5731.440	.035	.0117	.0072	61.8
420.	6172.320	.033	.0125	.0064	66.3
460.	6613.200	.030	.0131	.0057	69.7
500.	7201.040	.029	.0134	.0055	70.8
540.	7494.960	.027	.0138	.0051	73.0
580.	7935.840	.025	.0144	.0045	76.4
620.	8670.640	.024	.0144	.0045	76.4
660.	9064.560	.023	.0148	.0040	78.7
700.	9405.440	.021	.0155	.0034	82.0
740.	10287.280	.020	.0163	.0025	86.5
780.	10875.040	.019	.0167	.0021	88.8
820.	11315.920	.019	.0167	.0021	88.8
860.	11756.800	.018	.0172	.0017	91.0
900.	12197.680	.017	.0174	.0015	92.1
940.	12638.560	.017	.0178	.0011	94.4
980.	13226.400	.016	.0182	.0006	96.6
990.	13667.280	.015	.0184	.0004	97.8
1000.	13961.280	.014	.0189	.0000	100.0
	14696.080				

POROSITY DATA FOR SAMPLE K 4-1079.

SAMPLE NUMBER - 11
PORE VOLUME .020 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0199	.0
2.	29.392	7.500	.0009	.0190	4.4
3.	44.088	5.000	.0009	.0190	4.4
4.	58.784	3.700	.0010	.0189	5.0
5.	73.480	2.900	.0010	.0189	5.0
6.	88.176	2.500	.0011	.0188	5.6
7.	102.872	2.100	.0013	.0186	6.7
8.	117.568	1.800	.0020	.0179	10.0
9.	132.264	1.600	.0022	.0177	11.1
10.	146.960	1.500	.0027	.0173	13.3
11.	161.656	1.400	.0029	.0170	14.4
12.	176.352	1.300	.0033	.0166	16.7
13.	191.048	1.200	.0040	.0159	20.0
14.	205.744	1.100	.0044	.0155	22.2
15.	220.440	1.000	.0049	.0150	24.4
16.	235.136	.930	.0051	.0148	25.6
17.	249.832	.880	.0053	.0146	26.7
18.	264.528	.830	.0058	.0142	28.9
19.	279.224	.790	.0060	.0139	30.0
20.	293.920	.750	.0062	.0137	31.1
25.	367.400	.600	.0063	.0136	31.7
30.	440.880	.500	.0064	.0135	32.2
35.	514.360	.430	.0071	.0128	35.6
40.	587.840	.370	.0077	.0122	38.9
45.	661.320	.330	.0083	.0116	41.7
50.	734.800	.300	.0089	.0111	44.4
55.	808.280	.270	.0091	.0108	45.6
60.	881.760	.250	.0093	.0106	46.7
65.	955.240	.230	.0097	.0102	48.9
70.	1028.720	.210	.0102	.0097	51.1
75.	1102.200	.200	.0104	.0095	52.2
80.	1175.680	.180	.0106	.0093	53.3
85.	1249.160	.170	.0107	.0092	53.9

POROSITY DATA FOR SAMPLE K 4-1079.

PRESSURE PSIA	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0108	.0091	54.4
100.	1469.600	.150	.0111	.0083	55.6
110.	1616.560	.140	.0115	.0084	57.8
120.	1763.520	.130	.0117	.0082	58.9
130.	1910.480	.120	.0122	.0077	61.1
140.	2057.440	.110	.0122	.0077	61.1
150.	2204.400	.100	.0124	.0075	62.2
160.	2498.320	.088	.0126	.0073	63.3
180.	2645.280	.083	.0131	.0069	65.6
190.	2792.240	.079	.0133	.0066	66.7
200.	2939.200	.075	.0133	.0066	66.7
220.	3233.120	.068	.0135	.0064	67.8
240.	3527.040	.062	.0139	.0060	70.0
260.	3820.960	.057	.0139	.0060	70.0
280.	4114.880	.053	.0144	.0055	72.2
300.	4408.800	.050	.0146	.0053	73.3
330.	4849.680	.045	.0148	.0051	74.4
360.	5290.560	.041	.0153	.0046	76.7
390.	5731.440	.038	.0155	.0044	77.8
420.	6172.320	.035	.0157	.0042	78.9
450.	6613.200	.033	.0159	.0040	80.0
480.	7201.040	.030	.0164	.0035	82.2
510.	7494.960	.029	.0164	.0035	82.2
540.	7935.840	.027	.0166	.0033	83.3
580.	8670.640	.025	.0169	.0030	85.0
610.	8964.560	.024	.0170	.0029	85.6
640.	9405.440	.023	.0173	.0027	86.7
700.	10287.200	.021	.0179	.0020	90.0
740.	10875.040	.020	.0184	.0015	92.2
770.	11315.920	.019	.0184	.0015	92.2
800.	11756.800	.019	.0187	.0012	93.9
830.	12197.680	.018	.0189	.0010	95.0
860.	12638.560	.017	.0190	.0009	95.6
900.	13226.400	.017	.0193	.0007	96.7
930.	13667.280	.016	.0195	.0004	97.8
960.	13961.200	.015	.0197	.0002	98.9
1000.	14695.000	.014	.0199	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1096.

SPECIMEN NUMBER 13
PORE VOLUME .021 CC/G

PRESSURE ATM	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0209	.0
2.	29.392	7.500	.0009	.0199	4.2
3.	44.088	5.000	.0010	.0198	4.7
4.	58.784	3.700	.0010	.0198	4.7
5.	73.480	3.000	.0010	.0198	4.7
6.	88.176	2.500	.0012	.0196	5.8
7.	102.872	2.100	.0015	.0193	7.4
8.	117.568	1.800	.0022	.0186	10.5
9.	132.264	1.600	.0026	.0182	12.6
10.	146.960	1.500	.0033	.0175	15.8
11.	161.656	1.400	.0037	.0171	17.9
12.	176.352	1.300	.0042	.0166	20.0
13.	191.048	1.200	.0045	.0163	21.6
14.	205.744	1.100	.0050	.0158	24.2
15.	220.440	1.000	.0055	.0153	26.3
16.	235.136	.930	.0058	.0150	27.9
17.	249.832	.880	.0061	.0147	29.5
18.	264.528	.830	.0066	.0142	31.6
19.	279.224	.790	.0068	.0140	32.6
20.	293.920	.750	.0072	.0136	34.7
25.	367.400	.600	.0074	.0134	35.8
30.	440.880	.500	.0077	.0131	36.8
35.	514.360	.430	.0083	.0125	40.0
40.	587.840	.370	.0090	.0118	43.2
45.	661.320	.330	.0094	.0114	45.3
50.	734.800	.300	.0099	.0109	47.4
55.	808.280	.270	.0104	.0104	50.0
60.	881.760	.250	.0109	.0099	52.6
65.	955.240	.230	.0112	.0096	53.7
70.	1028.720	.210	.0114	.0094	54.7
75.	1102.200	.200	.0116	.0092	55.8
80.	1175.680	.180	.0118	.0090	56.8
85.	1249.160	.170	.0120	.0088	57.9

POROSITY DATA FOR SAMPLE K 4-1096.

PRESSURE ATM.	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.560	.160	.0123	.0085	58.9
100.	1469.600	.150	.0125	.0083	60.0
110.	1615.560	.140	.0129	.0079	62.1
120.	1763.520	.130	.0131	.0077	63.2
130.	1910.480	.120	.0132	.0076	63.7
140.	2057.440	.110	.0134	.0074	64.2
150.	2204.400	.100	.0138	.0070	66.3
160.	2499.320	.088	.0140	.0068	67.4
170.	2645.280	.083	.0142	.0066	68.4
180.	2792.240	.079	.0143	.0065	68.9
200.	2938.200	.075	.0145	.0064	69.5
220.	3233.120	.065	.0147	.0061	70.5
240.	3527.040	.062	.0153	.0055	73.7
260.	3820.960	.057	.0153	.0055	73.7
280.	4114.880	.053	.0155	.0053	74.7
300.	4408.800	.050	.0157	.0051	75.3
320.	4849.680	.045	.0160	.0048	76.8
360.	5290.560	.041	.0164	.0044	78.9
390.	5731.440	.038	.0166	.0042	80.0
420.	6172.320	.035	.0169	.0039	81.1
450.	6613.200	.033	.0173	.0035	83.2
480.	7201.040	.030	.0176	.0032	84.7
510.	7494.960	.029	.0177	.0031	85.3
540.	7935.840	.027	.0180	.0028	86.3
570.	8670.640	.025	.0185	.0023	88.9
610.	8964.560	.024	.0185	.0023	88.9
640.	9405.440	.023	.0188	.0020	90.5
700.	10287.200	.021	.0191	.0018	91.6
740.	10875.040	.020	.0194	.0014	93.2
770.	11315.920	.019	.0194	.0014	93.2
800.	11756.800	.019	.0196	.0012	94.2
830.	12197.680	.018	.0199	.0009	95.8
860.	12638.560	.017	.0199	.0009	95.8
900.	13226.400	.017	.0201	.0007	96.8
930.	13667.280	.016	.0204	.0004	97.9
960.	13961.200	.016	.0206	.0002	98.9
1000.	14696.000	.014	.0208	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1126.

SAMPLE NUMBER 15
PORE VOLUME .021 CC/G

PRESSURE ATM	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0210	.0
2.	29.392	7.500	.0009	.0201	4.1
3.	44.088	5.000	.0010	.0200	4.6
4.	58.784	3.700	.0010	.0200	4.6
5.	73.480	3.000	.0010	.0200	4.6
6.	88.176	2.500	.0013	.0197	6.2
7.	102.872	2.100	.0017	.0192	8.2
8.	117.568	1.800	.0022	.0188	10.3
9.	132.264	1.600	.0027	.0183	12.9
10.	146.960	1.500	.0032	.0177	15.5
11.	161.656	1.400	.0036	.0174	17.0
12.	176.352	1.300	.0039	.0171	18.6
13.	191.048	1.200	.0043	.0167	20.6
14.	203.744	1.100	.0048	.0162	22.7
15.	220.440	1.000	.0052	.0158	24.7
16.	235.136	.930	.0056	.0154	26.8
17.	249.832	.860	.0058	.0151	27.8
18.	264.528	.830	.0061	.0149	28.9
19.	273.224	.790	.0063	.0147	29.9
20.	293.920	.750	.0065	.0145	30.9
25.	367.400	.600	.0066	.0144	31.4
30.	440.880	.500	.0067	.0143	32.0
35.	514.360	.430	.0071	.0138	34.0
40.	587.840	.370	.0076	.0134	36.1
45.	661.320	.330	.0082	.0128	39.2
50.	734.800	.300	.0089	.0121	42.3
55.	808.280	.270	.0094	.0116	44.8
60.	881.760	.250	.0099	.0110	47.4
65.	955.240	.230	.0104	.0106	49.5
70.	1028.720	.210	.0108	.0102	51.5
75.	1102.200	.200	.0111	.0098	53.1
80.	1175.680	.180	.0115	.0095	54.6
85.	1249.160	.170	.0117	.0093	55.7

POROSITY DATA FOR SAMPLE K 4-1126.

PRESSURE ATM.	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0119	.0091	56.7
100.	1469.600	.150	.0119	.0091	56.7
110.	1616.560	.140	.0121	.0089	57.7
120.	1763.520	.130	.0125	.0084	59.8
130.	1910.480	.120	.0128	.0082	60.8
140.	2057.440	.110	.0130	.0080	61.9
150.	2204.400	.100	.0130	.0080	61.9
170.	2498.320	.088	.0136	.0074	64.9
180.	2645.280	.083	.0138	.0071	66.0
190.	2792.240	.079	.0141	.0069	67.0
200.	2939.200	.075	.0143	.0067	68.0
220.	3233.120	.068	.0145	.0065	69.1
240.	3527.040	.062	.0147	.0063	70.1
260.	3820.960	.057	.0149	.0061	71.1
280.	4114.880	.053	.0151	.0058	72.2
300.	4408.800	.050	.0154	.0056	73.2
330.	4849.680	.045	.0158	.0052	75.3
360.	5290.560	.041	.0160	.0050	76.3
390.	5731.440	.038	.0162	.0048	77.3
420.	6172.320	.035	.0167	.0043	79.4
450.	6613.200	.033	.0167	.0043	79.4
480.	7201.040	.030	.0173	.0037	82.5
510.	7494.960	.029	.0175	.0035	83.5
540.	7935.840	.027	.0175	.0035	83.5
590.	8670.640	.025	.0177	.0032	84.5
610.	8964.560	.024	.0177	.0032	84.5
640.	9405.440	.023	.0183	.0027	87.1
700.	10287.200	.021	.0188	.0022	89.7
740.	10875.040	.020	.0192	.0017	91.8
770.	11315.920	.019	.0192	.0017	91.8
800.	11756.800	.019	.0197	.0013	93.8
830.	12197.680	.018	.0200	.0010	95.4
860.	12638.560	.017	.0200	.0010	95.4
910.	13226.400	.017	.0202	.0008	96.4
950.	13667.280	.016	.0206	.0002	99.0
960.	13961.200	.016	.0208	.0002	99.0
1000.	14696.000	.014	.0210	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1143.

STANDARD NUMBER 17
PORE VOLUME .017 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0173	.0
2.	29.392	7.500	.0008	.0165	4.7
3.	44.088	5.000	.0009	.0164	5.2
4.	58.784	3.700	.0009	.0164	5.2
5.	73.480	3.000	.0012	.0161	7.0
6.	88.176	2.500	.0015	.0158	8.7
7.	102.872	2.100	.0019	.0154	11.0
8.	117.568	1.800	.0025	.0148	14.5
9.	132.264	1.600	.0029	.0144	16.9
10.	146.960	1.500	.0032	.0141	18.6
11.	161.656	1.400	.0034	.0139	19.8
12.	176.352	1.300	.0040	.0133	23.3
13.	191.048	1.200	.0042	.0131	24.4
14.	205.744	1.100	.0046	.0127	26.7
15.	220.440	1.000	.0046	.0127	26.7
16.	235.136	.930	.0050	.0123	29.1
17.	249.832	.880	.0052	.0121	30.2
18.	264.528	.830	.0055	.0118	32.0
19.	279.224	.790	.0058	.0115	33.7
20.	293.920	.750	.0061	.0113	34.9
25.	367.400	.600	.0063	.0111	36.0
30.	440.880	.500	.0065	.0109	37.2
35.	514.360	.430	.0070	.0104	40.1
40.	587.840	.370	.0075	.0099	43.0
45.	661.320	.330	.0080	.0094	45.9
50.	734.800	.300	.0085	.0089	48.8
55.	808.280	.270	.0087	.0087	50.0
60.	881.760	.250	.0089	.0085	51.2
65.	955.240	.230	.0092	.0082	52.9
70.	1028.720	.210	.0095	.0079	54.7
75.	1102.200	.200	.0096	.0078	55.2
80.	1175.680	.190	.0097	.0077	55.8
85.	1241.160	.170	.0100	.0074	57.6

POROSITY DATA FOR SAMPLE K 4-1143.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0103	.0071	59.3
100.	1469.600	.150	.0105	.0069	60.5
110.	1616.560	.140	.0107	.0067	61.6
120.	1763.520	.130	.0109	.0065	62.8
130.	1910.480	.120	.0111	.0063	64.0
140.	2057.440	.110	.0112	.0062	64.5
150.	2204.400	.100	.0113	.0061	65.1
170.	2498.320	.088	.0116	.0057	66.9
180.	2645.280	.083	.0119	.0054	68.6
190.	2792.240	.079	.0120	.0053	69.2
200.	2939.200	.075	.0121	.0052	69.8
220.	3233.120	.068	.0121	.0052	69.8
240.	3527.040	.062	.0123	.0050	70.9
260.	3820.960	.057	.0127	.0046	73.3
280.	4114.880	.053	.0129	.0044	74.4
300.	4408.800	.050	.0129	.0044	74.4
330.	4849.680	.045	.0132	.0041	76.2
360.	5290.560	.041	.0133	.0040	76.7
390.	5731.440	.038	.0135	.0038	77.9
420.	6172.320	.035	.0139	.0034	80.2
450.	6613.200	.033	.0141	.0032	81.4
480.	7201.040	.030	.0145	.0028	83.7
510.	7494.960	.029	.0145	.0028	83.7
540.	7935.840	.027	.0148	.0025	85.5
90.	8670.640	.025	.0152	.0021	87.8
610.	8964.560	.024	.0153	.0020	88.4
640.	9405.440	.023	.0155	.0018	89.5
700.	10287.200	.021	.0158	.0015	91.3
740.	10875.040	.020	.0160	.0013	92.4
770.	11315.920	.019	.0162	.0011	93.6
800.	11756.800	.019	.0163	.0010	94.2
830.	12197.680	.018	.0166	.0007	95.9
860.	12638.560	.017	.0166	.0007	95.9
900.	13226.400	.017	.0169	.0004	97.7
930.	13667.280	.016	.0172	.0001	99.4
960.	13961.200	.016	.0172	.0001	99.4
1000.	14636.000	.014	.0173	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1163.

SPECIMEN NUMBER 13
PORE VOLUME .020 CC/G

PRESSURE NUMBER	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0195	.0
2.	29.392	7.500	.0010	.0186	4.9
3.	44.088	5.000	.0011	.0184	5.6
4.	58.784	3.700	.0011	.0184	5.6
5.	73.480	3.000	.0012	.0183	6.2
6.	88.176	2.500	.0017	.0178	8.6
7.	102.872	2.100	.0022	.0174	11.1
8.	117.568	1.800	.0029	.0166	14.8
9.	132.264	1.600	.0031	.0164	16.0
10.	146.960	1.500	.0036	.0159	18.5
11.	161.656	1.400	.0041	.0154	21.0
12.	176.352	1.300	.0042	.0153	21.6
13.	191.048	1.200	.0048	.0147	24.7
14.	205.744	1.100	.0052	.0143	26.5
15.	220.440	1.000	.0054	.0141	27.8
16.	235.136	.930	.0058	.0137	29.6
17.	249.832	.880	.0061	.0134	31.5
18.	264.528	.830	.0064	.0131	32.7
19.	279.224	.790	.0065	.0130	33.3
20.	293.920	.750	.0068	.0128	34.6
25.	367.400	.600	.0069	.0127	35.2
30.	440.880	.500	.0070	.0125	35.8
35.	514.360	.430	.0077	.0118	39.5
40.	587.840	.370	.0084	.0111	43.2
45.	661.320	.330	.0088	.0107	45.1
50.	734.800	.300	.0092	.0104	46.9
55.	808.280	.270	.0095	.0100	48.8
60.	881.760	.250	.0099	.0096	50.6
65.	955.240	.230	.0102	.0093	52.5
70.	1028.720	.210	.0106	.0089	54.3
75.	1102.200	.200	.0107	.0088	54.9
80.	1175.680	.180	.0108	.0087	55.6
85.	1249.160	.170	.0112	.0083	57.4

POROSITY DATA FOR SAMPLE K 4-1163.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0116	.0030	59.3
100.	1469.600	.150	.0118	.0077	60.5
110.	1616.560	.140	.0118	.0077	60.5
120.	1763.520	.130	.0121	.0075	61.7
130.	1910.480	.120	.0125	.0070	64.2
140.	2057.440	.110	.0130	.0065	66.7
150.	2204.400	.100	.0131	.0064	67.3
160.	2351.360	.088	.0133	.0063	67.9
170.	2498.320	.083	.0134	.0061	68.5
180.	2645.280	.079	.0134	.0061	68.5
190.	2792.240	.075	.0135	.0060	69.1
200.	2939.200	.068	.0140	.0055	71.6
220.	3233.120	.062	.0143	.0052	73.5
240.	3527.040	.057	.0143	.0052	73.5
260.	3820.960	.053	.0145	.0051	74.1
280.	4114.880	.050	.0147	.0049	75.3
300.	4408.800	.045	.0151	.0045	77.2
330.	4849.680	.041	.0151	.0045	77.2
360.	5290.560	.038	.0155	.0040	79.6
390.	5731.440	.035	.0157	.0039	80.2
420.	6172.320	.033	.0159	.0036	81.5
450.	6613.200	.030	.0162	.0034	82.7
480.	7201.040	.023	.0164	.0031	84.0
510.	7494.960	.027	.0166	.0029	85.2
540.	7935.840	.025	.0170	.0025	87.0
570.	8670.640	.024	.0170	.0025	87.0
610.	8964.560	.023	.0174	.0022	88.9
640.	9405.440	.021	.0176	.0019	90.1
700.	10287.200	.020	.0182	.0013	93.2
740.	10875.040	.019	.0182	.0013	93.2
770.	11315.920	.019	.0183	.0012	93.8
800.	11756.800	.018	.0186	.0010	95.1
850.	12491.600	.017	.0188	.0007	96.3
900.	13226.400	.017	.0190	.0005	97.5
950.	13667.280	.016	.0193	.0002	98.8
1000.	13961.200	.016	.0193	.0002	98.8
1100.	14695.000	.014	.0195	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1183.

SEQUENCE NUMBER 21
PORE VOLUME .020 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0137	.0
2.	29.392	7.500	.0007	.0189	3.7
3.	44.088	5.000	.0011	.0186	5.4
4.	58.784	3.700	.0015	.0181	7.9
5.	73.480	3.000	.0018	.0179	9.1
6.	88.176	2.500	.0023	.0174	11.6
7.	102.872	2.100	.0026	.0169	14.0
8.	117.568	1.800	.0031	.0166	15.7
9.	132.264	1.600	.0033	.0164	16.5
10.	146.960	1.500	.0037	.0159	19.0
11.	161.656	1.400	.0041	.0156	20.7
12.	176.352	1.300	.0044	.0153	22.3
13.	191.048	1.200	.0047	.0150	24.0
14.	205.744	1.100	.0051	.0145	26.0
15.	220.440	1.000	.0053	.0144	26.9
16.	235.136	.930	.0057	.0140	28.9
17.	249.832	.880	.0060	.0137	30.6
18.	264.528	.830	.0062	.0135	31.4
19.	279.224	.790	.0063	.0133	32.2
20.	293.920	.750	.0067	.0130	33.9
25.	367.400	.600	.0067	.0129	34.3
30.	440.880	.500	.0068	.0128	34.7
35.	514.360	.430	.0072	.0124	36.8
40.	587.840	.370	.0076	.0120	38.8
45.	661.320	.330	.0080	.0116	40.9
50.	734.800	.300	.0085	.0112	43.0
55.	808.280	.270	.0090	.0106	45.9
60.	881.760	.250	.0096	.0101	48.8
65.	955.240	.230	.0098	.0098	50.0
70.	1028.720	.210	.0101	.0096	51.2
75.	1102.200	.200	.0102	.0094	52.1
80.	1175.680	.180	.0104	.0093	52.9
85.	1249.160	.170	.0105	.0092	53.3

POROSITY DATA FOR SAMPLE K 4-1183.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0106	.0091	53.7
100.	1469.600	.150	.0118	.0079	59.9
110.	1616.560	.140	.0120	.0076	61.2
120.	1763.520	.130	.0123	.0074	62.4
130.	1910.480	.120	.0126	.0071	64.0
140.	2057.440	.110	.0128	.0068	65.3
150.	2204.400	.100	.0130	.0067	66.1
170.	2498.320	.086	.0133	.0063	67.8
190.	2645.280	.083	.0135	.0062	68.6
190.	2792.240	.079	.0135	.0062	68.6
200.	2939.200	.075	.0138	.0059	70.2
220.	3233.120	.068	.0140	.0057	71.1
240.	3527.040	.062	.0141	.0055	71.9
260.	3820.960	.057	.0145	.0052	73.6
280.	4114.880	.053	.0147	.0050	74.8
300.	4408.800	.050	.0150	.0047	76.0
330.	4849.680	.045	.0152	.0045	77.3
360.	5290.560	.041	.0155	.0041	78.9
390.	5731.440	.038	.0156	.0041	79.3
420.	6172.320	.035	.0158	.0039	80.2
450.	6613.200	.033	.0161	.0036	81.8
480.	7201.040	.030	.0164	.0033	83.5
510.	7494.960	.029	.0166	.0031	84.3
540.	7935.840	.027	.0167	.0029	85.1
590.	8670.640	.025	.0171	.0025	87.2
610.	8964.560	.024	.0172	.0024	87.6
660.	9405.440	.023	.0174	.0023	88.4
700.	10297.200	.021	.0179	.0018	90.9
740.	10875.040	.020	.0180	.0016	91.7
770.	11315.920	.019	.0182	.0015	92.6
800.	11756.800	.019	.0184	.0013	93.4
850.	12197.680	.018	.0187	.0010	95.0
860.	12638.560	.017	.0189	.0008	95.9
900.	13226.400	.017	.0190	.0007	96.7
930.	13667.280	.016	.0191	.0006	97.1
960.	13961.200	.016	.0193	.0004	97.9
1000.	14696.000	.014	.0197	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1201.

SAMPLE NUMBER = 23
PORE VOLUME .033 CC/G

PRESSURE ATM.	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0034	.0
2.	29.392	7.500	.0007	.0036	8.0
3.	44.088	5.000	.0009	.0035	9.1
4.	58.784	3.700	.0009	.0035	9.1
5.	73.480	3.000	.0009	.0035	9.1
6.	88.176	2.500	.0010	.0034	10.2
7.	102.872	2.100	.0010	.0034	10.2
8.	117.568	1.800	.0010	.0034	10.2
9.	132.264	1.600	.0010	.0034	10.2
10.	146.960	1.500	.0010	.0034	10.2
11.	161.656	1.400	.0010	.0034	10.2
12.	176.352	1.300	.0010	.0034	10.2
13.	191.048	1.200	.0010	.0034	10.2
14.	205.744	1.100	.0010	.0034	10.2
15.	220.440	1.000	.0010	.0034	10.2
16.	235.136	.930	.0013	.0031	13.6
17.	249.832	.880	.0015	.0029	15.9
18.	264.528	.830	.0015	.0029	15.9
19.	279.224	.790	.0017	.0027	18.2
20.	293.920	.750	.0017	.0027	18.2
25.	367.400	.600	.0017	.0027	18.2
30.	440.880	.500	.0017	.0027	18.2
35.	514.360	.430	.0019	.0024	20.5
40.	587.840	.370	.0021	.0022	22.7
45.	661.320	.330	.0024	.0019	26.1
50.	734.800	.300	.0026	.0016	29.5
55.	808.280	.270	.0030	.0014	31.8
60.	881.760	.250	.0032	.0012	34.1
65.	955.240	.230	.0034	.0010	36.4
70.	1028.720	.210	.0036	.0007	38.6
75.	1102.200	.200	.0036	.0007	38.6
80.	1175.680	.180	.0036	.0007	38.6
85.	1249.160	.170	.0036	.0005	40.9

POROSITY DATA FOR SAMPLE K 4-1201.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0040	.0053	43.2
100.	1469.600	.150	.0041	.0052	44.3
110.	1616.560	.140	.0043	.0051	45.5
120.	1763.520	.130	.0043	.0051	45.5
130.	1910.480	.120	.0045	.0049	47.7
140.	2057.440	.110	.0045	.0049	47.7
150.	2204.400	.100	.0047	.0047	50.0
160.	2351.360	.088	.0048	.0046	51.1
170.	2498.320	.083	.0050	.0044	53.4
180.	2645.280	.079	.0051	.0043	54.5
190.	2792.240	.075	.0051	.0043	54.5
200.	2939.200	.068	.0053	.0040	56.8
220.	3233.120	.062	.0055	.0038	59.1
240.	3527.040	.057	.0055	.0038	59.1
260.	3820.960	.053	.0056	.0037	60.2
280.	4114.880	.050	.0057	.0036	61.4
300.	4408.800	.045	.0061	.0033	64.8
320.	4702.720	.041	.0063	.0031	67.0
340.	5290.560	.038	.0064	.0030	68.2
360.	5731.440	.035	.0065	.0029	69.3
380.	6172.320	.033	.0066	.0028	70.5
400.	6613.200	.030	.0068	.0026	72.7
420.	7201.040	.028	.0070	.0023	75.0
440.	7494.960	.027	.0070	.0023	75.0
460.	7935.840	.025	.0074	.0019	79.5
480.	8670.640	.024	.0077	.0017	81.8
500.	8964.560	.023	.0077	.0017	81.8
520.	9405.440	.021	.0080	.0014	85.2
540.	10287.200	.020	.0082	.0012	87.5
560.	10875.040	.019	.0084	.0010	89.8
580.	11315.920	.019	.0084	.0010	89.8
600.	11756.800	.018	.0087	.0006	93.2
630.	12197.680	.017	.0087	.0006	93.2
660.	12638.560	.017	.0089	.0004	95.5
700.	13226.400	.016	.0089	.0004	95.5
750.	13667.280	.016	.0094	.0000	100.0
800.	13961.200	.014	.0094	.0000	100.0
1000.	14696.000				

POROSITY DATA FOR SAMPLE K 4-1221.

CODE NUMBER 25
PORE VOLUME .021 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0211	0.0
2.	29.392	7.500	.0012	.0200	5.6
3.	44.088	5.000	.0012	.0200	5.6
4.	58.784	3.700	.0014	.0198	6.4
5.	73.480	3.000	.0014	.0198	6.4
6.	88.176	2.500	.0014	.0198	6.4
7.	102.872	2.100	.0015	.0196	7.2
8.	117.568	1.900	.0015	.0196	7.2
9.	132.264	1.600	.0015	.0196	7.2
10.	146.960	1.500	.0015	.0196	7.2
11.	161.656	1.400	.0019	.0193	8.8
12.	176.352	1.300	.0024	.0188	11.2
13.	191.048	1.200	.0032	.0179	15.2
14.	205.744	1.100	.0034	.0178	16.0
15.	220.440	1.000	.0036	.0176	16.8
16.	235.136	.930	.0037	.0174	17.6
17.	243.832	.880	.0042	.0169	20.0
18.	264.528	.830	.0049	.0162	23.2
19.	279.224	.790	.0051	.0161	24.0
20.	293.920	.750	.0054	.0157	25.6
25.	367.400	.600	.0054	.0157	25.6
30.	440.880	.500	.0054	.0157	25.6
35.	514.360	.430	.0058	.0154	27.2
40.	587.840	.370	.0061	.0151	28.8
45.	661.320	.330	.0066	.0145	31.2
50.	734.800	.300	.0071	.0140	33.6
55.	808.280	.270	.0074	.0137	35.2
60.	881.760	.250	.0078	.0134	36.8
65.	955.240	.230	.0081	.0130	38.4
70.	1029.720	.210	.0085	.0127	40.0
75.	1102.200	.200	.0090	.0122	42.4
80.	1175.680	.190	.0095	.0117	44.8
85.	1243.160	.170	.0096	.0115	45.6

POROSITY DATA FOR SAMPLE K 4-1221.

PRESSURE ATM	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0098	.0113	46.4
100.	1469.600	.150	.0101	.0110	48.0
110.	1616.560	.140	.0101	.0110	48.0
120.	1763.520	.130	.0103	.0109	48.8
130.	1910.480	.120	.0108	.0103	51.2
140.	2057.440	.110	.0112	.0100	52.8
150.	2204.400	.100	.0115	.0096	54.4
170.	2498.320	.088	.0117	.0095	55.2
190.	2645.280	.083	.0117	.0095	55.2
190.	2792.240	.079	.0120	.0091	56.8
200.	2939.200	.075	.0120	.0091	56.8
220.	3233.120	.068	.0125	.0086	59.2
240.	3527.040	.062	.0132	.0079	62.4
260.	3820.960	.057	.0132	.0079	62.4
280.	4114.880	.053	.0134	.0078	63.2
300.	4408.800	.050	.0135	.0076	64.0
330.	4849.680	.045	.0139	.0073	65.6
360.	5290.560	.041	.0145	.0066	68.8
390.	5731.440	.038	.0152	.0059	72.0
420.	6172.320	.035	.0152	.0059	72.0
450.	6613.200	.033	.0156	.0056	73.6
480.	7201.040	.030	.0159	.0052	75.2
510.	7494.960	.029	.0166	.0046	78.4
540.	7935.840	.027	.0169	.0042	80.0
580.	8670.640	.025	.0173	.0039	81.6
610.	8964.560	.024	.0173	.0039	81.6
640.	9405.440	.023	.0179	.0032	84.8
680.	10287.200	.021	.0183	.0029	86.4
740.	10875.040	.020	.0186	.0025	88.0
770.	11315.920	.019	.0186	.0025	88.0
800.	11756.800	.019	.0193	.0019	91.2
830.	12197.680	.018	.0196	.0015	92.8
860.	12638.560	.017	.0200	.0012	94.4
900.	13226.400	.017	.0200	.0012	94.4
930.	13667.280	.016	.0200	.0012	94.4
960.	13961.200	.016	.0206	.0005	97.6
1000.	14696.000	.014	.0211	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1241.

SAMPLE NUMBER - 27
DRY VOLUME .809 CC/G

PRESSURE ATM	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0094	.0
2.	29.392	7.500	.0009	.0085	9.7
3.	44.088	5.000	.0009	.0085	9.7
4.	58.784	3.700	.0010	.0084	11.1
5.	73.480	3.000	.0010	.0084	11.1
6.	88.176	2.500	.0010	.0084	11.1
7.	102.872	2.100	.0010	.0084	11.1
8.	117.568	1.800	.0010	.0084	11.1
9.	132.264	1.600	.0010	.0084	11.1
10.	146.960	1.500	.0012	.0082	12.5
11.	161.656	1.400	.0012	.0082	12.5
12.	176.352	1.300	.0012	.0082	12.5
13.	191.048	1.200	.0012	.0082	12.5
14.	205.744	1.100	.0012	.0082	12.5
15.	220.440	1.000	.0012	.0082	12.5
16.	235.136	.930	.0012	.0082	12.5
17.	249.832	.880	.0012	.0082	12.5
18.	264.528	.830	.0012	.0082	12.5
19.	279.224	.790	.0012	.0082	12.5
20.	293.920	.750	.0012	.0082	12.5
25.	367.400	.600	.0012	.0082	12.5
30.	440.880	.500	.0012	.0082	12.5
35.	514.360	.430	.0014	.0080	15.3
40.	587.840	.370	.0018	.0076	19.4
45.	661.320	.330	.0021	.0073	22.2
50.	734.800	.300	.0024	.0071	25.0
55.	808.280	.270	.0025	.0069	26.4
60.	881.760	.250	.0026	.0068	27.8
65.	955.240	.230	.0029	.0065	30.6
70.	1028.720	.210	.0031	.0063	33.3
75.	1102.200	.200	.0031	.0063	33.3
80.	1175.680	.180	.0031	.0063	33.3
85.	1249.160	.170	.0033	.0061	34.7

POROSITY DATA FOR SAMPLE K 4-1241.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1323.640	.160	.0034	.0060	36.1
100.	1469.600	.150	.0037	.0058	38.9
110.	1616.560	.140	.0039	.0055	41.7
120.	1763.520	.130	.0039	.0055	41.7
130.	1910.480	.120	.0041	.0054	43.1
140.	2057.440	.110	.0041	.0054	43.1
150.	2204.400	.100	.0043	.0051	45.8
170.	2498.320	.085	.0046	.0048	48.6
180.	2645.280	.083	.0046	.0048	48.6
190.	2792.240	.079	.0046	.0048	48.6
200.	2939.200	.075	.0050	.0044	52.8
220.	3233.120	.068	.0050	.0044	52.8
240.	3527.040	.062	.0052	.0042	55.6
260.	3820.960	.057	.0054	.0041	56.9
280.	4114.880	.053	.0055	.0039	58.3
300.	4408.800	.050	.0055	.0039	58.3
350.	4843.680	.045	.0059	.0035	62.5
360.	5290.560	.041	.0063	.0031	66.7
390.	5731.440	.038	.0064	.0030	68.1
420.	6172.320	.035	.0064	.0030	68.1
450.	6613.200	.033	.0067	.0027	70.8
490.	7201.040	.030	.0068	.0026	72.2
510.	7494.960	.029	.0071	.0024	75.0
540.	7935.840	.027	.0073	.0021	77.8
580.	8670.640	.025	.0076	.0018	80.6
610.	8964.560	.024	.0076	.0018	80.6
640.	9405.440	.023	.0078	.0016	83.3
700.	10267.200	.021	.0081	.0013	86.1
740.	10875.040	.020	.0084	.0010	88.9
770.	11315.920	.019	.0085	.0009	90.3
800.	11756.800	.019	.0085	.0009	90.3
830.	12197.680	.018	.0088	.0007	93.1
860.	12638.560	.017	.0090	.0004	95.8
900.	13226.400	.017	.0090	.0004	95.8
930.	13667.280	.016	.0093	.0001	98.6
950.	13961.200	.016	.0093	.0001	98.6
1000.	14636.000	.014	.0094	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1260.

SEQUENCE NUMBER 29
PORE VOLUME .022 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0222	.0
2.	29.392	7.500	.0010	.0211	4.7
3.	44.088	5.000	.0010	.0211	4.7
4.	58.784	3.700	.0012	.0210	5.3
5.	73.480	3.000	.0012	.0210	5.3
6.	88.176	2.500	.0012	.0210	5.3
7.	102.872	2.100	.0017	.0204	7.7
8.	117.568	1.800	.0018	.0203	8.3
9.	132.264	1.600	.0025	.0197	11.2
10.	146.960	1.500	.0029	.0193	13.0
11.	161.656	1.400	.0031	.0190	14.2
12.	176.352	1.300	.0037	.0185	16.6
13.	191.048	1.200	.0042	.0180	18.9
14.	205.744	1.100	.0046	.0176	20.7
15.	220.440	1.000	.0047	.0174	21.3
16.	235.136	.930	.0051	.0170	23.1
17.	249.832	.880	.0052	.0169	23.7
18.	264.528	.830	.0058	.0164	26.0
19.	279.224	.790	.0059	.0163	26.6
20.	293.920	.750	.0063	.0159	28.4
25.	367.400	.600	.0063	.0159	28.4
30.	440.880	.500	.0063	.0159	28.4
35.	514.360	.430	.0067	.0155	30.2
40.	587.840	.370	.0071	.0151	32.0
45.	661.320	.330	.0080	.0142	36.1
50.	734.800	.300	.0089	.0132	40.2
55.	808.280	.270	.0092	.0130	41.4
60.	881.760	.250	.0094	.0127	42.6
65.	955.240	.230	.0100	.0122	45.0
70.	1028.720	.210	.0105	.0117	47.3
75.	1102.200	.200	.0107	.0114	48.5
80.	1175.680	.180	.0110	.0111	49.7
85.	1249.160	.170	.0114	.0107	51.5

POROSITY DATA FOR SAMPLE K 4-1260.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.150	.0118	.0104	53.3
100.	1469.600	.150	.0121	.0101	54.4
110.	1616.560	.140	.0126	.0096	56.8
120.	1763.520	.130	.0126	.0096	56.8
130.	1910.480	.120	.0131	.0090	59.2
140.	2057.440	.110	.0134	.0088	60.4
150.	2204.400	.100	.0134	.0088	60.4
170.	2498.320	.098	.0136	.0085	61.5
180.	2645.280	.083	.0138	.0084	62.1
190.	2792.240	.079	.0139	.0083	62.7
200.	2939.200	.075	.0142	.0080	63.9
220.	3233.120	.068	.0144	.0077	65.1
240.	3527.040	.062	.0152	.0069	68.6
260.	3820.960	.057	.0155	.0067	69.8
280.	4114.880	.053	.0156	.0066	70.4
300.	4408.800	.050	.0157	.0064	71.0
330.	4849.680	.045	.0160	.0062	72.2
360.	5290.560	.041	.0163	.0059	73.4
390.	5731.440	.038	.0170	.0051	76.9
420.	6172.320	.035	.0170	.0051	76.9
450.	6613.200	.033	.0176	.0046	79.3
480.	7201.040	.030	.0181	.0041	81.7
510.	7494.960	.029	.0181	.0041	81.7
540.	7935.840	.027	.0185	.0037	83.4
580.	8670.640	.025	.0186	.0035	84.0
610.	8964.560	.024	.0189	.0033	85.2
640.	9405.440	.023	.0193	.0029	87.0
700.	10287.200	.021	.0201	.0021	90.5
740.	10875.040	.020	.0203	.0018	91.7
770.	11315.920	.019	.0203	.0018	91.7
800.	11756.800	.019	.0204	.0017	92.3
830.	12197.680	.018	.0208	.0013	94.1
860.	12638.560	.017	.0211	.0010	95.3
900.	13226.400	.017	.0214	.0008	96.4
930.	13667.280	.016	.0218	.0004	98.2
960.	13961.200	.016	.0218	.0004	98.2
1000.	14695.000	.014	.0222	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1300.

SEQUENCE NUMBER 33
PORE VOLUME .021 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0211	.0
2.	29.392	7.500	.0007	.0204	3.2
3.	44.088	5.000	.0008	.0204	3.6
4.	58.784	3.700	.0008	.0203	4.0
5.	73.480	3.000	.0015	.0196	7.1
6.	88.176	2.500	.0018	.0193	8.7
7.	102.872	2.100	.0025	.0186	11.9
8.	117.568	1.800	.0030	.0181	14.3
9.	132.264	1.600	.0034	.0178	15.9
10.	146.960	1.500	.0039	.0173	18.3
11.	161.656	1.400	.0044	.0168	20.6
12.	176.352	1.300	.0049	.0163	23.0
13.	191.048	1.200	.0052	.0159	24.6
14.	205.744	1.100	.0057	.0154	27.0
15.	220.440	1.000	.0062	.0149	29.4
16.	235.136	.930	.0067	.0144	31.7
17.	249.832	.880	.0070	.0141	33.3
18.	264.528	.830	.0075	.0136	35.7
19.	279.224	.790	.0079	.0132	37.3
20.	293.920	.750	.0082	.0129	38.9
25.	367.400	.600	.0083	.0128	39.3
30.	440.880	.500	.0084	.0127	39.7
35.	514.360	.430	.0092	.0119	43.7
40.	587.840	.370	.0101	.0111	47.6
45.	661.320	.330	.0108	.0103	51.2
50.	734.800	.300	.0116	.0096	54.8
55.	808.280	.270	.0121	.0090	57.1
60.	881.760	.250	.0126	.0085	59.5
65.	955.240	.230	.0129	.0082	61.1
70.	1028.720	.210	.0132	.0079	62.7
75.	1102.200	.200	.0135	.0076	63.9
80.	1175.680	.180	.0137	.0074	65.1
85.	1241.160	.170	.0139	.0072	65.9

POROSITY DATA FOR SAMPLE K 4-1300.

PRESSURE LB/SQ	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1323.640	.160	.0141	.0070	66.7
100.	1469.600	.150	.0142	.0069	67.5
110.	1616.560	.140	.0146	.0065	69.0
120.	1763.520	.130	.0150	.0061	71.0
130.	1910.480	.120	.0151	.0060	71.4
140.	2057.440	.110	.0152	.0059	71.8
150.	2204.400	.100	.0154	.0057	73.0
160.	2351.320	.093	.0158	.0054	74.6
170.	2498.280	.083	.0159	.0052	75.4
180.	2792.240	.079	.0161	.0050	76.2
200.	2939.200	.075	.0163	.0049	77.0
220.	3233.120	.068	.0166	.0045	78.6
240.	3527.040	.062	.0167	.0044	79.0
260.	3820.960	.057	.0168	.0043	79.8
280.	4114.880	.053	.0172	.0039	81.3
300.	4408.800	.050	.0174	.0037	82.5
330.	4849.680	.045	.0175	.0036	82.9
360.	5290.560	.041	.0176	.0035	83.3
390.	5731.440	.038	.0178	.0033	84.5
420.	6172.320	.035	.0183	.0028	86.5
450.	6613.200	.033	.0183	.0028	86.9
480.	7201.040	.030	.0184	.0027	87.3
510.	7494.960	.029	.0186	.0025	88.1
540.	7935.840	.027	.0188	.0023	88.9
570.	8670.640	.025	.0191	.0020	90.5
610.	8964.560	.024	.0191	.0020	90.5
640.	9405.440	.023	.0193	.0018	91.3
690.	10287.200	.021	.0196	.0015	92.9
740.	10875.040	.020	.0198	.0013	93.7
770.	11315.920	.019	.0199	.0012	94.4
800.	11756.800	.019	.0201	.0010	95.2
830.	12197.680	.018	.0203	.0008	96.0
860.	12638.560	.017	.0204	.0007	96.8
900.	13226.400	.017	.0205	.0006	97.2
930.	13667.280	.016	.0206	.0005	97.6
960.	13961.200	.016	.0207	.0004	96.0
1000.	14635.000	.014	.0211	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1319.

SEQUENCE NUMBER 30
PORE VOLUME .034 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0339	.0
2.	29.392	7.500	.0009	.0330	2.5
3.	44.088	5.000	.0017	.0322	5.0
4.	58.784	3.700	.0027	.0312	8.0
5.	73.480	3.000	.0038	.0301	11.2
6.	88.176	2.500	.0049	.0290	14.4
7.	102.872	2.100	.0059	.0280	17.4
8.	117.568	1.800	.0067	.0271	19.9
9.	132.264	1.600	.0076	.0263	22.4
10.	146.960	1.500	.0086	.0253	25.4
11.	161.656	1.400	.0097	.0242	28.6
12.	176.352	1.300	.0103	.0236	30.3
13.	191.048	1.200	.0105	.0234	30.8
14.	205.744	1.100	.0121	.0217	35.8
15.	220.440	1.000	.0135	.0204	39.8
16.	235.136	.930	.0143	.0196	42.3
17.	249.832	.880	.0152	.0187	44.8
18.	264.528	.830	.0158	.0180	46.8
19.	279.224	.790	.0163	.0175	48.3
20.	293.920	.750	.0169	.0170	49.8
25.	367.400	.600	.0173	.0166	51.0
30.	440.880	.500	.0177	.0162	52.2
35.	514.360	.430	.0181	.0158	53.5
40.	587.840	.370	.0185	.0153	54.7
45.	661.320	.330	.0202	.0137	59.7
50.	734.800	.300	.0219	.0120	64.7
55.	808.280	.270	.0222	.0117	65.4
60.	881.760	.250	.0224	.0115	66.2
65.	955.240	.230	.0233	.0106	68.7
70.	1028.720	.210	.0241	.0098	71.1
75.	1102.200	.200	.0245	.0094	72.4
80.	1175.680	.180	.0249	.0089	73.6
85.	1249.160	.170	.0249	.0089	73.6

POROSITY DATA FOR SAMPLE K 4-1319.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0255	.0084	75.1
100.	1469.600	.150	.0256	.0083	75.6
110.	1616.560	.140	.0260	.0079	76.6
120.	1763.520	.130	.0264	.0075	77.9
130.	1910.480	.120	.0267	.0072	78.9
140.	2057.440	.110	.0270	.0069	79.6
150.	2204.400	.100	.0270	.0069	79.6
170.	2498.320	.088	.0273	.0066	80.6
180.	2645.280	.083	.0277	.0062	81.8
190.	2792.240	.079	.0280	.0059	82.6
200.	2939.200	.075	.0280	.0059	82.6
220.	3233.120	.068	.0282	.0056	83.3
240.	3527.040	.062	.0287	.0052	84.6
260.	3820.960	.057	.0288	.0051	85.1
280.	4114.880	.053	.0292	.0046	86.3
300.	4408.800	.050	.0295	.0044	87.1
330.	4849.680	.045	.0295	.0044	87.1
360.	5290.560	.041	.0298	.0040	88.1
390.	5731.440	.038	.0302	.0037	89.1
420.	6172.320	.035	.0303	.0035	89.6
450.	6613.200	.033	.0307	.0032	90.5
480.	7201.040	.030	.0309	.0029	91.3
510.	7494.960	.029	.0311	.0028	91.8
540.	7935.840	.027	.0313	.0026	92.3
570.	8670.640	.025	.0314	.0024	92.8
610.	9364.560	.024	.0316	.0023	93.3
640.	9805.440	.023	.0321	.0018	94.8
700.	10287.200	.021	.0324	.0015	95.5
740.	10875.040	.020	.0325	.0013	96.0
770.	11315.920	.019	.0327	.0012	96.5
800.	11756.800	.019	.0330	.0009	97.3
830.	12197.680	.018	.0330	.0009	97.5
860.	12638.560	.017	.0331	.0008	97.8
900.	13226.400	.017	.0334	.0005	98.5
930.	13667.280	.016	.0335	.0003	99.0
960.	13961.200	.016	.0338	.0001	99.8
1000.	14646.000	.014	.0339	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1339.

SEQUENCE NUMBER 37
PORE VOLUME .030 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0296	.0
2.	29.392	7.500	.0008	.0289	2.7
3.	44.088	5.000	.0009	.0287	3.0
4.	58.784	3.700	.0012	.0284	4.1
5.	73.480	3.000	.0028	.0268	9.5
6.	88.176	2.500	.0030	.0266	10.1
7.	102.872	2.100	.0030	.0266	10.1
8.	117.568	1.800	.0036	.0260	12.2
9.	132.264	1.600	.0040	.0256	13.5
10.	146.960	1.500	.0045	.0251	15.2
11.	161.656	1.400	.0052	.0244	17.6
12.	176.352	1.300	.0058	.0238	19.6
13.	191.048	1.200	.0064	.0232	21.6
14.	205.744	1.100	.0070	.0226	23.6
15.	220.440	1.000	.0075	.0221	25.3
16.	235.136	.930	.0080	.0216	27.0
17.	249.832	.880	.0086	.0210	29.1
18.	264.528	.830	.0090	.0206	30.4
19.	279.224	.790	.0094	.0202	31.8
20.	293.920	.750	.0098	.0198	33.1
25.	367.400	.600	.0099	.0197	33.4
30.	440.880	.500	.0100	.0196	33.8
35.	514.360	.430	.0108	.0188	36.5
40.	587.840	.370	.0116	.0180	39.2
45.	661.320	.330	.0120	.0176	40.5
50.	734.800	.300	.0124	.0172	41.9
55.	808.280	.270	.0133	.0163	44.9
60.	881.760	.250	.0142	.0154	48.0
65.	955.240	.230	.0151	.0145	51.0
70.	1029.720	.210	.0160	.0136	54.1
75.	1102.200	.200	.0164	.0132	55.4
80.	1175.680	.180	.0168	.0128	56.8
85.	1249.160	.170	.0182	.0114	61.5

POROSITY DATA FOR SAMPLE K 4-1339.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0194	.0102	65.5
100.	1469.600	.150	.0204	.0092	68.9
110.	1616.560	.140	.0210	.0086	70.9
120.	1763.520	.130	.0212	.0084	71.6
130.	1910.480	.120	.0214	.0082	72.3
140.	2057.440	.110	.0220	.0076	74.3
150.	2204.400	.100	.0222	.0074	75.0
160.	2498.320	.088	.0222	.0074	75.0
170.	2645.280	.083	.0222	.0074	75.0
180.	2792.240	.079	.0229	.0067	77.4
190.	2939.200	.075	.0232	.0064	78.4
200.	3233.120	.068	.0238	.0058	80.4
210.	3527.040	.062	.0238	.0058	80.4
220.	3820.960	.057	.0239	.0057	80.7
230.	4114.880	.053	.0240	.0056	81.1
240.	4408.800	.050	.0242	.0054	81.8
250.	4543.680	.045	.0246	.0050	83.1
260.	5290.560	.041	.0252	.0044	85.1
270.	5731.440	.038	.0252	.0044	85.1
280.	6172.320	.035	.0254	.0042	85.8
290.	6613.200	.033	.0258	.0038	87.2
300.	7201.040	.030	.0261	.0035	88.2
310.	7494.960	.029	.0262	.0034	88.5
320.	7935.840	.027	.0264	.0032	89.2
330.	8670.640	.025	.0270	.0026	91.2
340.	8964.560	.024	.0270	.0026	91.2
350.	9405.440	.023	.0272	.0024	91.9
360.	10287.200	.021	.0277	.0019	93.6
370.	10875.040	.020	.0277	.0019	93.6
380.	11315.920	.019	.0279	.0017	94.3
390.	11756.800	.019	.0279	.0017	94.3
400.	12197.680	.018	.0284	.0012	95.9
410.	12638.560	.017	.0284	.0012	95.9
420.	13226.400	.017	.0292	.0004	98.6
430.	13667.280	.016	.0294	.0002	99.3
440.	13961.200	.016	.0294	.0002	99.3
1000.	14635.000	.014	.0296	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1359.

SEQUENCE NUMBER 39
PORE VOLUME .009 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0086	0.0
2.	29.392	7.500	.0008	.0078	8.8
3.	44.088	5.000	.0008	.0078	8.8
4.	58.784	3.700	.0009	.0077	10.0
5.	73.480	3.000	.0009	.0077	10.0
6.	88.176	2.500	.0009	.0077	10.0
7.	102.872	2.100	.0009	.0077	10.0
8.	117.568	1.800	.0009	.0077	10.0
9.	132.264	1.600	.0009	.0077	10.0
10.	146.960	1.500	.0009	.0077	10.0
11.	161.656	1.400	.0010	.0076	11.3
12.	176.352	1.300	.0010	.0076	11.3
13.	191.048	1.200	.0010	.0076	11.3
14.	205.744	1.100	.0010	.0076	11.3
15.	220.440	1.000	.0010	.0076	11.3
16.	235.136	.930	.0010	.0076	11.3
17.	249.832	.880	.0010	.0076	11.3
18.	264.528	.830	.0011	.0075	12.5
19.	273.224	.790	.0011	.0075	12.5
20.	293.920	.750	.0013	.0073	15.0
25.	367.400	.600	.0013	.0073	15.0
30.	440.880	.500	.0013	.0073	15.0
35.	514.360	.430	.0015	.0071	17.5
40.	587.840	.370	.0017	.0069	20.0
45.	661.320	.330	.0018	.0068	21.3
50.	734.800	.300	.0019	.0067	22.5
55.	808.280	.270	.0022	.0065	25.0
60.	881.760	.250	.0024	.0062	27.5
65.	955.240	.230	.0026	.0060	30.0
70.	1028.720	.210	.0028	.0058	32.5
75.	1102.200	.200	.0029	.0057	33.8
80.	1175.680	.180	.0030	.0056	35.0
85.	1249.160	.170	.0031	.0055	36.3

POROSITY DATA FOR SAMPLE K 4-1359.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0032	.0054	37.5
100.	1469.600	.150	.0033	.0053	38.8
110.	1616.560	.140	.0034	.0052	40.0
120.	1763.520	.130	.0038	.0048	43.8
130.	1919.480	.120	.0038	.0048	43.8
140.	2057.440	.110	.0041	.0045	47.5
150.	2204.400	.100	.0041	.0045	47.5
170.	2499.320	.088	.0042	.0044	48.8
180.	2646.280	.083	.0043	.0043	50.0
190.	2732.240	.079	.0043	.0043	50.0
200.	2939.200	.075	.0045	.0041	52.5
220.	3233.120	.068	.0047	.0039	55.0
240.	3527.040	.062	.0048	.0038	56.3
260.	3820.960	.057	.0049	.0037	57.5
280.	4114.880	.053	.0052	.0034	60.0
300.	4408.800	.050	.0054	.0032	62.5
330.	4849.680	.045	.0055	.0031	63.8
360.	5290.560	.041	.0056	.0030	65.0
390.	5731.440	.038	.0058	.0028	67.5
420.	6172.320	.035	.0060	.0026	70.0
450.	6613.200	.033	.0060	.0026	70.0
480.	7201.040	.030	.0065	.0022	75.0
510.	7494.960	.029	.0065	.0022	75.0
540.	7935.840	.027	.0067	.0019	77.5
590.	8670.640	.025	.0069	.0017	80.0
610.	8964.560	.024	.0070	.0016	81.3
640.	9405.440	.023	.0073	.0013	85.0
700.	10287.200	.021	.0075	.0011	87.5
740.	10875.040	.020	.0076	.0010	88.3
770.	11315.920	.019	.0078	.0008	91.3
800.	11756.800	.019	.0078	.0008	91.3
830.	12197.680	.018	.0080	.0006	92.5
860.	12638.560	.017	.0082	.0004	95.0
900.	13226.400	.017	.0083	.0003	96.2
930.	13667.280	.016	.0083	.0003	96.2
960.	13961.200	.016	.0086	.0000	100.0
1000.	14696.000	.014	.0086	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1379.

FOOTNOTE NUMBER 41
PORE VOLUME .011 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0115	.0
2.	29.392	7.500	.0007	.0108	6.0
3.	44.088	5.000	.0008	.0107	6.9
4.	58.784	3.700	.0008	.0107	6.9
5.	73.480	3.000	.0009	.0106	7.8
6.	88.176	2.500	.0009	.0106	7.8
7.	102.872	2.100	.0009	.0106	7.8
8.	117.568	1.800	.0009	.0106	7.8
9.	132.264	1.600	.0009	.0106	7.8
10.	146.960	1.500	.0010	.0105	8.6
11.	161.656	1.400	.0012	.0103	10.3
12.	176.352	1.300	.0013	.0102	11.2
13.	191.048	1.200	.0016	.0099	13.8
14.	205.744	1.100	.0020	.0095	17.2
15.	220.440	1.000	.0020	.0095	17.2
16.	235.136	.930	.0022	.0093	19.0
17.	249.832	.880	.0023	.0092	19.8
18.	264.528	.830	.0023	.0092	19.8
19.	279.224	.790	.0026	.0089	22.4
20.	293.920	.750	.0026	.0089	22.4
25.	367.400	.600	.0027	.0088	23.3
30.	440.880	.500	.0028	.0087	24.1
35.	514.360	.430	.0031	.0084	26.7
40.	587.840	.370	.0034	.0081	29.3
45.	661.320	.330	.0038	.0077	32.8
50.	734.800	.300	.0042	.0073	36.2
55.	808.280	.270	.0043	.0071	37.9
60.	881.760	.250	.0045	.0069	39.7
65.	955.240	.230	.0047	.0067	41.4
70.	1028.720	.210	.0049	.0065	43.1
75.	1102.200	.200	.0050	.0064	44.0
80.	1175.680	.180	.0051	.0063	44.8
85.	1249.160	.170	.0053	.0061	46.6

POROSITY DATA FOR SAMPLE K 4-1379.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0055	.0059	48.3
100.	1469.600	.150	.0056	.0058	49.1
110.	1616.560	.140	.0058	.0056	50.9
120.	1763.520	.130	.0058	.0056	50.9
130.	1910.480	.120	.0059	.0055	51.7
140.	2057.440	.110	.0061	.0053	53.4
150.	2204.400	.100	.0063	.0051	55.2
160.	2351.360	.095	.0064	.0050	56.0
170.	2498.320	.088	.0065	.0049	56.9
180.	2645.280	.083	.0067	.0047	58.6
190.	2792.240	.079	.0069	.0045	60.3
200.	2939.200	.075	.0070	.0044	61.2
220.	3233.120	.068	.0072	.0042	62.9
240.	3527.040	.062	.0072	.0042	62.9
260.	3820.960	.057	.0075	.0040	65.5
280.	4114.880	.053	.0077	.0038	67.2
300.	4408.800	.050	.0079	.0036	69.0
330.	4849.680	.045	.0081	.0034	70.7
360.	5290.560	.041	.0082	.0033	71.6
390.	5731.440	.038	.0086	.0029	75.0
420.	6172.320	.035	.0088	.0027	76.7
450.	6613.200	.033	.0090	.0025	78.4
480.	7201.040	.030	.0090	.0025	78.4
510.	7494.960	.029	.0093	.0022	81.0
540.	7935.840	.027	.0097	.0018	84.5
570.	8670.640	.025	.0097	.0018	84.5
610.	8964.560	.024	.0100	.0015	87.1
640.	9605.440	.023	.0101	.0014	87.9
700.	10297.200	.021	.0103	.0012	89.7
740.	10875.040	.020	.0105	.0010	91.4
770.	11315.920	.019	.0107	.0008	93.1
800.	11756.800	.019	.0109	.0006	94.8
830.	12197.680	.018	.0111	.0004	96.6
860.	12638.560	.017	.0111	.0004	96.6
900.	13226.400	.017	.0114	.0001	99.1
930.	13667.280	.016	.0115	.0000	100.0
960.	13961.200	.016	.0115	.0000	100.0
1000.	14696.000	.014	.0115	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1399.

SEQUENCE NUMBER 43
PORE VOLUME .023 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.555	15.000	.0000	.0232	.0
2.	29.392	7.500	.0010	.0222	4.2
3.	44.038	5.000	.0010	.0222	4.2
4.	58.784	3.700	.0010	.0222	4.2
5.	73.440	3.000	.0017	.0215	7.4
6.	88.176	2.500	.0022	.0210	9.3
7.	102.872	2.100	.0026	.0206	11.2
8.	117.568	1.800	.0032	.0199	14.0
9.	132.264	1.600	.0039	.0193	16.7
10.	146.960	1.500	.0042	.0190	18.1
11.	161.656	1.400	.0043	.0189	18.6
12.	176.352	1.300	.0050	.0182	21.4
13.	191.048	1.200	.0054	.0178	23.3
14.	205.744	1.100	.0059	.0173	25.6
15.	220.440	1.000	.0065	.0167	27.9
16.	235.136	.930	.0068	.0164	29.3
17.	249.832	.880	.0073	.0159	31.6
18.	264.528	.830	.0078	.0154	33.5
19.	279.224	.790	.0082	.0150	35.3
20.	293.920	.750	.0084	.0148	36.3
25.	367.400	.600	.0084	.0148	36.3
30.	440.880	.500	.0084	.0148	36.3
35.	514.360	.430	.0085	.0147	36.7
40.	587.840	.370	.0086	.0146	37.2
45.	661.320	.330	.0099	.0133	42.8
50.	734.800	.300	.0113	.0119	48.8
55.	808.280	.270	.0118	.0114	50.7
60.	881.760	.250	.0121	.0111	52.1
65.	955.240	.230	.0124	.0108	53.5
70.	1028.720	.210	.0127	.0105	54.9
75.	1102.200	.200	.0132	.0100	56.7
80.	1175.680	.180	.0136	.0096	58.6
85.	1249.160	.170	.0138	.0094	59.5

POROSITY DATA FOR SAMPLE K 4-1399.

PRESSURE ATM.	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0140	.0092	60.5
100.	1463.600	.150	.0142	.0089	61.4
110.	1616.560	.140	.0147	.0085	63.3
120.	1763.520	.130	.0151	.0081	65.1
130.	1910.480	.120	.0151	.0081	65.1
140.	2057.440	.110	.0153	.0079	66.0
150.	2204.400	.100	.0155	.0077	67.0
160.	2498.320	.088	.0157	.0074	67.9
170.	2645.280	.083	.0162	.0070	69.8
180.	2792.240	.079	.0162	.0070	69.8
200.	2933.200	.075	.0164	.0068	70.7
220.	3233.120	.065	.0166	.0066	71.6
240.	3527.040	.062	.0170	.0061	73.5
260.	3820.960	.057	.0173	.0059	74.4
280.	4114.880	.053	.0175	.0057	75.3
300.	4408.800	.050	.0178	.0054	76.7
330.	4849.680	.045	.0181	.0051	78.1
360.	5290.560	.041	.0183	.0049	79.1
390.	5731.440	.038	.0185	.0046	80.0
420.	6172.320	.035	.0190	.0042	81.9
450.	6613.200	.033	.0192	.0040	82.8
480.	7201.040	.030	.0194	.0038	83.7
510.	7494.960	.029	.0196	.0036	84.7
540.	7935.840	.027	.0198	.0033	85.6
570.	8670.640	.025	.0203	.0029	87.4
610.	8964.560	.024	.0205	.0027	88.4
640.	9405.440	.023	.0207	.0025	89.3
700.	10287.200	.021	.0210	.0022	90.7
740.	10875.040	.020	.0215	.0017	92.6
770.	11315.920	.019	.0217	.0015	93.5
800.	11756.800	.019	.0218	.0014	94.0
830.	12197.680	.018	.0220	.0012	94.9
860.	12638.560	.017	.0222	.0010	95.8
900.	13226.400	.017	.0224	.0008	96.7
930.	13667.280	.016	.0226	.0005	97.7
960.	13961.200	.016	.0229	.0003	98.6
1000.	14695.000	.014	.0232	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1419.

SCOPE NUMBER 46
POR VOLUME .011 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0113	.0
2.	29.392	7.500	.0006	.0106	5.4
3.	44.088	5.000	.0006	.0106	5.4
4.	58.784	3.700	.0007	.0105	6.3
5.	73.480	3.000	.0007	.0105	6.3
6.	88.176	2.500	.0007	.0105	6.3
7.	102.872	2.100	.0007	.0105	6.3
8.	117.568	1.800	.0008	.0104	7.2
9.	132.264	1.600	.0008	.0104	7.2
10.	146.960	1.500	.0008	.0104	7.2
11.	161.656	1.400	.0009	.0103	8.1
12.	176.352	1.300	.0009	.0103	8.1
13.	191.168	1.200	.0009	.0103	8.1
14.	205.744	1.100	.0009	.0103	8.1
15.	220.440	1.000	.0009	.0103	8.1
16.	235.136	.930	.0010	.0102	9.0
17.	249.832	.880	.0011	.0101	9.9
18.	264.528	.830	.0014	.0098	12.6
19.	279.224	.790	.0016	.0096	14.4
20.	293.920	.750	.0018	.0094	16.2
25.	367.400	.600	.0018	.0094	16.2
30.	440.880	.500	.0018	.0094	16.2
35.	514.360	.430	.0020	.0092	18.0
40.	587.840	.370	.0022	.0090	19.8
45.	661.320	.330	.0025	.0087	22.5
50.	734.800	.300	.0028	.0084	25.2
55.	808.280	.270	.0033	.0079	29.7
60.	881.760	.250	.0039	.0074	34.2
65.	955.240	.230	.0040	.0073	35.1
70.	1028.720	.210	.0041	.0072	36.0
75.	1102.200	.200	.0042	.0071	36.9
80.	1175.680	.190	.0043	.0070	37.8
85.	1249.160	.170	.0045	.0068	39.6

POROSITY DATA FOR SAMPLE K 4-1419.

PRESSURE BARS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0047	.0066	41.4
100.	1469.600	.150	.0050	.0063	44.1
110.	1616.560	.140	.0051	.0062	45.0
120.	1763.520	.130	.0051	.0062	45.0
130.	1910.480	.120	.0052	.0061	45.9
140.	2057.440	.110	.0054	.0059	47.7
150.	2204.400	.100	.0056	.0057	49.5
170.	2498.320	.088	.0060	.0053	53.2
180.	2645.280	.083	.0061	.0052	54.1
190.	2792.240	.079	.0061	.0052	54.1
200.	2939.200	.075	.0061	.0052	54.1
220.	3233.120	.068	.0063	.0050	55.9
240.	3527.040	.062	.0064	.0049	56.8
260.	3820.960	.057	.0068	.0045	60.4
280.	4114.880	.053	.0070	.0043	62.2
300.	4408.800	.050	.0071	.0042	63.1
330.	4849.680	.045	.0072	.0041	64.0
360.	5290.560	.041	.0073	.0040	64.9
390.	5731.440	.038	.0079	.0033	70.3
420.	6172.320	.035	.0079	.0033	70.3
450.	6613.200	.033	.0080	.0032	71.2
480.	7201.040	.030	.0083	.0029	73.9
510.	7494.960	.029	.0083	.0029	73.9
540.	7935.840	.027	.0087	.0025	77.5
570.	8670.640	.025	.0089	.0023	79.3
610.	8964.560	.024	.0089	.0023	79.3
640.	9405.440	.023	.0093	.0019	82.9
700.	10287.200	.021	.0096	.0016	85.6
740.	10875.040	.020	.0099	.0013	88.3
770.	11315.920	.019	.0101	.0011	90.1
800.	11756.800	.019	.0103	.0009	91.9
830.	12197.680	.018	.0104	.0008	92.8
860.	12638.560	.017	.0106	.0006	94.6
900.	13226.400	.017	.0107	.0005	95.5
930.	13667.280	.016	.0110	.0003	97.3
960.	13961.200	.016	.0110	.0003	97.3
1000.	14696.000	.014	.0113	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1436.

SPECIMEN NUMBER 47
PORE VOLUME .029 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0293	.0
2.	29.392	7.500	.0008	.0284	2.9
3.	44.088	5.000	.0009	.0284	3.2
4.	58.784	3.700	.0015	.0278	5.1
5.	73.480	3.000	.0022	.0271	7.4
6.	88.176	2.500	.0032	.0261	10.9
7.	102.872	2.100	.0037	.0256	12.5
8.	117.568	1.800	.0046	.0247	15.7
9.	132.264	1.600	.0051	.0242	17.3
10.	146.960	1.500	.0060	.0233	20.5
11.	161.656	1.400	.0073	.0220	25.0
12.	176.352	1.300	.0079	.0214	26.9
13.	191.048	1.200	.0084	.0208	28.8
14.	205.744	1.100	.0090	.0203	30.8
15.	220.440	1.000	.0094	.0199	32.1
16.	235.136	.930	.0099	.0194	33.7
17.	249.832	.880	.0105	.0188	35.9
18.	264.528	.830	.0114	.0179	38.8
19.	279.224	.790	.0117	.0176	40.1
20.	293.920	.750	.0122	.0171	41.7
25.	367.400	.600	.0122	.0171	41.7
30.	440.880	.500	.0122	.0171	41.7
35.	514.360	.430	.0131	.0161	44.9
40.	587.840	.370	.0141	.0152	48.1
45.	661.320	.330	.0150	.0143	51.3
50.	734.800	.300	.0160	.0133	54.5
55.	808.280	.270	.0167	.0126	57.1
60.	881.760	.250	.0175	.0118	59.6
65.	955.240	.230	.0178	.0115	60.9
70.	1028.720	.210	.0182	.0111	62.2
75.	1102.200	.200	.0188	.0105	64.1
80.	1175.680	.180	.0193	.0100	66.0
85.	1249.160	.170	.0196	.0097	67.0

POROSITY DATA FOR SAMPLE K 4-1436.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0199	.0094	67.9
100.	1469.600	.150	.0201	.0092	68.6
110.	1616.560	.140	.0203	.0090	69.2
120.	1763.520	.130	.0207	.0086	70.5
130.	1910.480	.120	.0209	.0084	71.5
140.	2057.440	.110	.0212	.0081	72.4
150.	2204.400	.100	.0214	.0079	73.1
170.	2498.320	.086	.0221	.0072	75.3
180.	2645.280	.083	.0223	.0070	76.0
190.	2792.240	.079	.0224	.0069	76.6
200.	2939.200	.075	.0227	.0066	77.6
220.	3233.120	.068	.0229	.0064	78.2
240.	3527.040	.062	.0234	.0059	79.8
260.	3820.960	.057	.0235	.0058	80.1
280.	4114.880	.053	.0238	.0055	81.1
300.	4408.800	.050	.0238	.0054	81.4
330.	4849.680	.045	.0243	.0050	83.0
360.	5290.560	.041	.0246	.0047	84.0
390.	5731.440	.038	.0248	.0045	84.6
420.	6172.320	.035	.0250	.0043	85.3
450.	6613.200	.033	.0255	.0038	87.2
480.	7201.040	.030	.0257	.0036	87.8
510.	7494.960	.029	.0257	.0036	87.8
540.	7935.840	.027	.0261	.0032	89.1
580.	8670.640	.025	.0265	.0028	90.4
610.	8964.560	.024	.0267	.0026	91.0
640.	9405.440	.023	.0268	.0025	91.3
700.	10287.200	.021	.0273	.0020	93.3
740.	10875.040	.020	.0276	.0017	94.2
770.	11315.920	.019	.0278	.0015	94.9
800.	11756.800	.019	.0279	.0014	95.2
830.	12197.680	.018	.0284	.0009	96.8
860.	12638.560	.017	.0284	.0009	96.8
900.	13225.400	.017	.0285	.0008	97.4
930.	13667.280	.016	.0287	.0006	98.1
960.	13961.200	.016	.0288	.0005	98.4
1000.	14696.000	.014	.0293	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1456.

[illegible]
PORE VOLUME .[illegible] CC/G

[illegible]	[illegible] PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.5[illegible]	15.000	.0000	.0330	.0
2.	23.3[illegible]	7.500	.0009	.0321	2.6
3.	44.038	5.000	.0021	.0309	6.3
4.	5[illegible].754	3.700	.0024	.0306	7.4
5.	73.450	3.000	.0030	.0300	9.0
6.	[illegible].176	2.500	.0037	.0293	11.1
7.	102.872	2.100	.0044	.0286	13.2
8.	117.568	1.800	.0052	.0278	15.9
9.	132.264	1.600	.0061	.0269	18.5
10.	146.360	1.500	.0070	.0260	21.2
11.	161.656	1.400	.0079	.0251	23.8
12.	176.352	1.300	.0086	.0244	25.9
13.	191.048	1.200	.0091	.0239	27.5
14.	205.744	1.100	.0100	.0230	30.2
15.	220.440	1.000	.0105	.0225	31.7
16.	235.136	.930	.0115	.0215	34.9
17.	249.832	.880	.0124	.0206	37.6
18.	264.528	.830	.0131	.0199	39.7
19.	279.224	.730	.0134	.0196	40.5
20.	293.920	.750	.0140	.0190	42.3
25.	367.400	.600	.0140	.0190	42.3
30.	440.880	.500	.0140	.0190	42.3
35.	514.360	.430	.0144	.0186	43.7
40.	587.840	.370	.0148	.0182	45.0
45.	661.320	.330	.0153	.0177	46.3
50.	734.800	.300	.0157	.0173	47.6
55.	808.280	.270	.0176	.0154	53.4
60.	881.760	.250	.0187	.0143	56.6
65.	955.240	.230	.0196	.0134	59.3
70.	1028.720	.210	.0204	.0126	61.9
75.	1102.200	.200	.0215	.0115	65.1
80.	1175.680	.180	.0225	.0105	68.3
85.	1249.160	.170	.0230	.0100	69.6

POROSITY DATA FOR SAMPLE K 4-1456.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0234	.0096	70.9
100.	1469.600	.150	.0236	.0094	71.4
110.	1616.560	.140	.0237	.0093	72.0
120.	1763.520	.130	.0239	.0091	72.5
130.	1910.480	.120	.0244	.0086	74.1
140.	2057.440	.110	.0248	.0082	75.1
150.	2204.400	.100	.0253	.0077	76.7
160.	2498.320	.088	.0254	.0076	77.0
180.	2645.280	.083	.0257	.0073	77.8
190.	2792.240	.079	.0260	.0070	78.8
200.	2939.200	.075	.0262	.0068	79.4
220.	3233.120	.065	.0263	.0067	79.6
240.	3527.040	.062	.0266	.0064	80.7
260.	3820.960	.057	.0270	.0060	81.7
280.	4114.880	.053	.0271	.0058	82.3
300.	4408.800	.050	.0277	.0053	83.9
330.	4849.680	.045	.0279	.0051	84.7
360.	5290.560	.041	.0284	.0046	86.0
390.	5731.440	.038	.0285	.0045	86.5
420.	6172.320	.035	.0287	.0043	87.0
450.	6613.200	.033	.0292	.0038	88.4
480.	7201.040	.030	.0293	.0037	88.9
510.	7494.960	.029	.0295	.0035	89.4
540.	7935.840	.027	.0299	.0031	90.5
590.	8670.640	.025	.0302	.0028	91.5
610.	8964.560	.024	.0304	.0026	92.1
640.	9405.440	.023	.0306	.0024	92.6
700.	10287.200	.021	.0310	.0020	93.9
740.	10875.040	.020	.0313	.0017	94.7
770.	11315.920	.019	.0316	.0014	95.8
800.	11756.800	.019	.0318	.0012	96.3
830.	12197.680	.018	.0318	.0012	96.3
860.	12833.560	.017	.0322	.0008	97.6
880.	13226.400	.017	.0324	.0006	98.1
950.	13667.280	.016	.0326	.0004	98.7
960.	13961.200	.016	.0328	.0002	99.5
1000.	14636.000	.014	.0330	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1476.

SAMPLE NUMBER 51
PORE VOLUME .031 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0311	.0
2.	29.392	7.500	.0007	.0304	2.2
3.	44.088	5.000	.0010	.0301	3.2
4.	58.784	3.700	.0020	.0291	6.3
5.	73.480	3.000	.0026	.0285	8.3
6.	88.176	2.500	.0036	.0275	11.7
7.	102.872	2.100	.0049	.0262	15.8
8.	117.568	1.800	.0051	.0260	16.5
9.	132.264	1.600	.0056	.0255	18.0
10.	146.960	1.500	.0064	.0247	20.6
11.	161.656	1.400	.0072	.0239	23.1
12.	176.352	1.300	.0079	.0232	25.5
13.	191.048	1.200	.0088	.0223	28.2
14.	205.744	1.100	.0094	.0217	30.3
15.	220.440	1.000	.0102	.0209	32.8
16.	235.136	.930	.0109	.0202	35.0
17.	249.832	.880	.0116	.0195	37.4
18.	264.528	.830	.0125	.0186	40.3
19.	279.224	.780	.0127	.0184	40.8
20.	293.920	.750	.0128	.0183	41.3
25.	367.400	.600	.0132	.0179	42.5
30.	440.880	.500	.0136	.0175	43.7
35.	514.360	.430	.0149	.0162	48.1
40.	587.840	.370	.0155	.0155	50.0
45.	661.320	.330	.0167	.0144	53.6
50.	734.800	.300	.0178	.0133	57.3
55.	808.280	.270	.0183	.0128	59.0
60.	881.760	.250	.0189	.0122	60.7
65.	955.240	.230	.0192	.0118	61.9
70.	1028.720	.210	.0196	.0115	63.1
75.	1102.200	.200	.0201	.0110	64.6
80.	1175.680	.180	.0205	.0106	66.0
85.	1249.160	.170	.0210	.0101	67.5

POROSITY DATA FOR SAMPLE K 4-1476.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0214	.0097	68.9
100.	1469.600	.150	.0217	.0094	69.7
110.	1616.560	.140	.0220	.0091	70.9
120.	1763.520	.130	.0224	.0087	72.1
130.	1910.480	.120	.0226	.0085	72.8
140.	2057.440	.110	.0229	.0082	73.8
150.	2204.400	.100	.0231	.0080	74.3
170.	2498.320	.088	.0232	.0078	74.8
180.	2645.280	.083	.0240	.0071	77.2
190.	2792.240	.079	.0242	.0069	77.7
200.	2939.200	.075	.0243	.0068	78.2
220.	3233.120	.065	.0247	.0064	79.4
240.	3527.040	.062	.0248	.0063	79.9
260.	3820.960	.057	.0252	.0059	81.1
280.	4114.880	.053	.0258	.0053	83.0
300.	4408.800	.050	.0258	.0053	83.0
330.	4849.680	.045	.0260	.0051	83.7
360.	5290.560	.041	.0263	.0048	84.7
390.	5731.440	.038	.0266	.0045	85.4
420.	6172.320	.035	.0269	.0042	86.7
450.	6613.200	.033	.0271	.0040	87.1
480.	7201.040	.030	.0275	.0036	88.3
510.	7494.960	.029	.0278	.0033	89.3
540.	7935.840	.027	.0279	.0032	89.8
590.	8670.640	.025	.0284	.0027	91.3
610.	8964.560	.024	.0284	.0027	91.3
640.	9405.440	.023	.0287	.0024	92.2
700.	10287.200	.021	.0291	.0020	93.4
740.	10875.040	.020	.0294	.0017	94.4
770.	11315.920	.019	.0296	.0015	95.1
800.	11756.800	.019	.0297	.0014	95.6
830.	12197.680	.018	.0300	.0011	96.6
860.	12638.560	.017	.0302	.0009	97.1
890.	13226.400	.017	.0305	.0006	96.1
930.	13667.280	.016	.0306	.0005	98.5
960.	13961.200	.016	.0308	.0003	99.0
1000.	14696.000	.014	.0311	.0000	100.0

POROSITY DATA FOR SAMPLE K 4-1495.

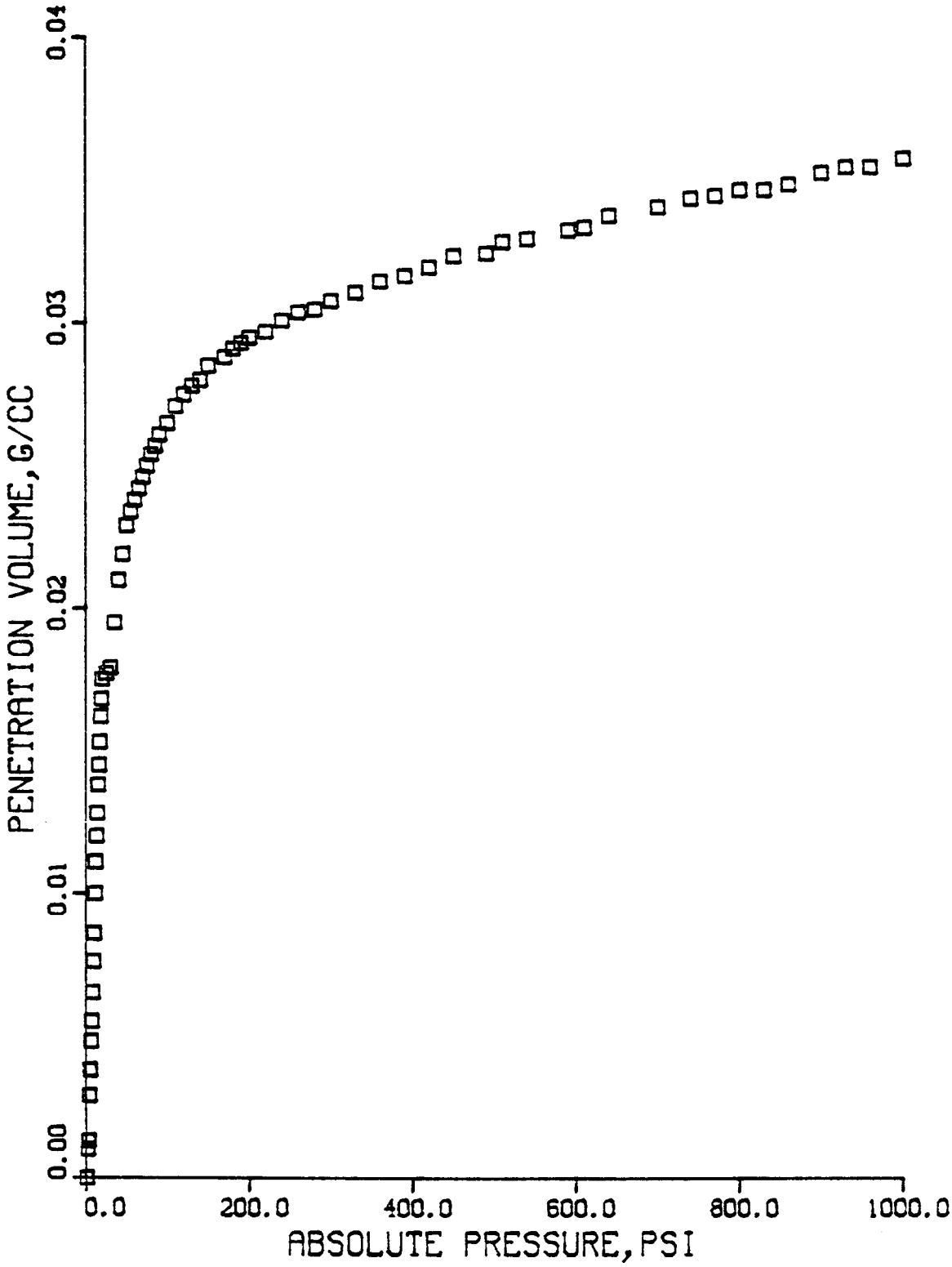
CURVE NUMBER 53
PORE VOLUME .036 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0358	.0
2.	29.392	7.500	.0010	.0348	2.7
3.	44.088	5.000	.0013	.0344	3.7
4.	58.784	3.700	.0029	.0329	8.0
5.	73.480	3.000	.0038	.0319	10.7
6.	88.176	2.500	.0048	.0310	13.3
7.	102.872	2.100	.0055	.0302	15.5
8.	117.568	1.800	.0065	.0293	18.1
9.	132.264	1.600	.0076	.0281	21.3
10.	146.960	1.500	.0086	.0272	24.0
11.	161.656	1.400	.0100	.0257	28.0
12.	176.352	1.300	.0111	.0247	30.9
13.	191.048	1.200	.0120	.0237	33.6
14.	205.744	1.100	.0128	.0230	35.7
15.	220.440	1.000	.0138	.0219	38.7
16.	235.136	.930	.0145	.0213	40.5
17.	249.832	.880	.0153	.0205	42.7
18.	264.528	.830	.0162	.0195	45.3
19.	279.224	.790	.0168	.0190	46.9
20.	293.920	.750	.0175	.0132	49.1
25.	367.400	.600	.0177	.0180	49.6
30.	440.880	.500	.0179	.0178	50.1
35.	514.360	.430	.0195	.0163	54.4
40.	587.840	.370	.0210	.0148	58.7
45.	661.320	.330	.0219	.0138	61.3
50.	734.800	.300	.0229	.0129	64.0
55.	808.280	.270	.0234	.0124	65.3
60.	881.760	.250	.0238	.0119	66.7
65.	955.240	.230	.0242	.0115	67.7
70.	1028.720	.210	.0246	.0112	68.8
75.	1102.200	.200	.0250	.0108	69.9
80.	1175.680	.180	.0254	.0104	70.9
85.	1249.160	.170	.0257	.0100	72.0

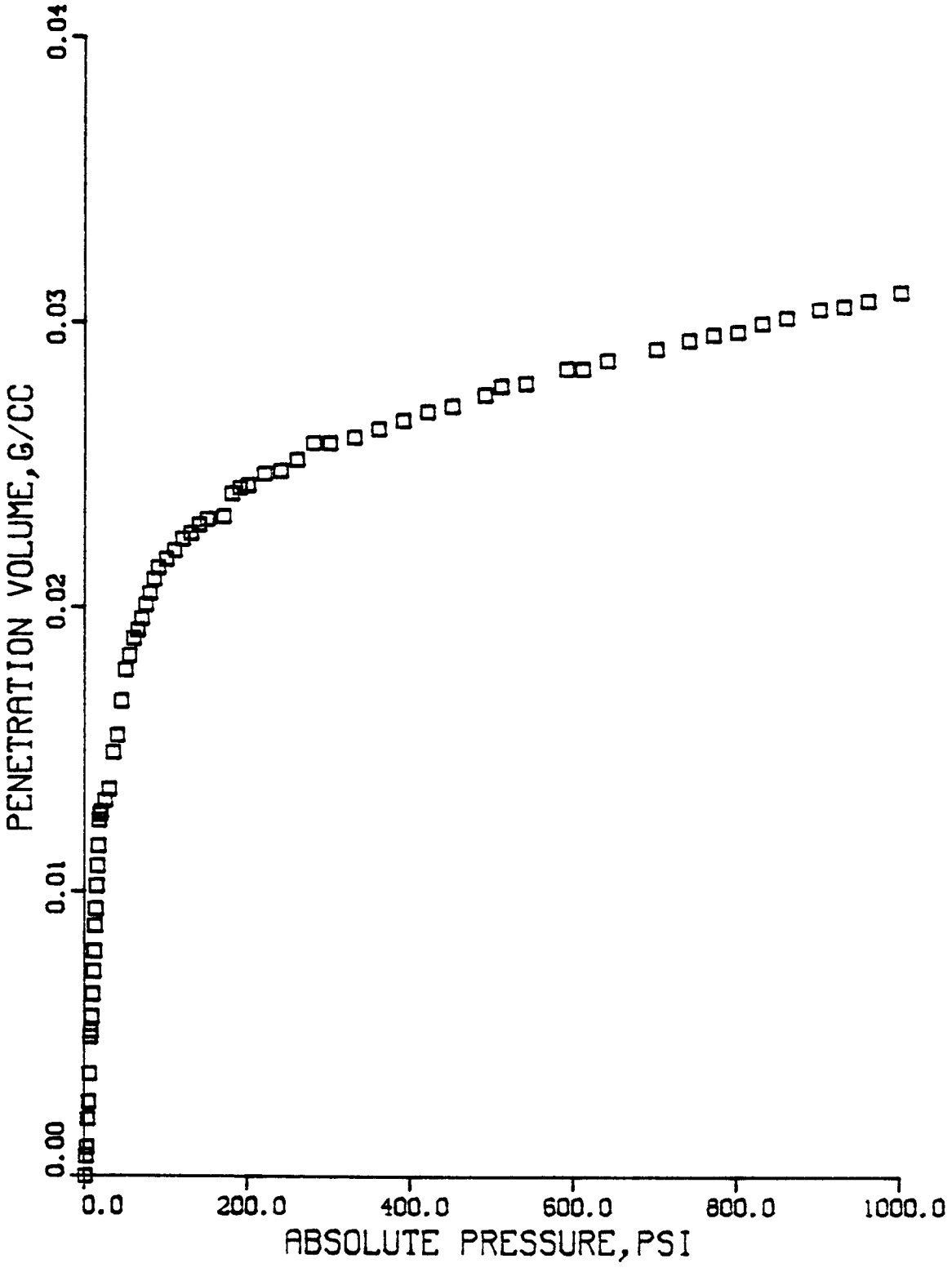
POROSITY DATA FOR SAMPLE K 4-1495.

PRESSURE PSIA	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0261	.0096	73.1
100.	1469.600	.150	.0265	.0092	74.1
110.	1616.560	.140	.0271	.0087	75.7
120.	1763.520	.130	.0275	.0083	76.8
130.	1910.480	.120	.0276	.0079	77.9
140.	2057.440	.110	.0280	.0077	78.4
150.	2204.400	.100	.0285	.0072	79.7
160.	2351.320	.088	.0288	.0070	80.5
180.	2645.280	.083	.0291	.0067	81.3
190.	2792.240	.079	.0293	.0065	81.9
200.	2939.200	.075	.0295	.0063	82.4
220.	3233.120	.068	.0297	.0061	82.9
240.	3527.040	.062	.0301	.0056	84.3
260.	3820.960	.057	.0304	.0053	85.1
280.	4114.880	.053	.0305	.0052	85.3
300.	4408.800	.050	.0308	.0050	86.1
330.	4849.680	.045	.0311	.0047	86.9
360.	5290.560	.041	.0315	.0043	88.0
390.	5731.440	.038	.0317	.0041	88.5
420.	6172.320	.035	.0320	.0037	89.6
450.	6613.200	.033	.0324	.0033	90.7
480.	7201.040	.030	.0325	.0032	90.9
510.	7494.960	.029	.0329	.0029	92.0
540.	7935.840	.027	.0330	.0028	92.3
570.	8670.640	.025	.0333	.0025	93.1
610.	8964.560	.024	.0334	.0024	93.3
640.	9405.440	.023	.0338	.0020	94.4
700.	10287.200	.021	.0341	.0016	95.5
740.	10875.040	.020	.0344	.0013	96.3
770.	11315.920	.019	.0345	.0012	96.5
800.	11756.800	.019	.0347	.0010	97.1
830.	12197.680	.018	.0347	.0010	97.1
860.	12638.560	.017	.0349	.0009	97.6
900.	13226.400	.017	.0353	.0005	98.7
930.	13667.280	.016	.0355	.0003	99.2
960.	13961.200	.016	.0355	.0003	99.2
1000.	14696.000	.014	.0358	.0000	100.0

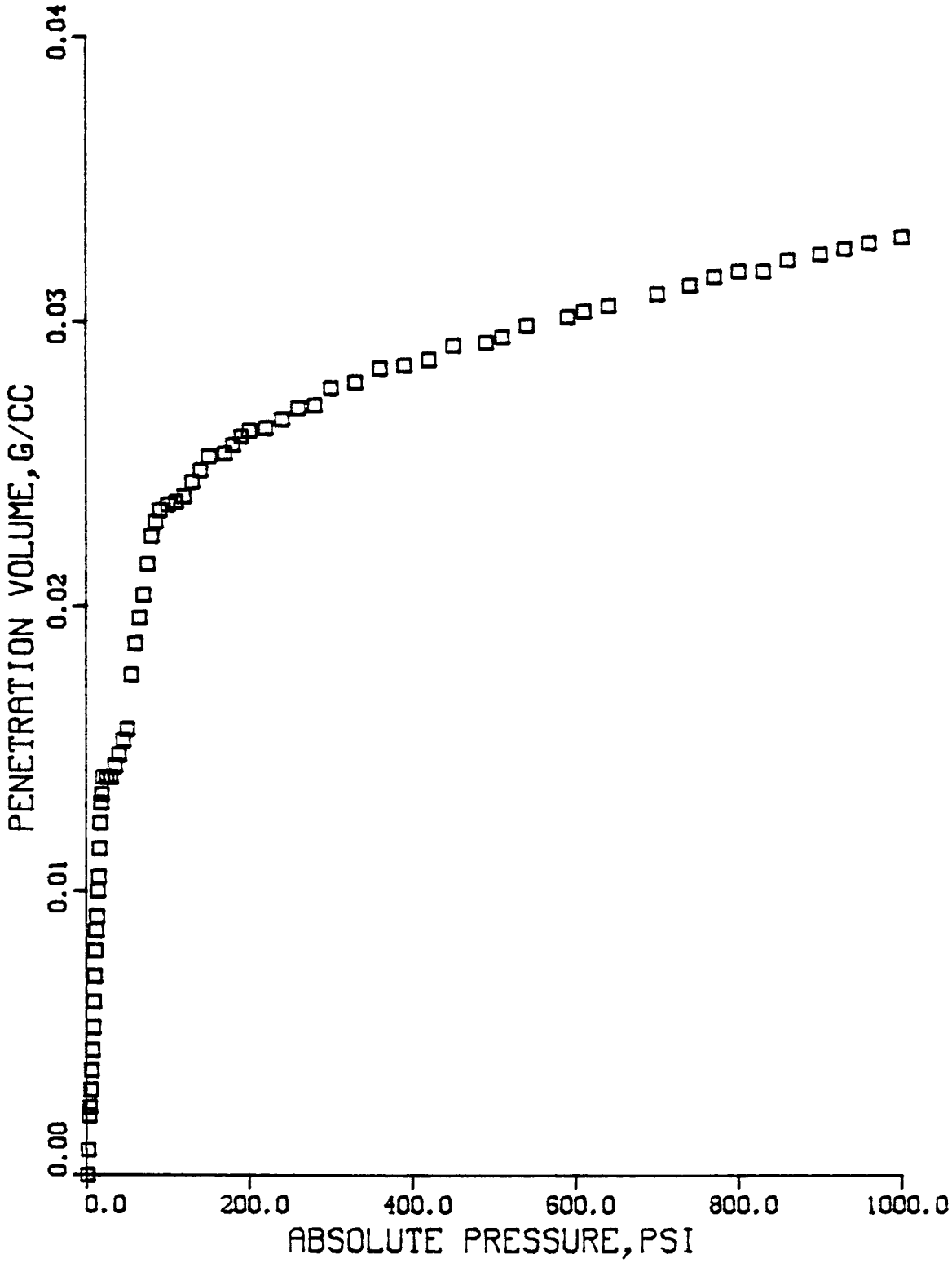
K 41495.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

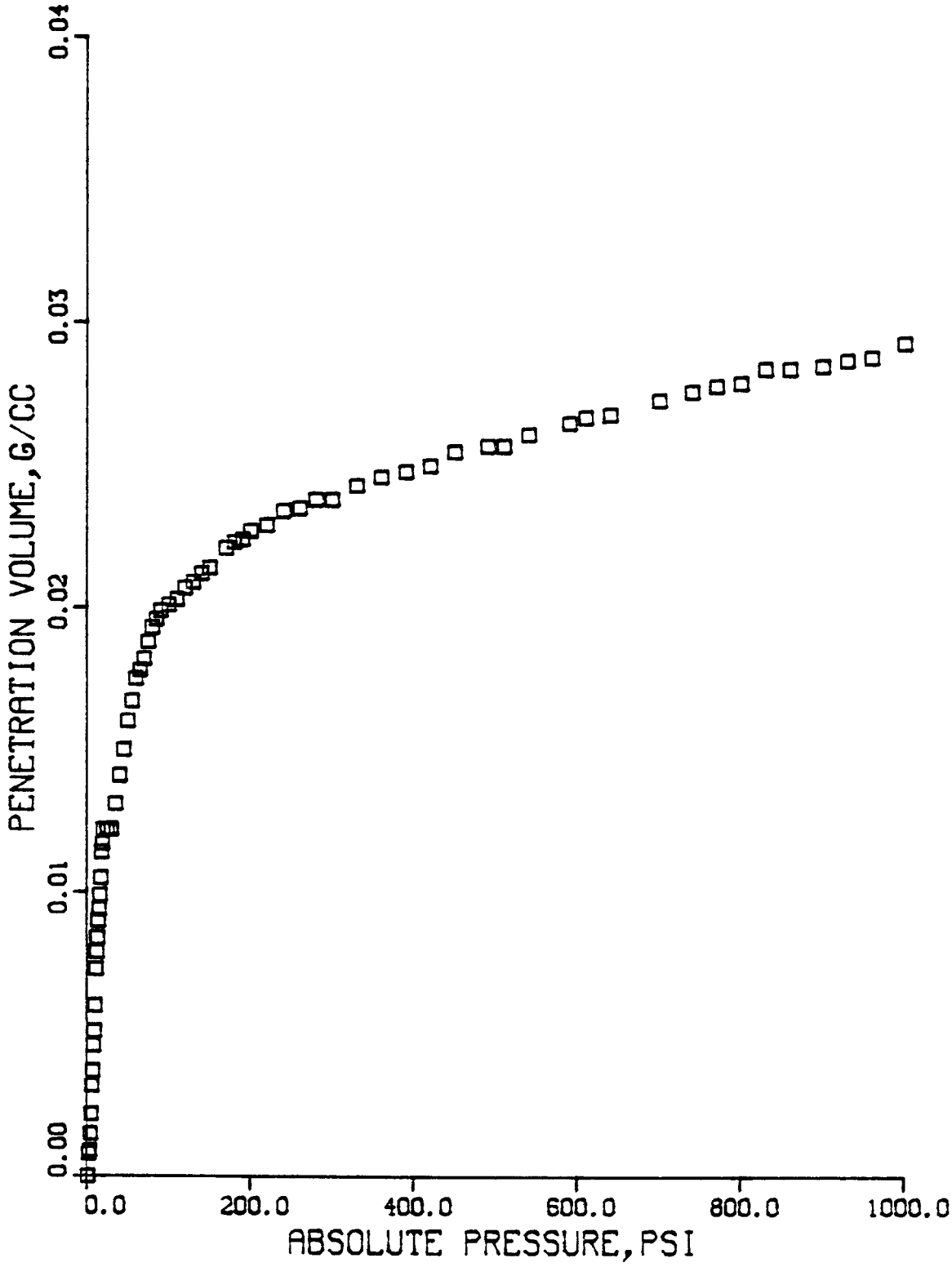
K 41476.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

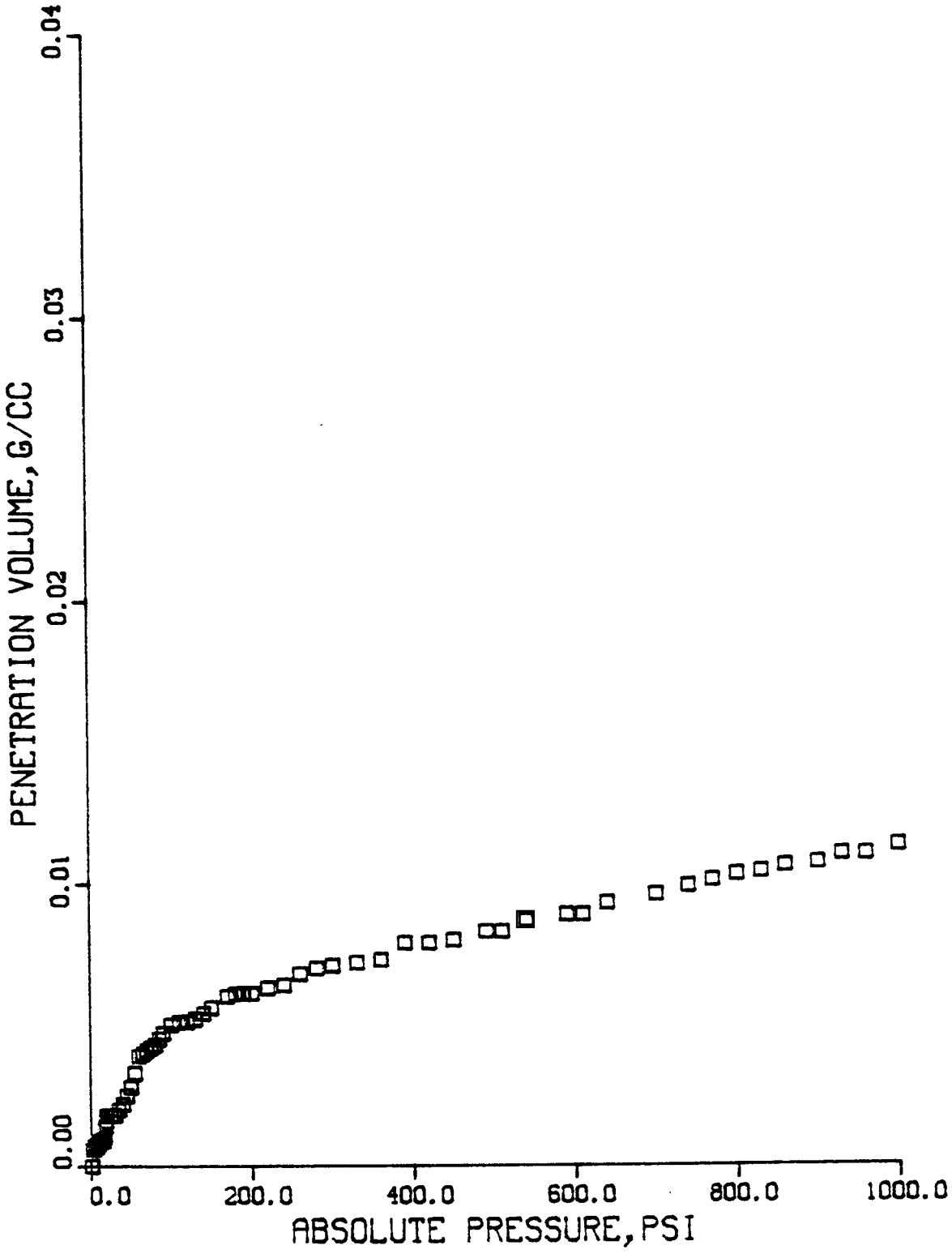
K 41456.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

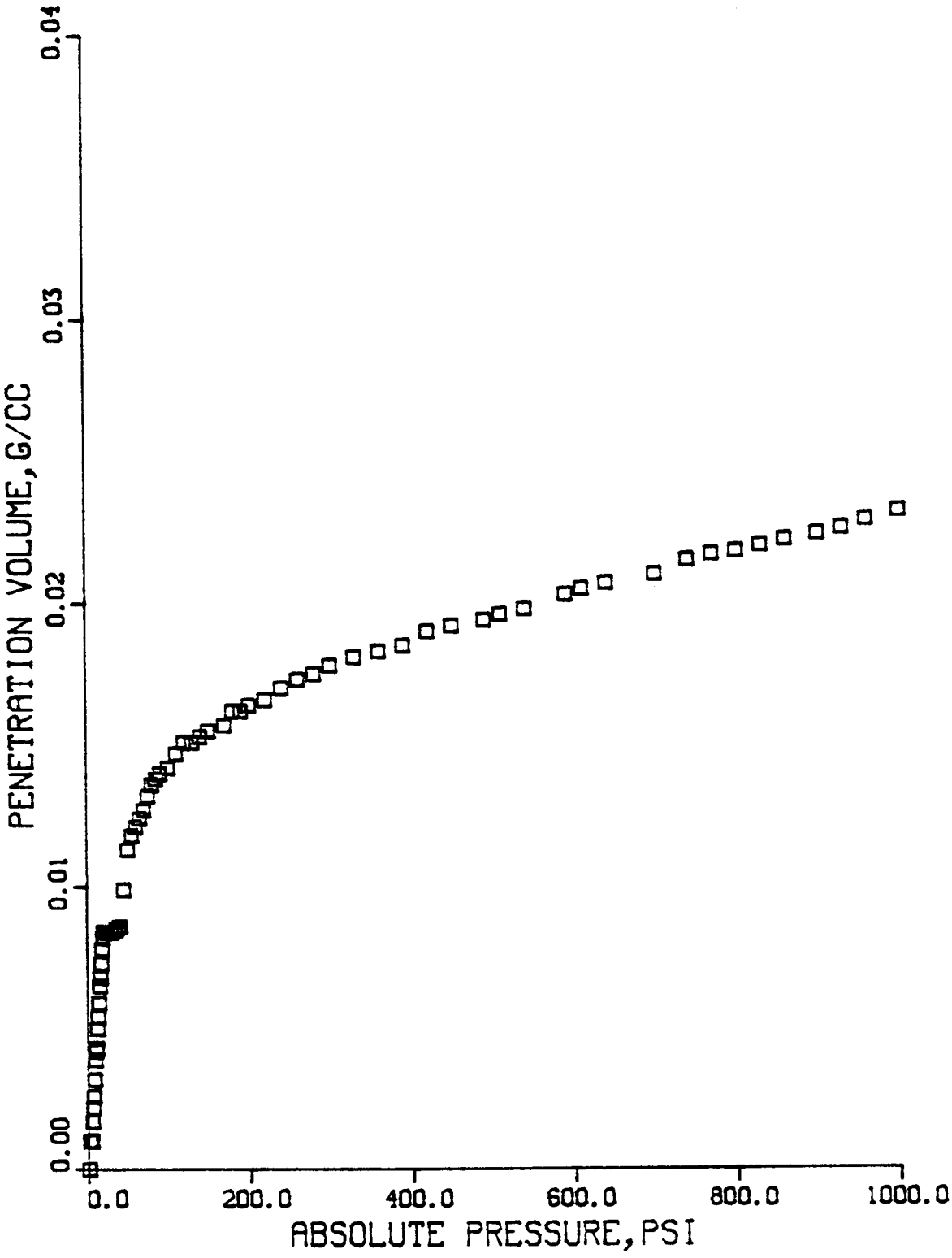
K 41436.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

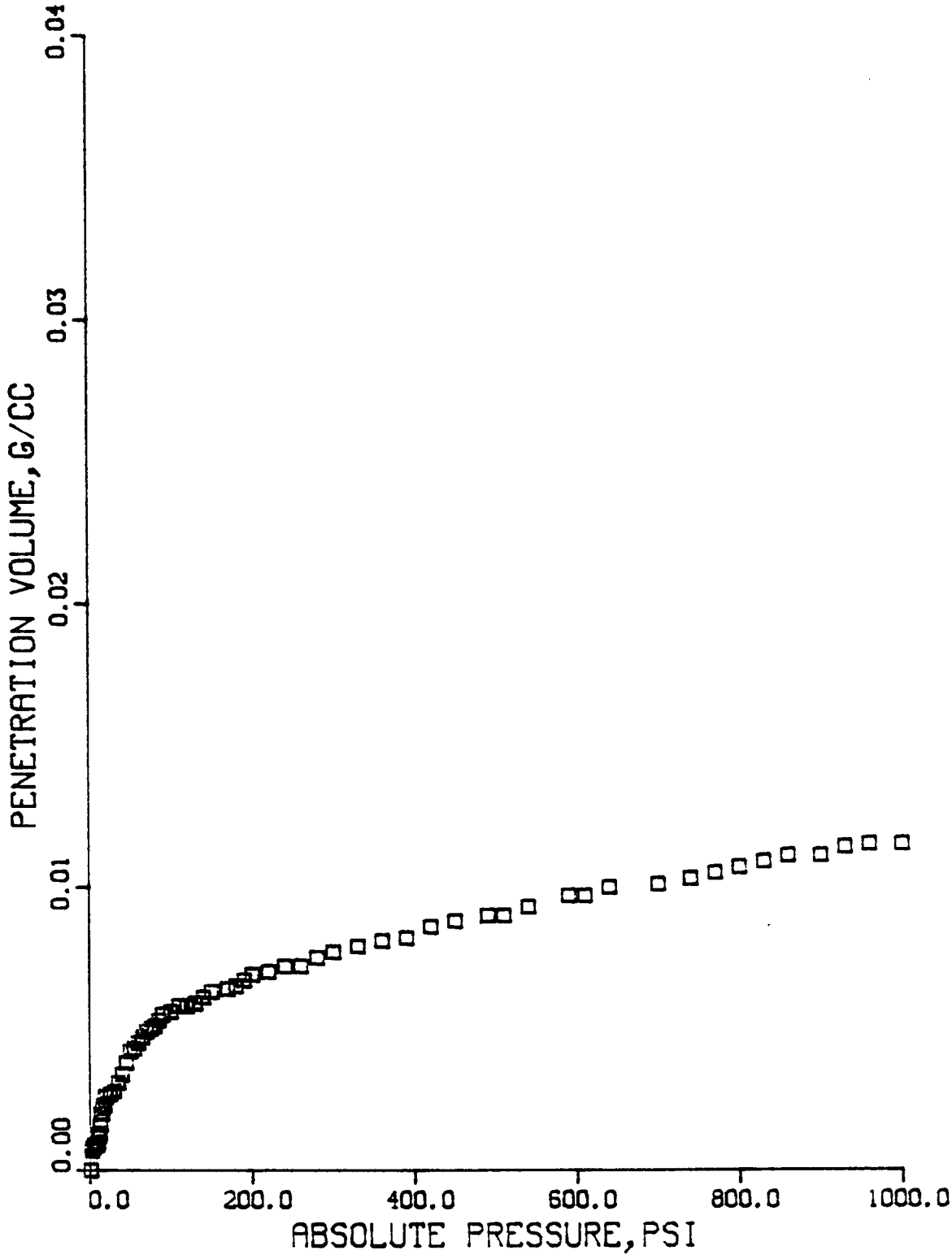
K 41419.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

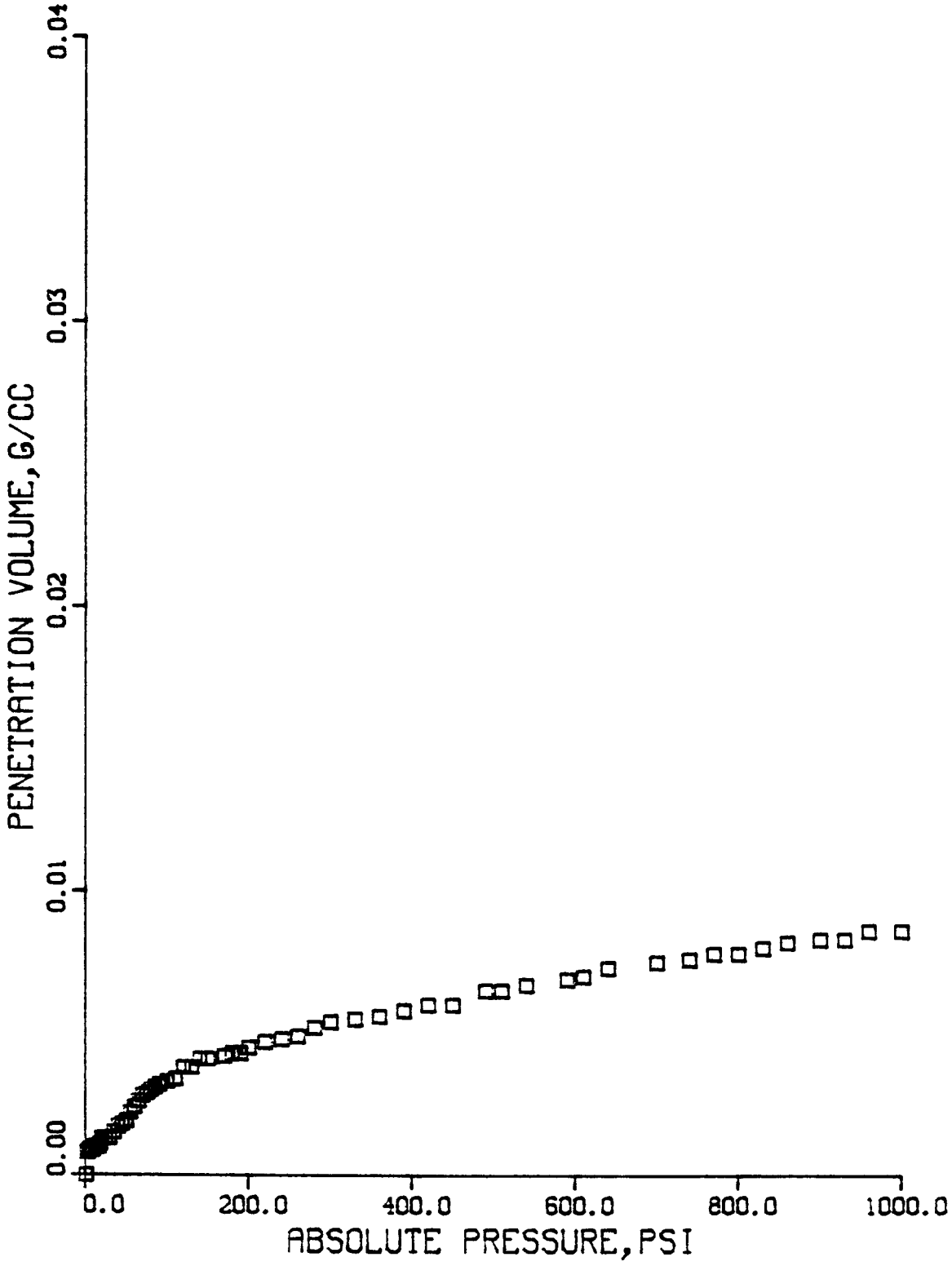
K 41399.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

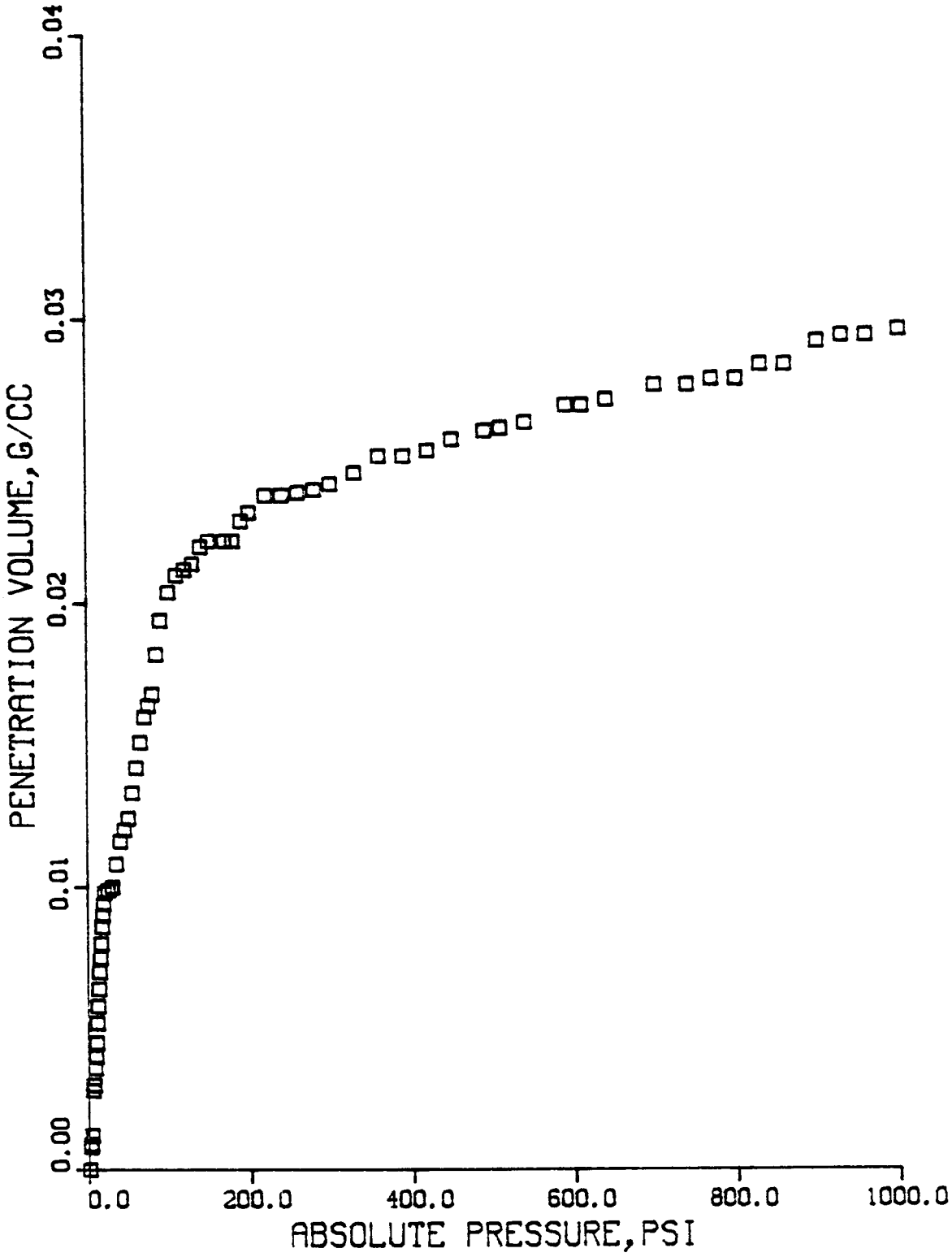
K 41379.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

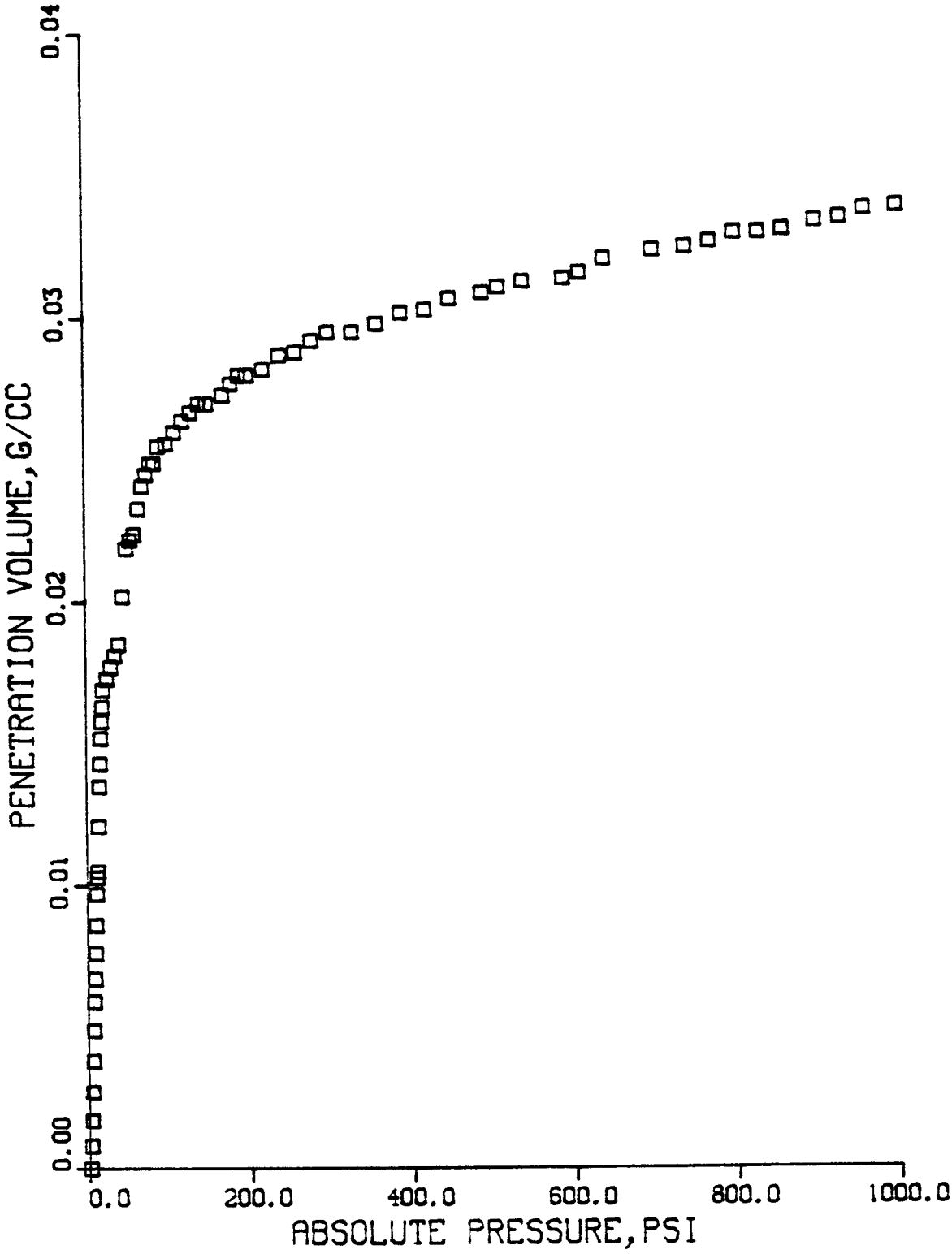
K 41359.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

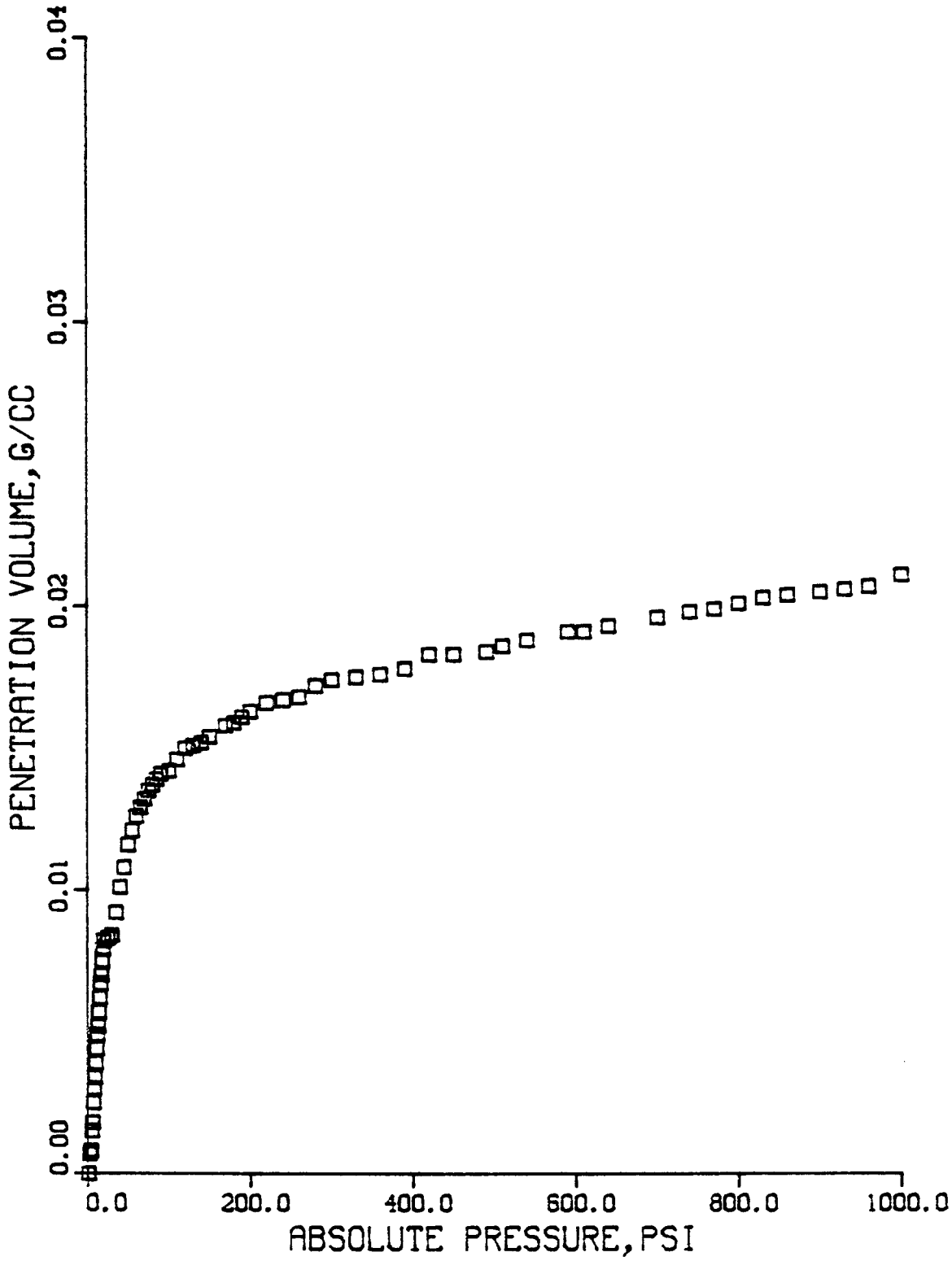
K 41339.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

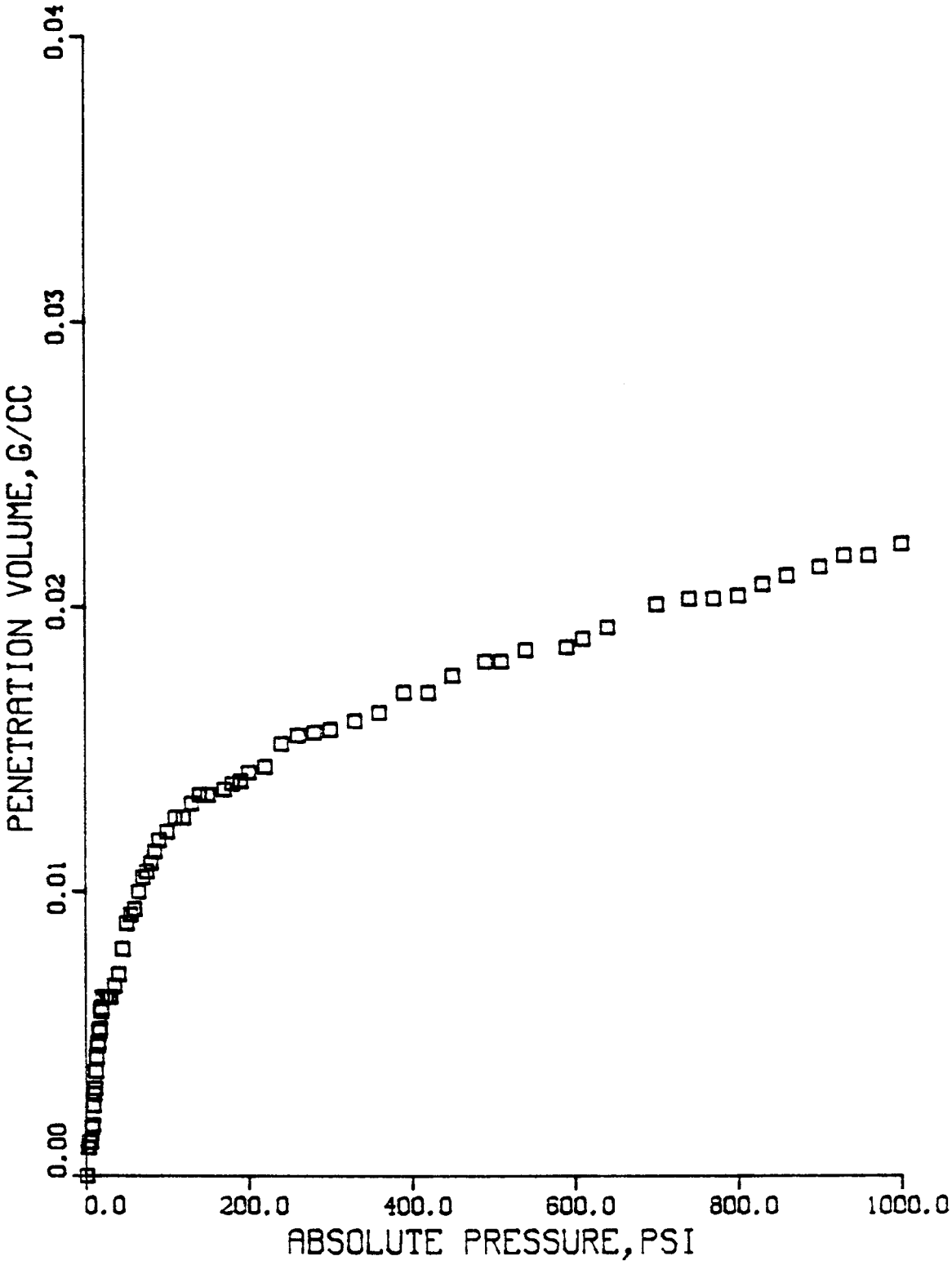
K 41319.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

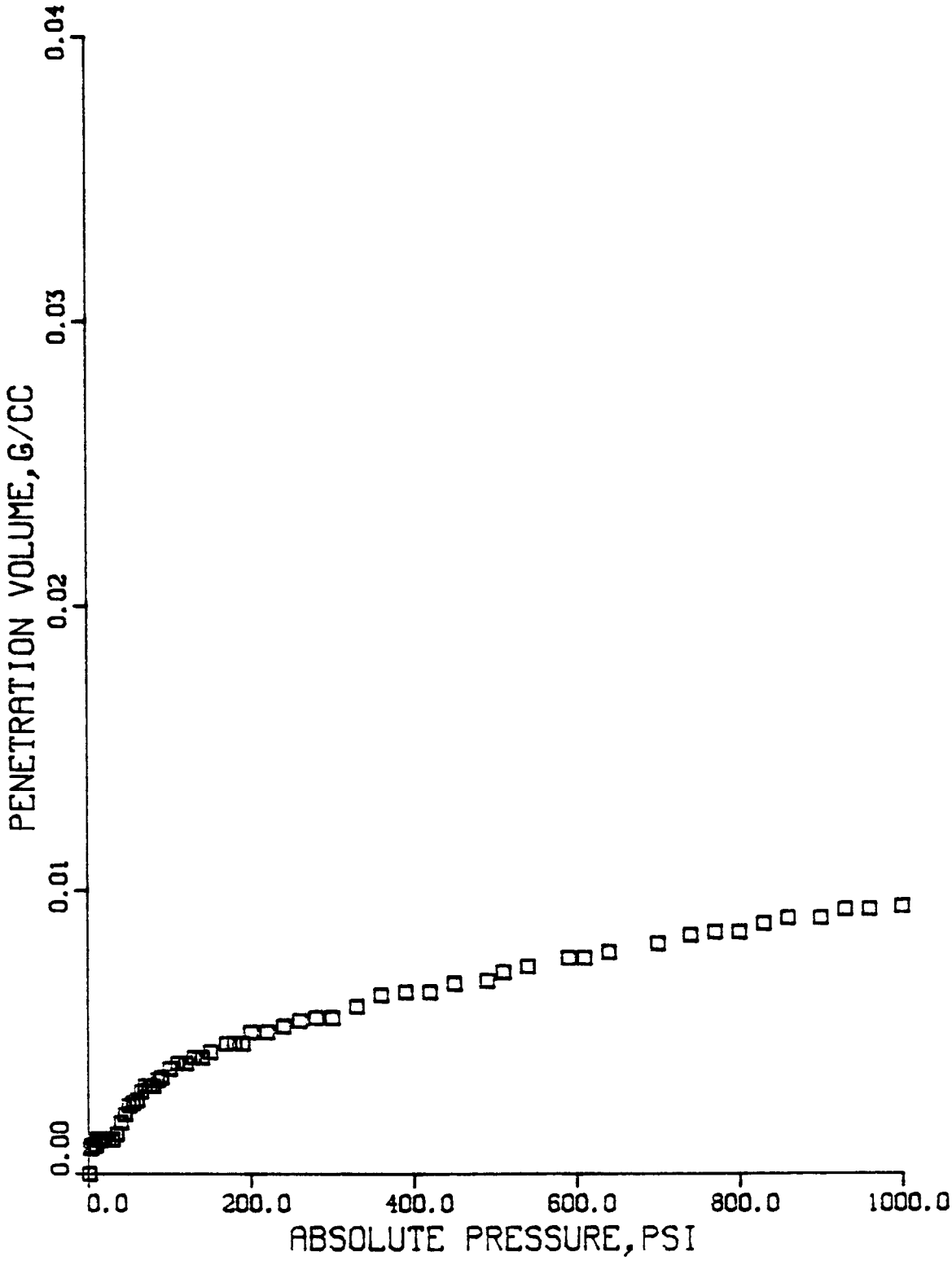
K 41300.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

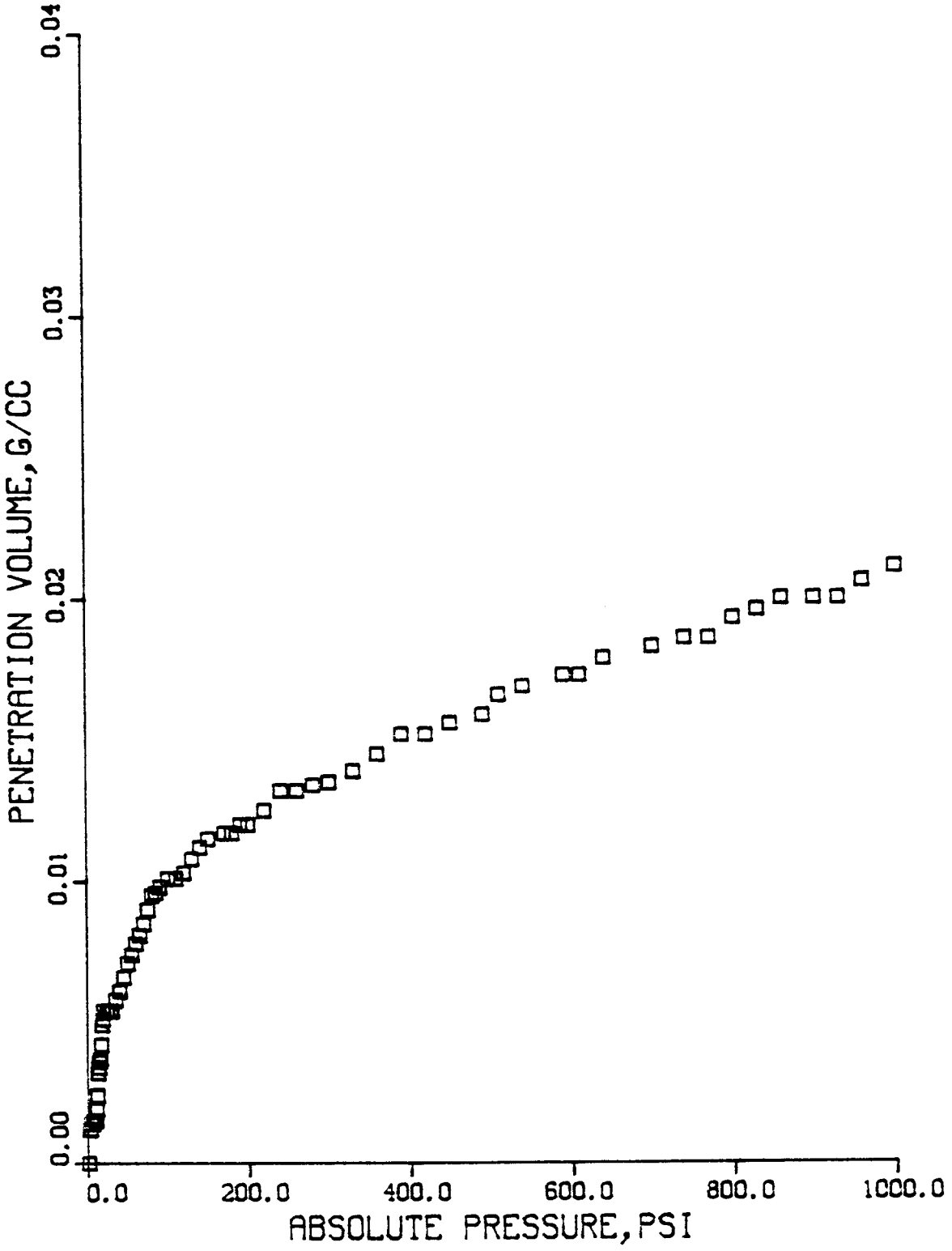
K 41260.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

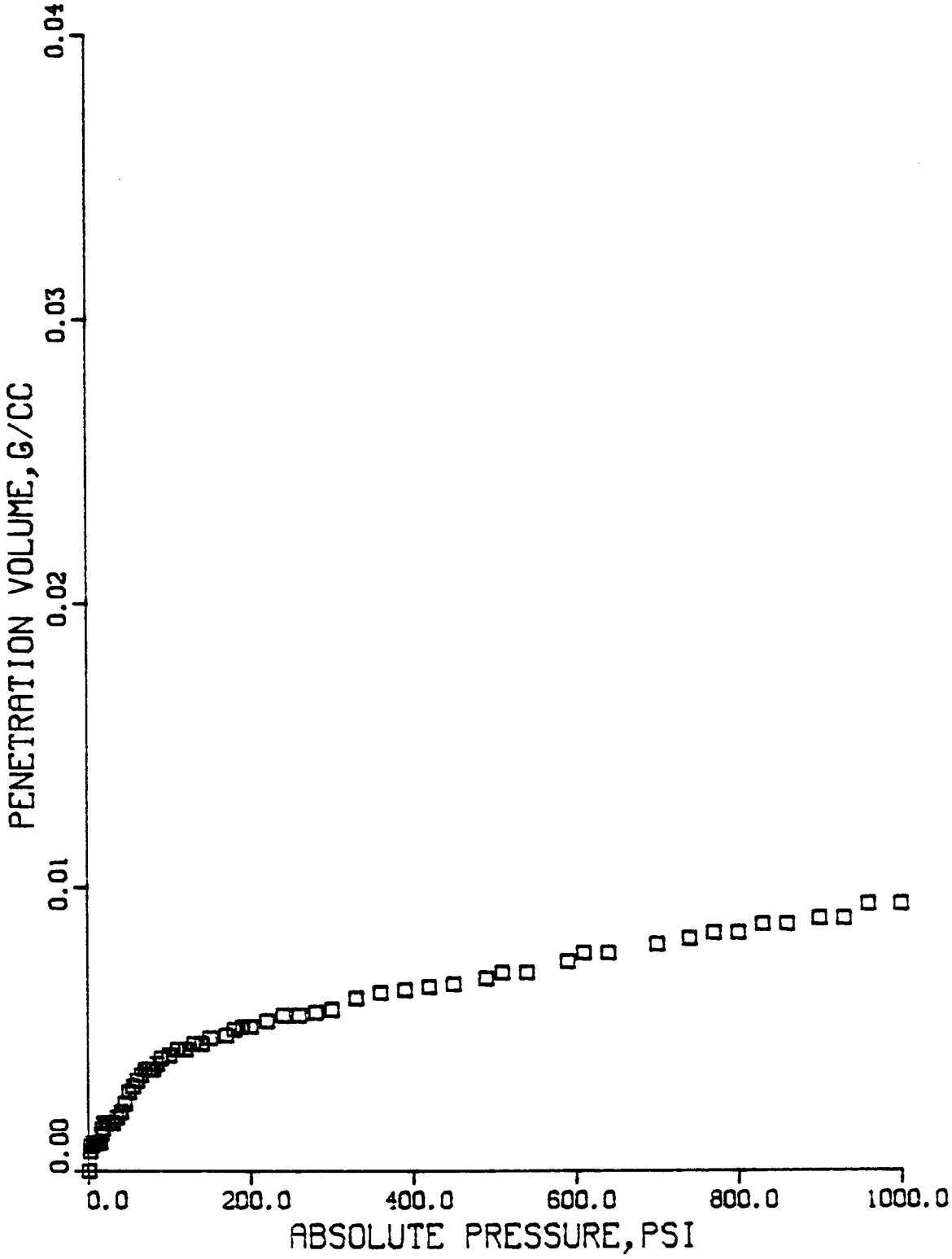
K 41241.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

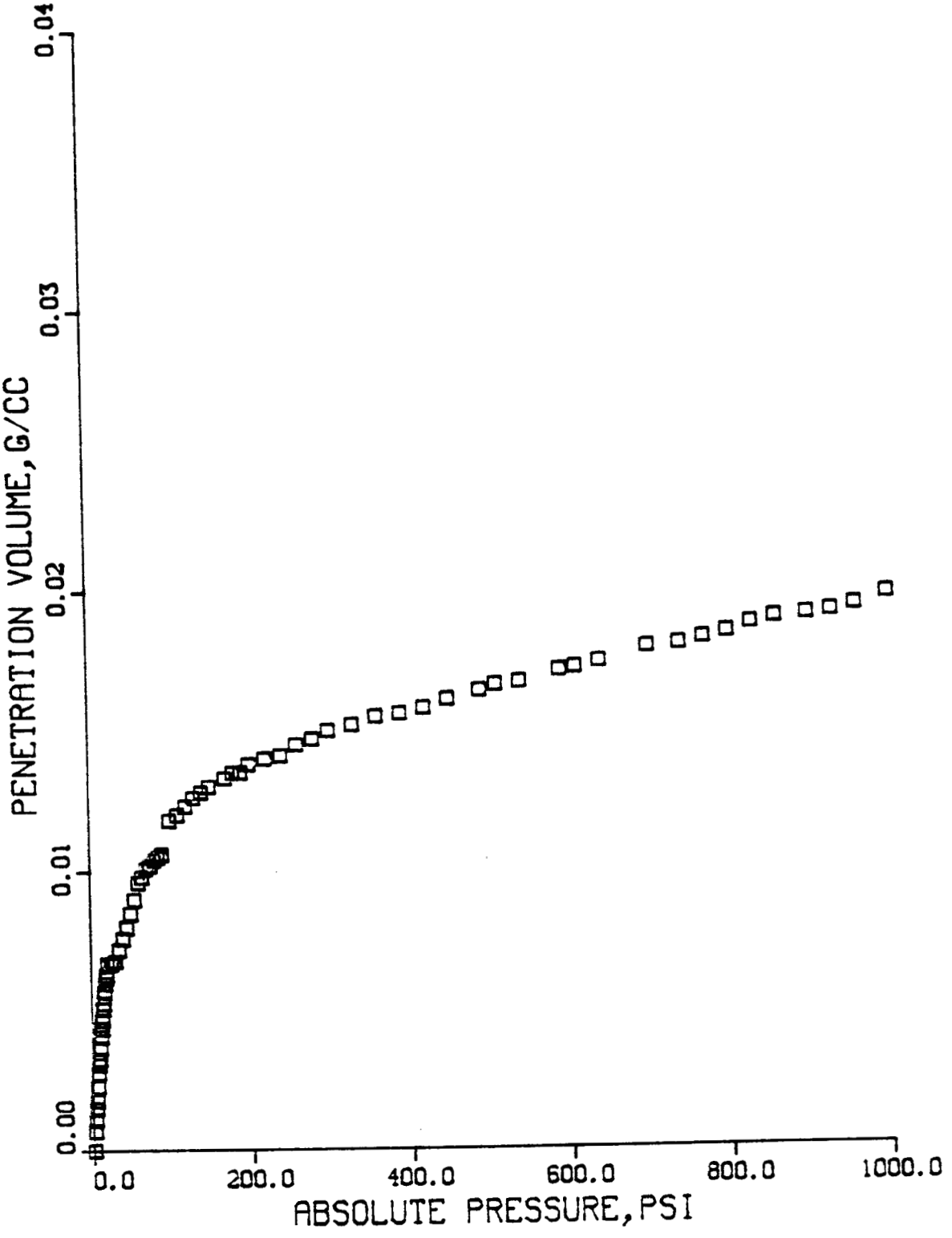
K 41221.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

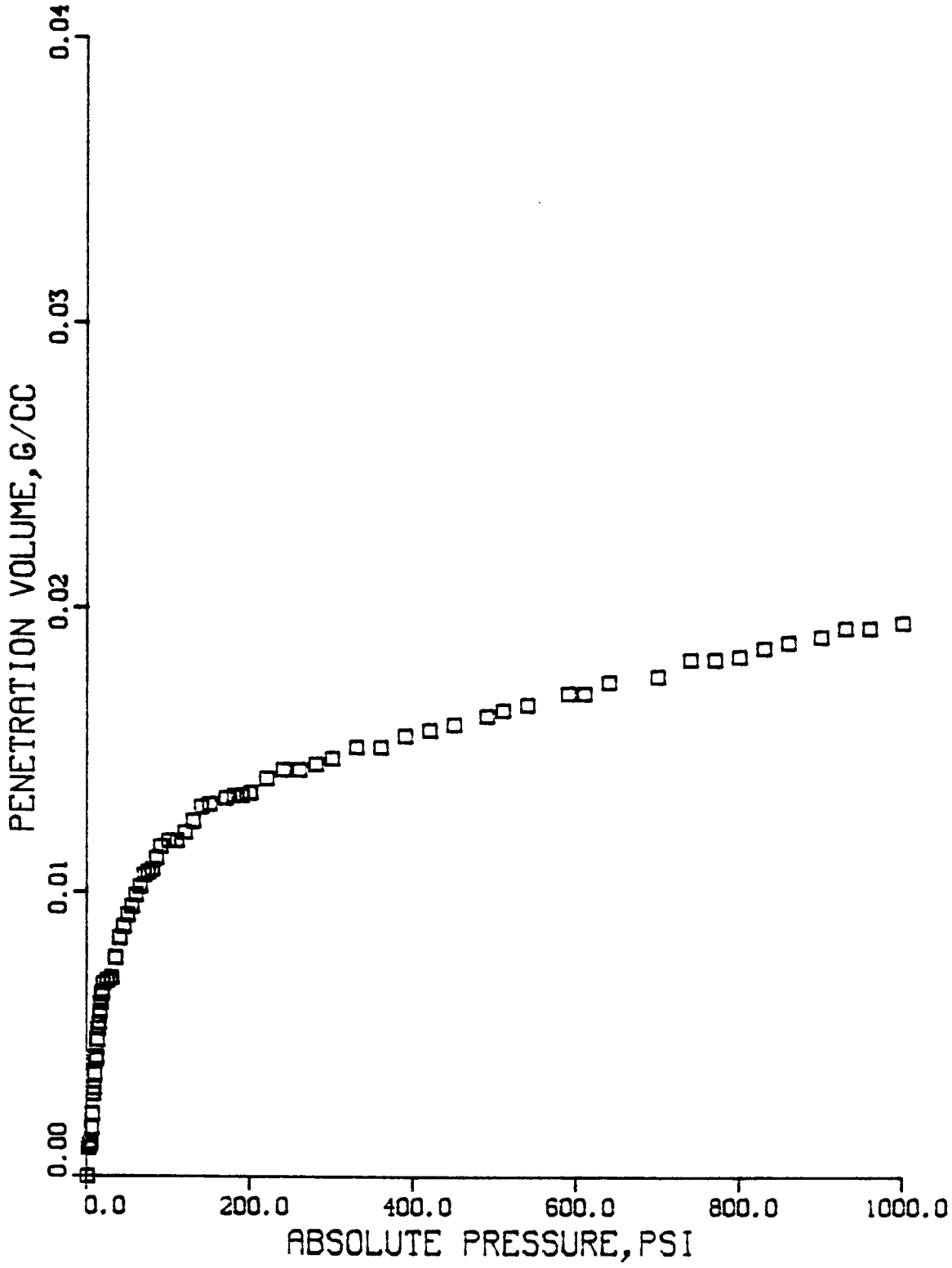
K 41201.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

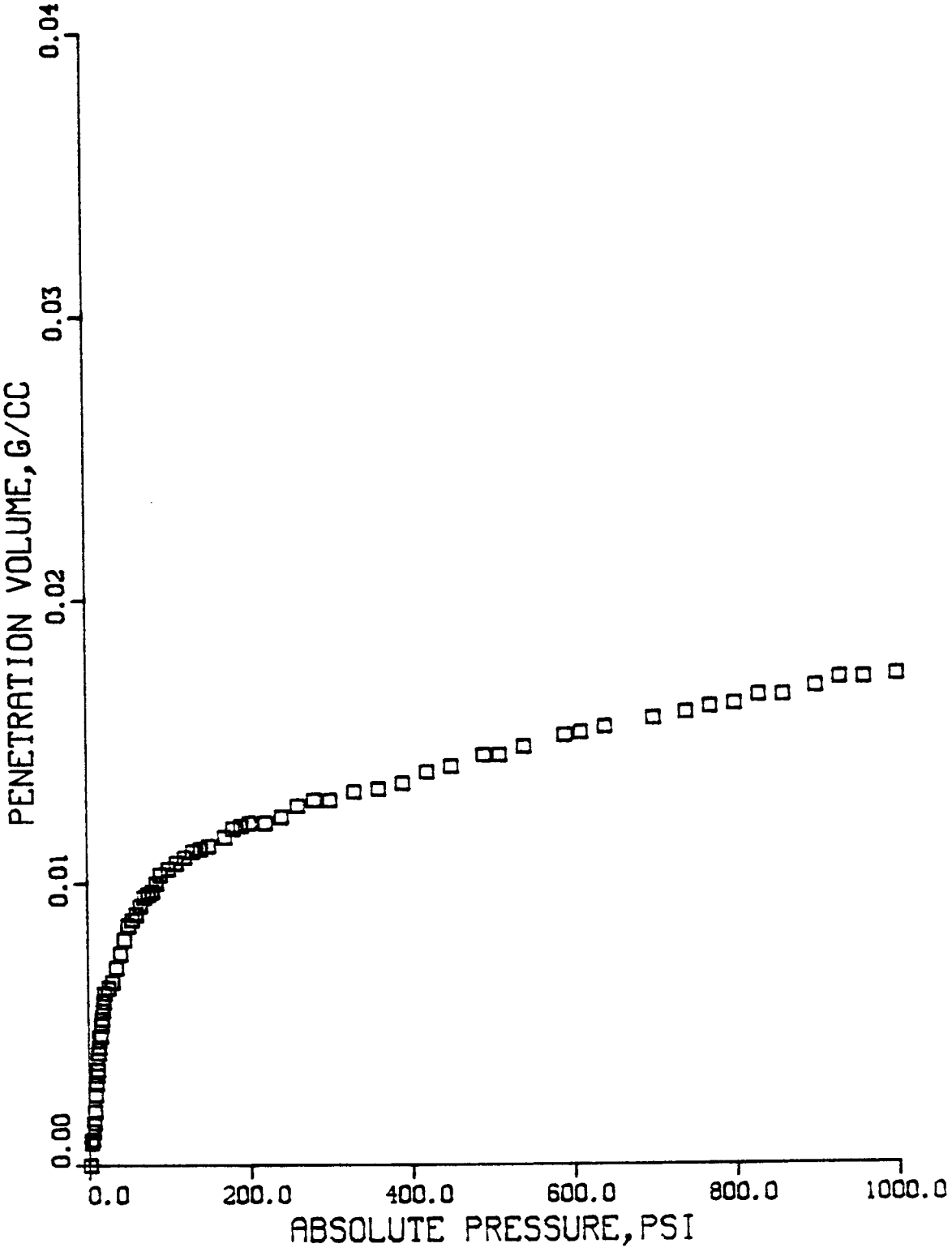
K 41183.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

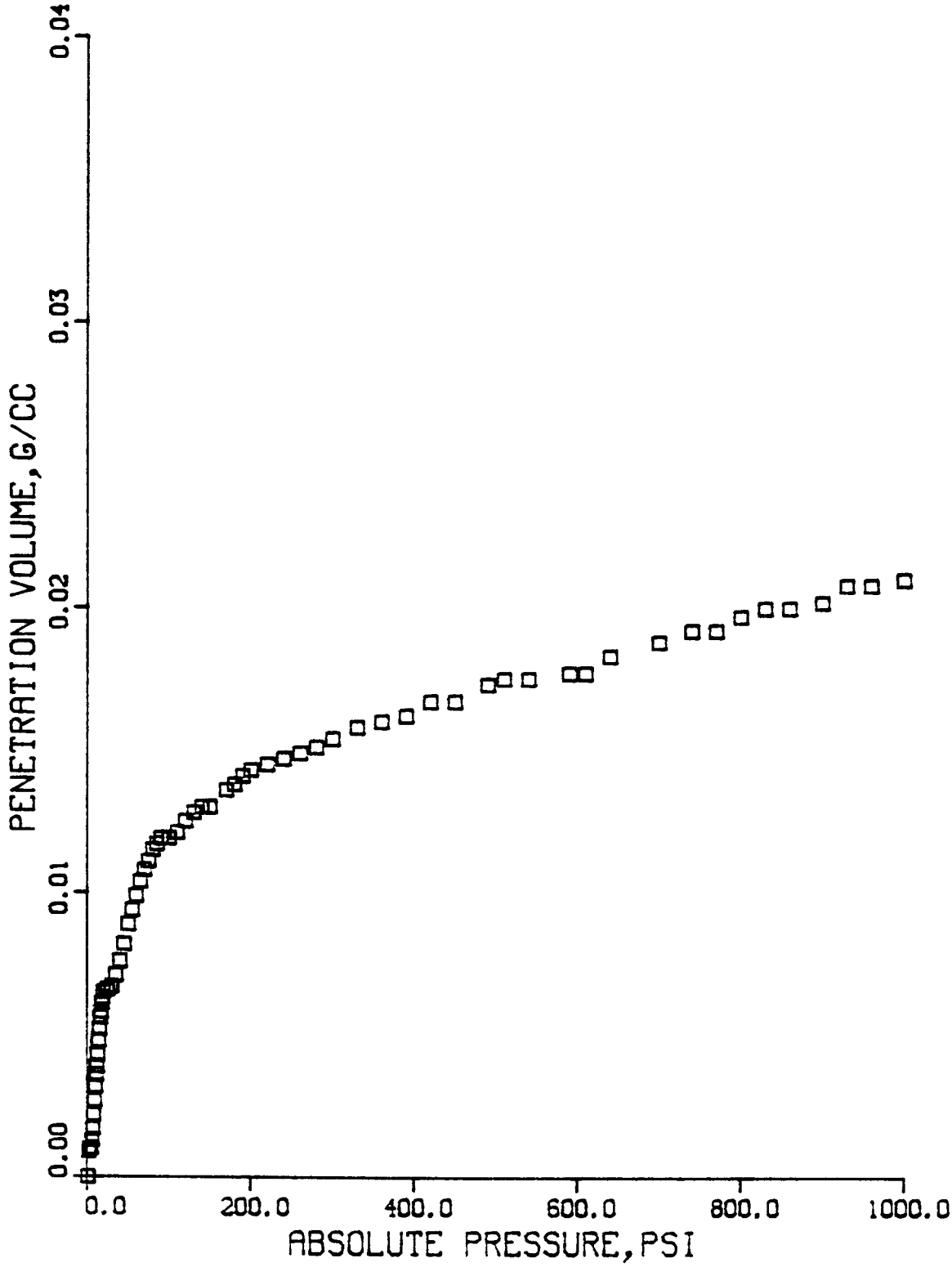
K 41163.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

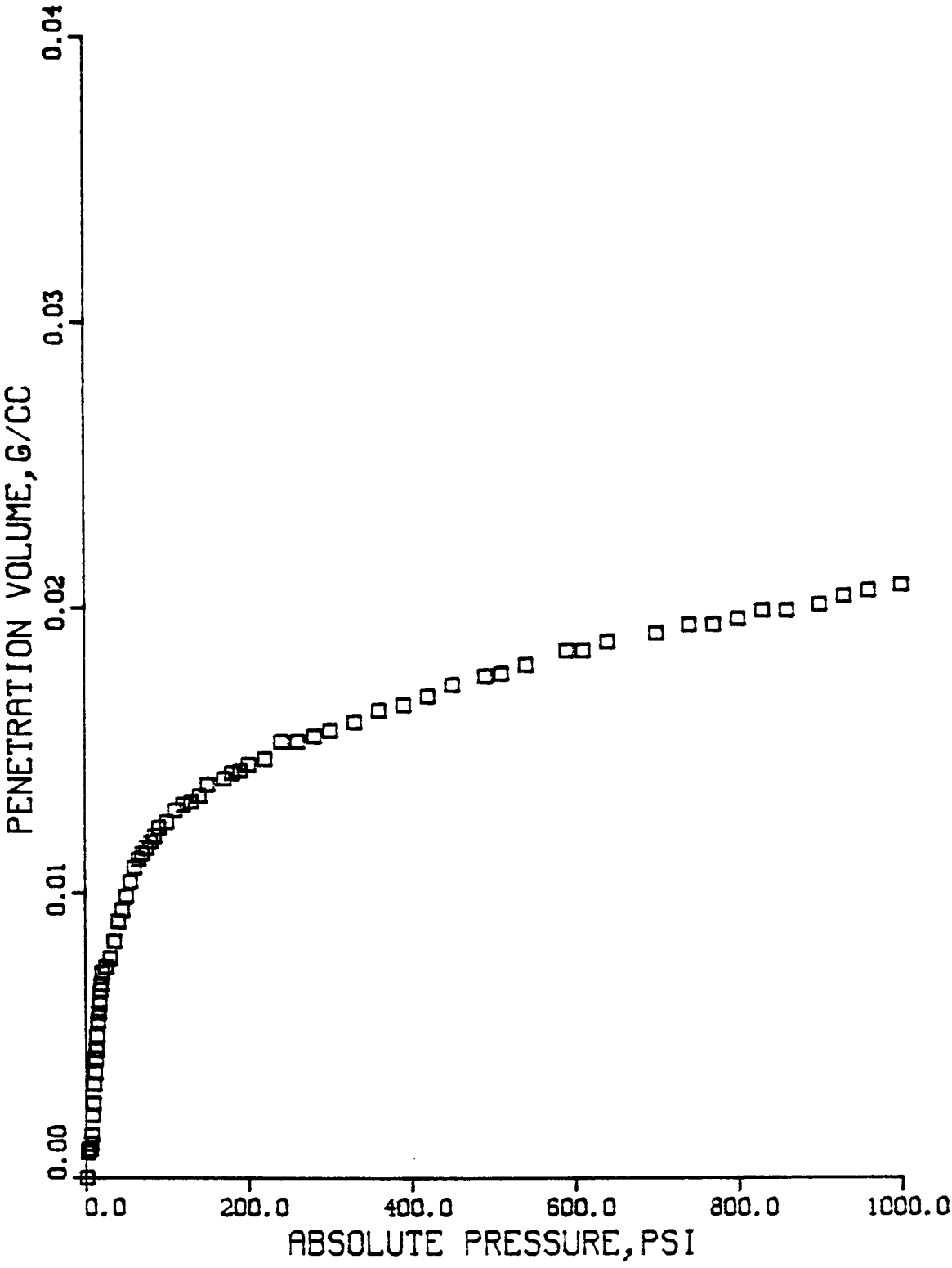
K 41143.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

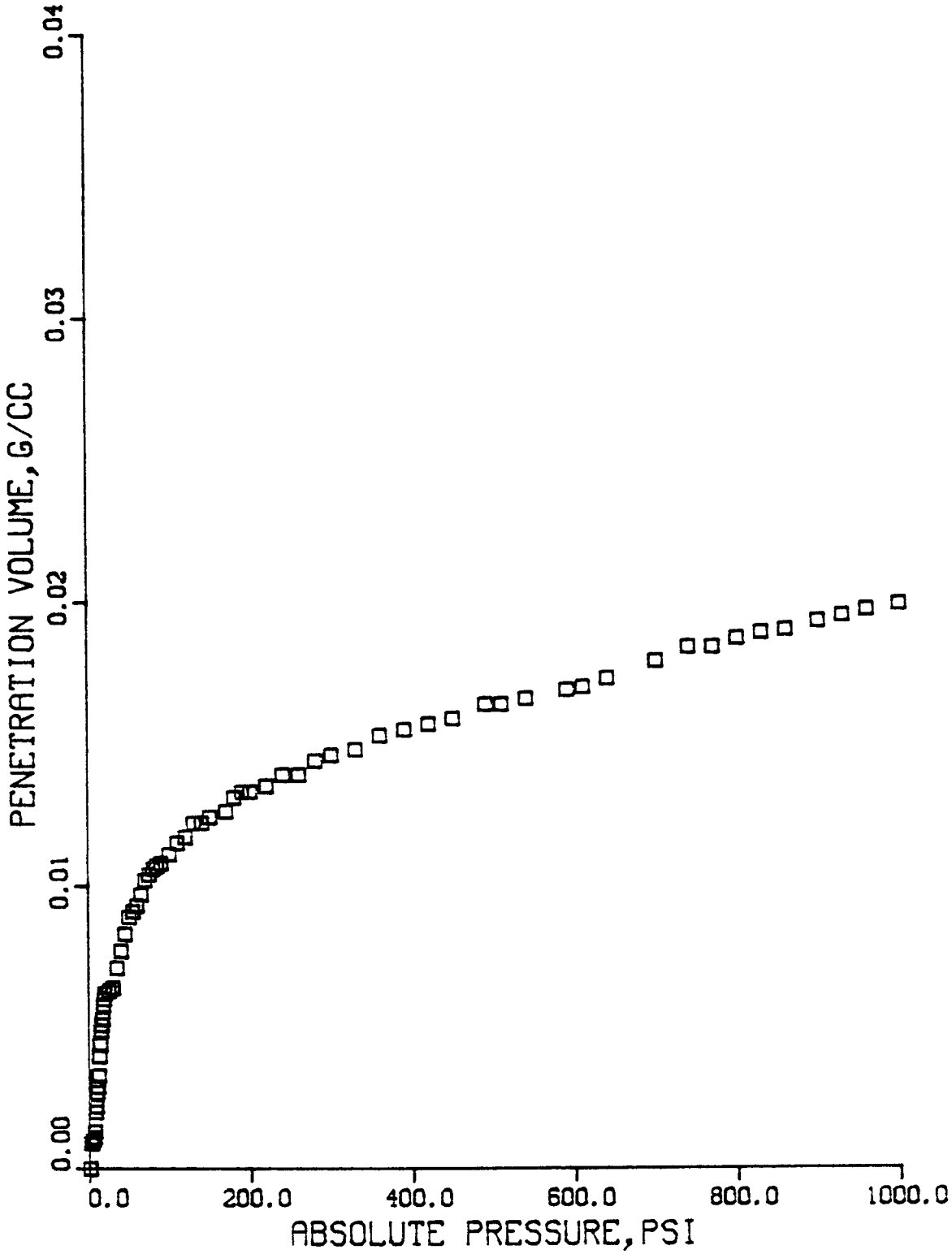
K 41126.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

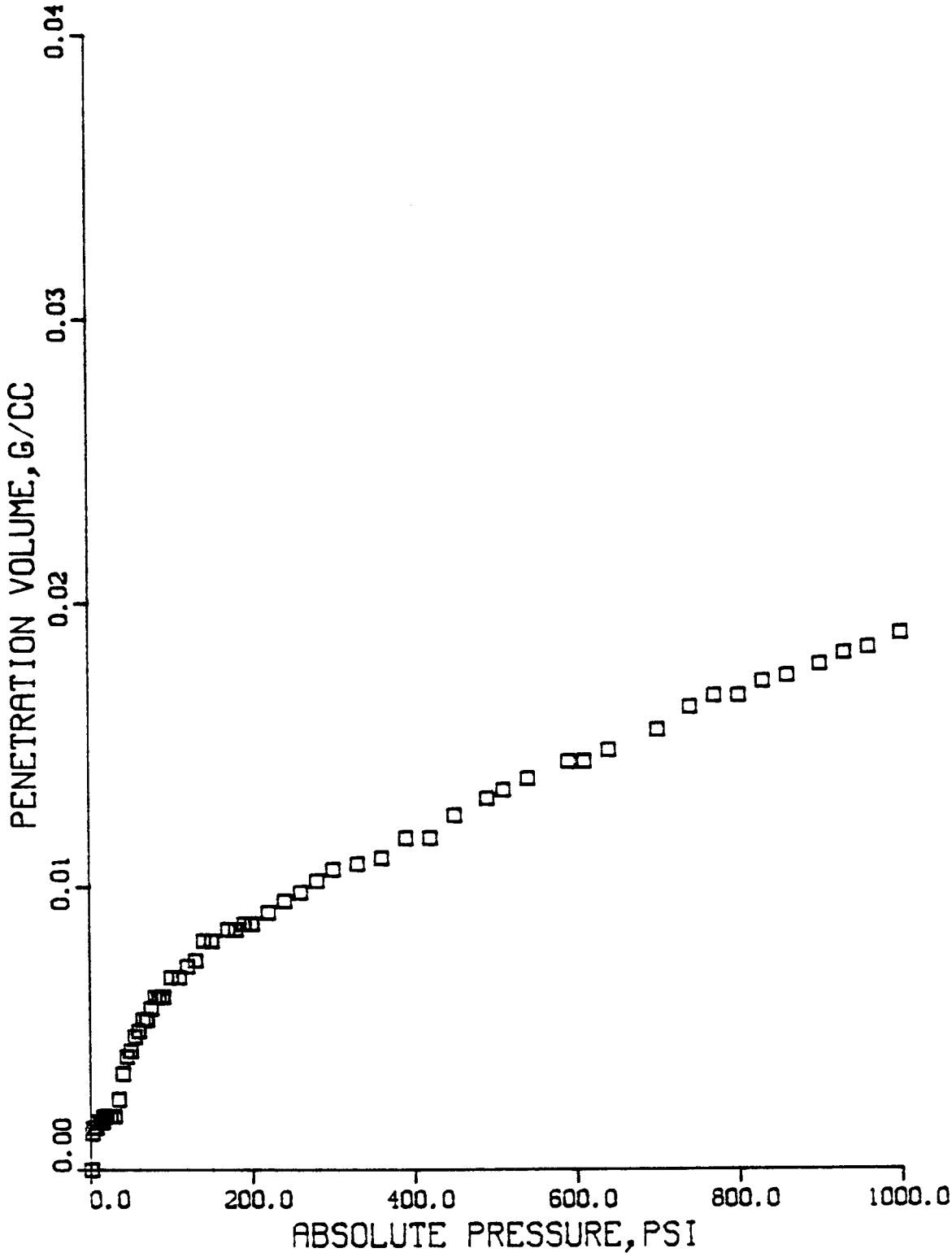
K 41096.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

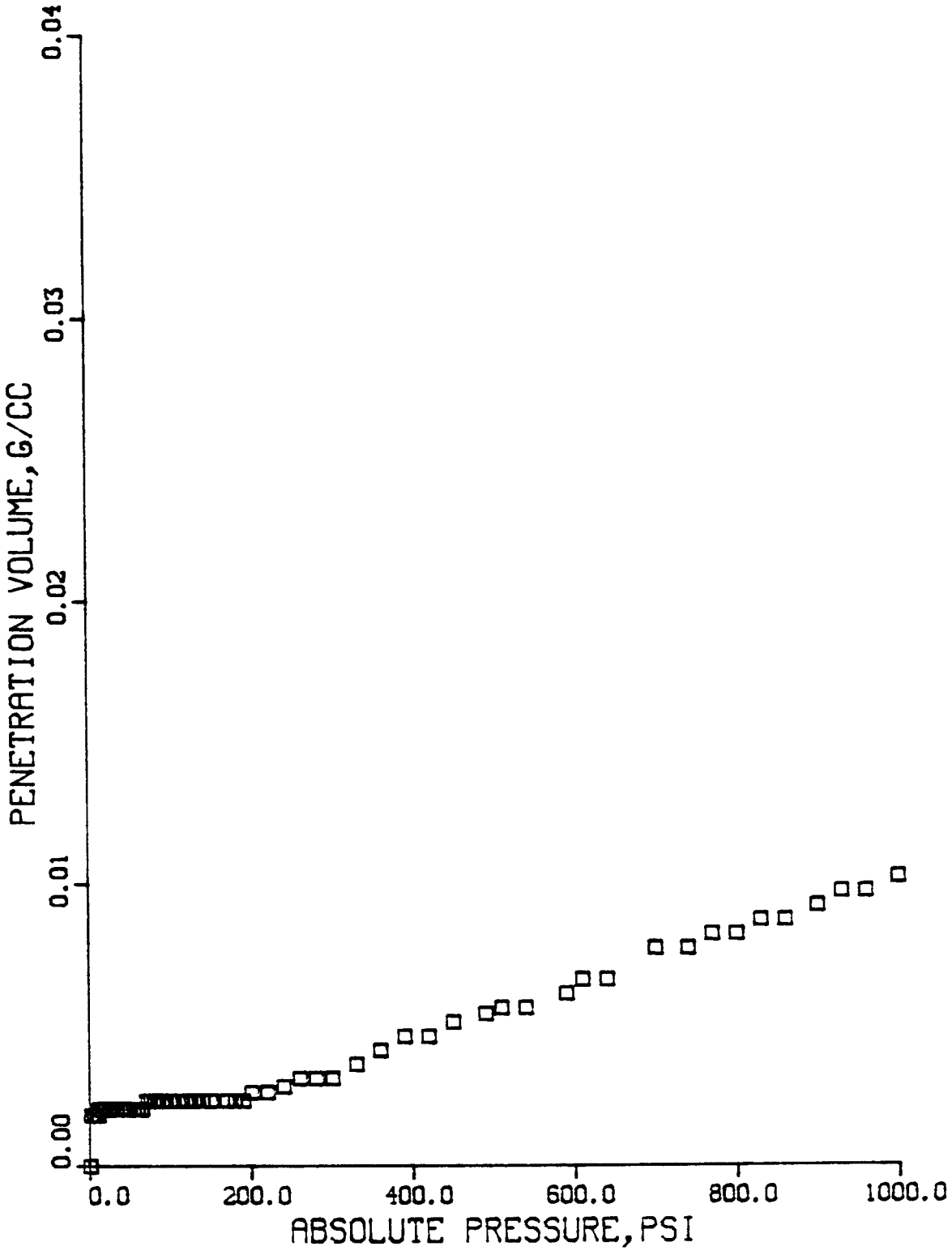
K 41079.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

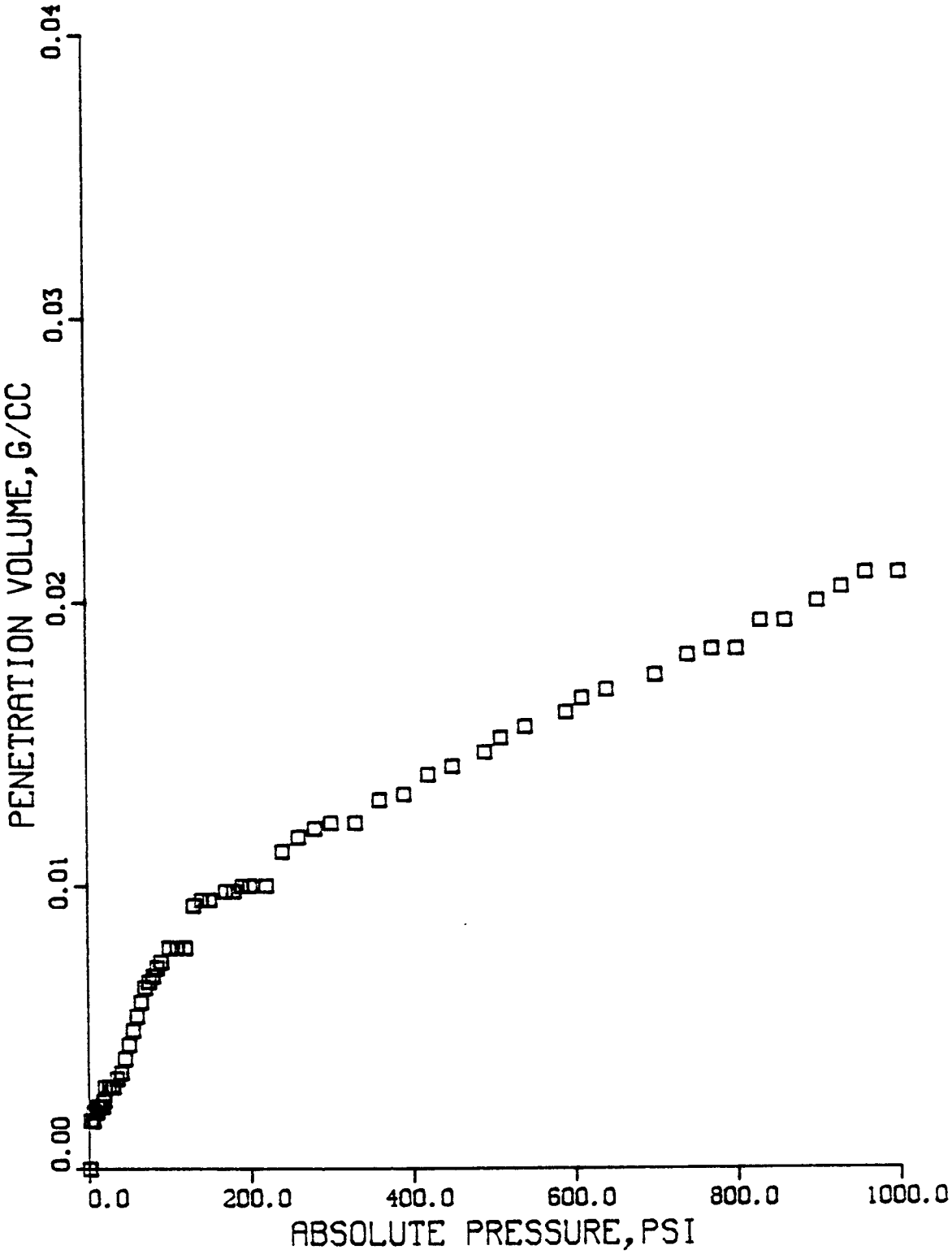
K 41059.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

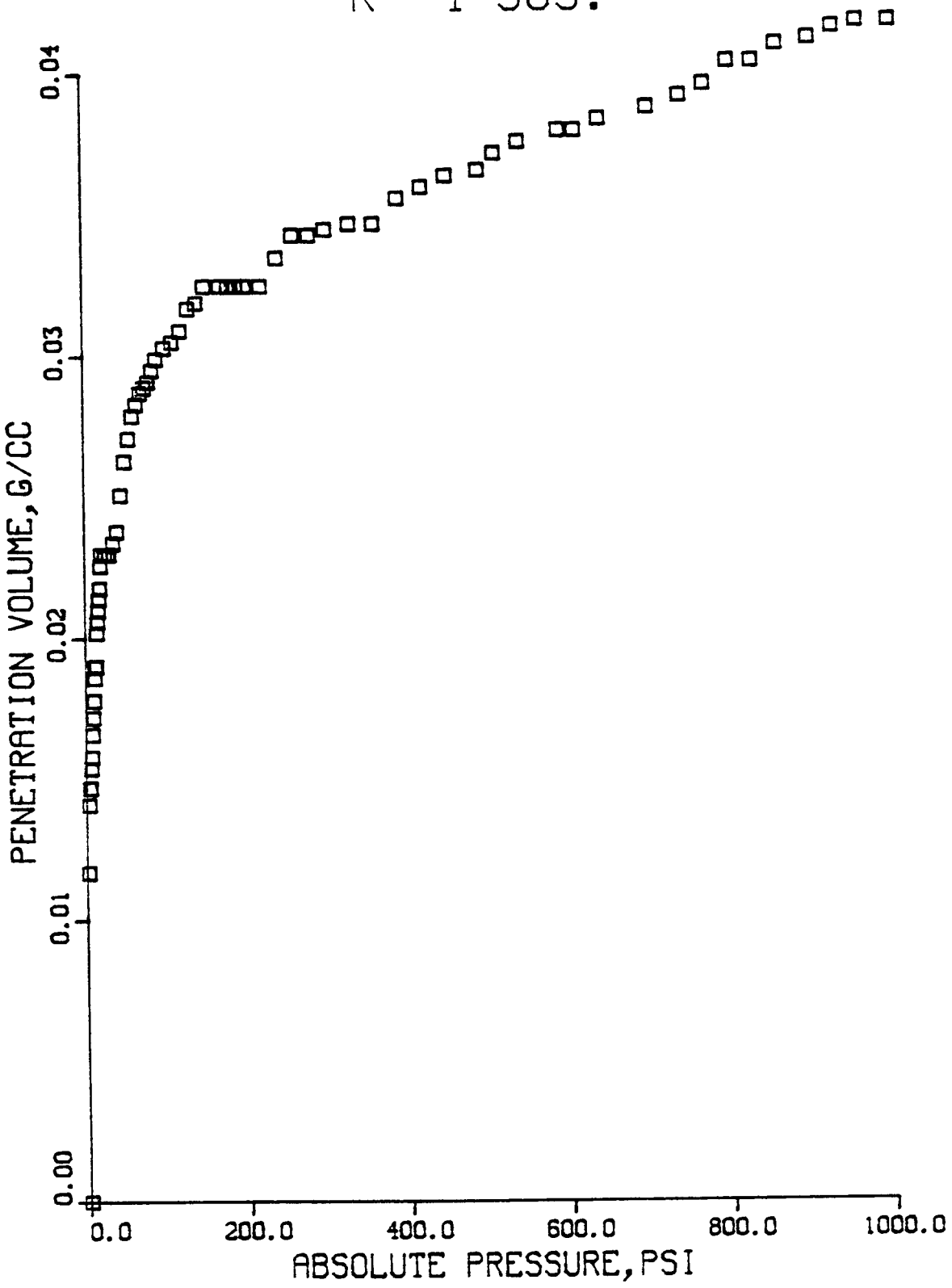
K 41039.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

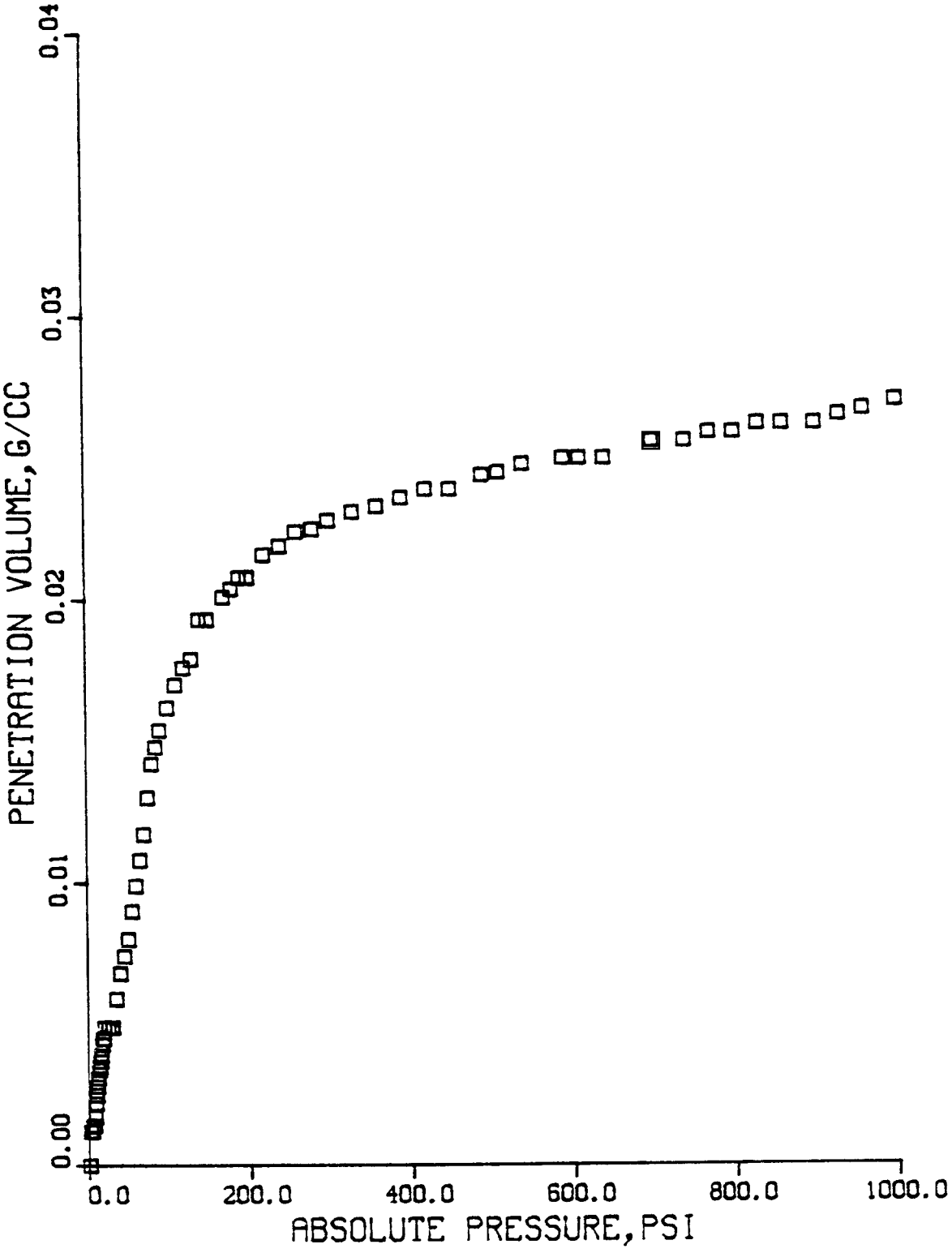
K 41009.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

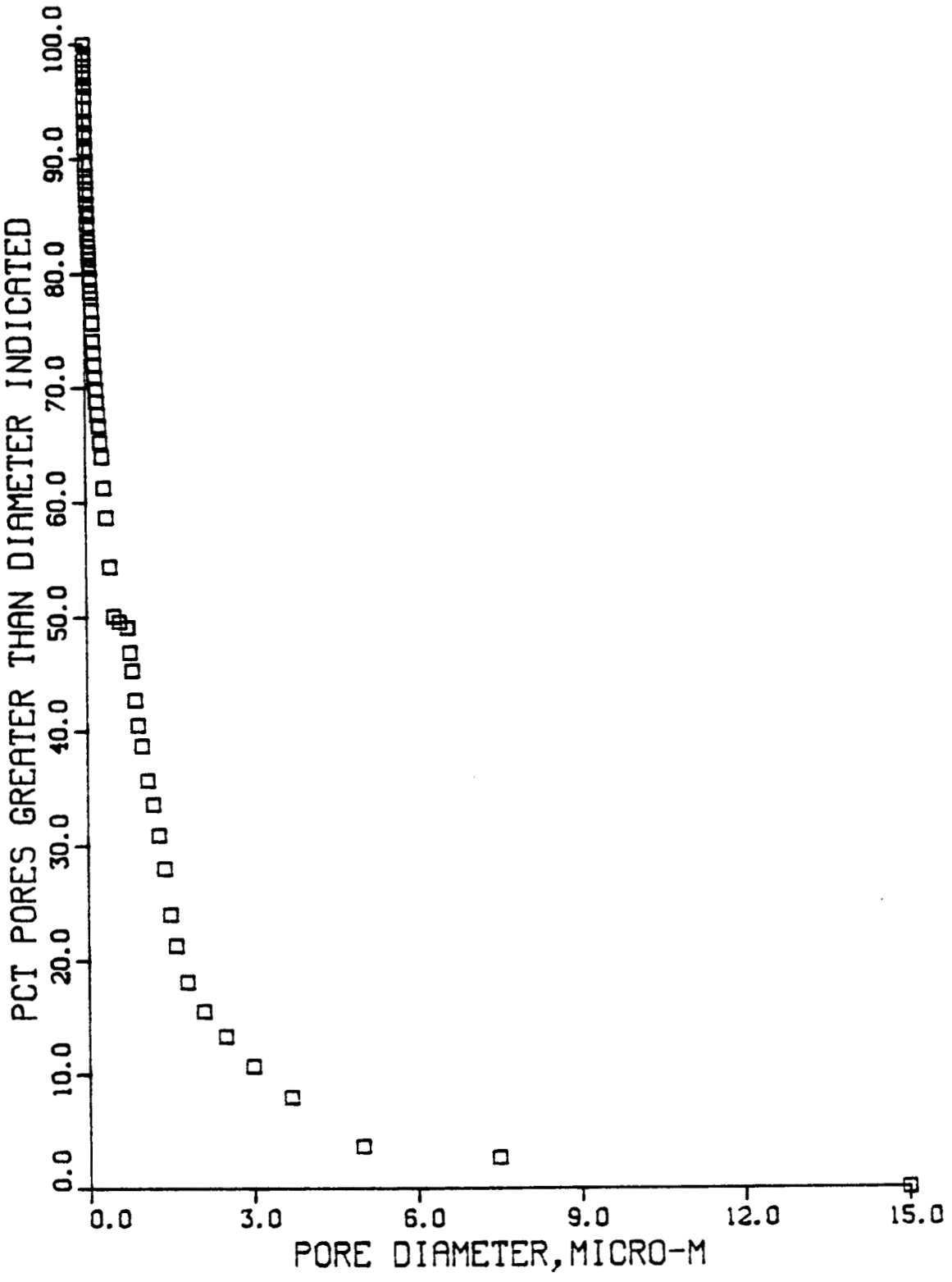
K 4 989.


PENETRATION VOLUME,G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE,PSI

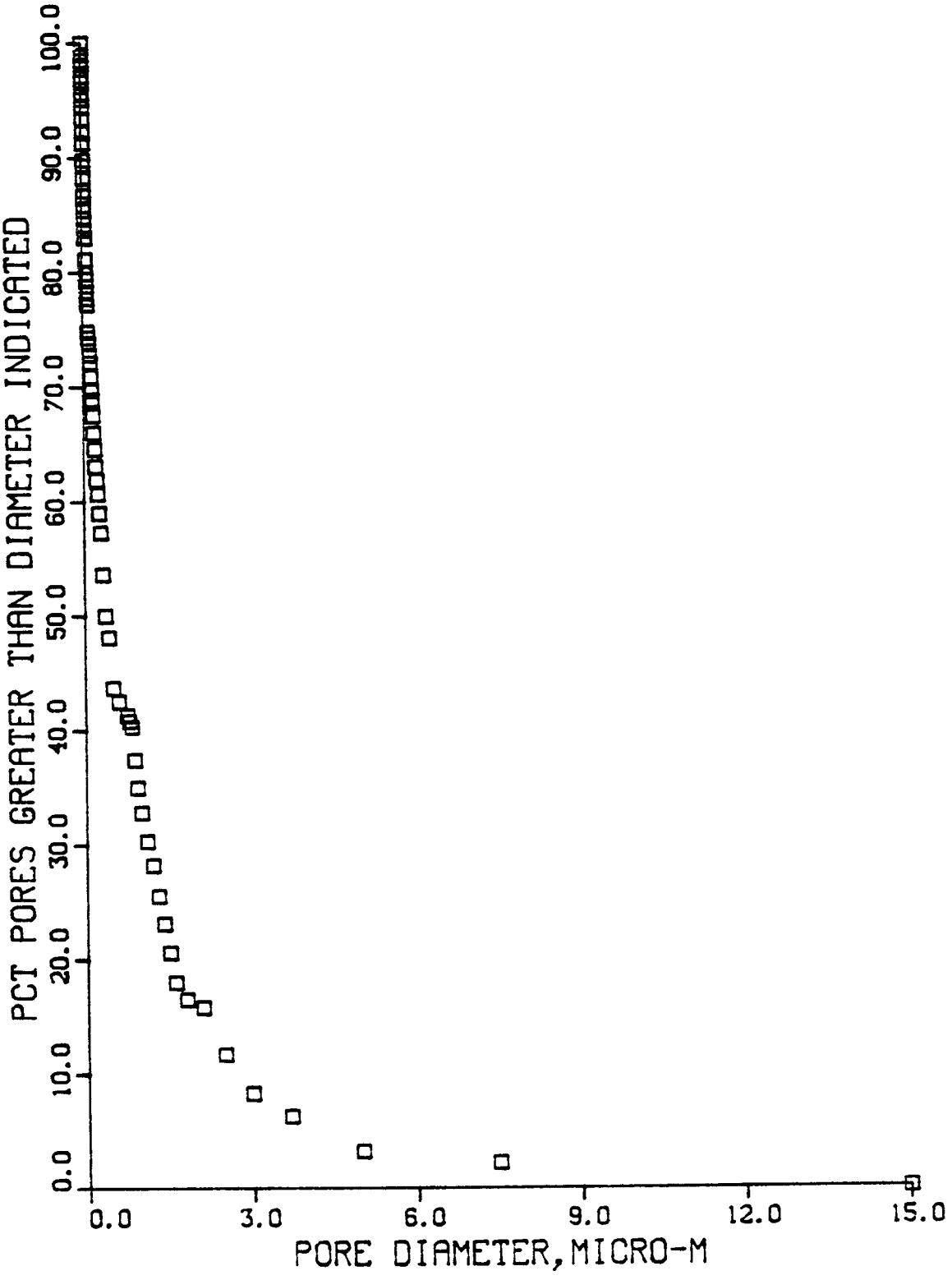
K 4 969.


PENETRATION VOLUME, G/CC
0.00
0.01
0.02
0.03
0.04
0.0
200.0
400.0
600.0
800.0
1000.0
ABSOLUTE PRESSURE, PSI

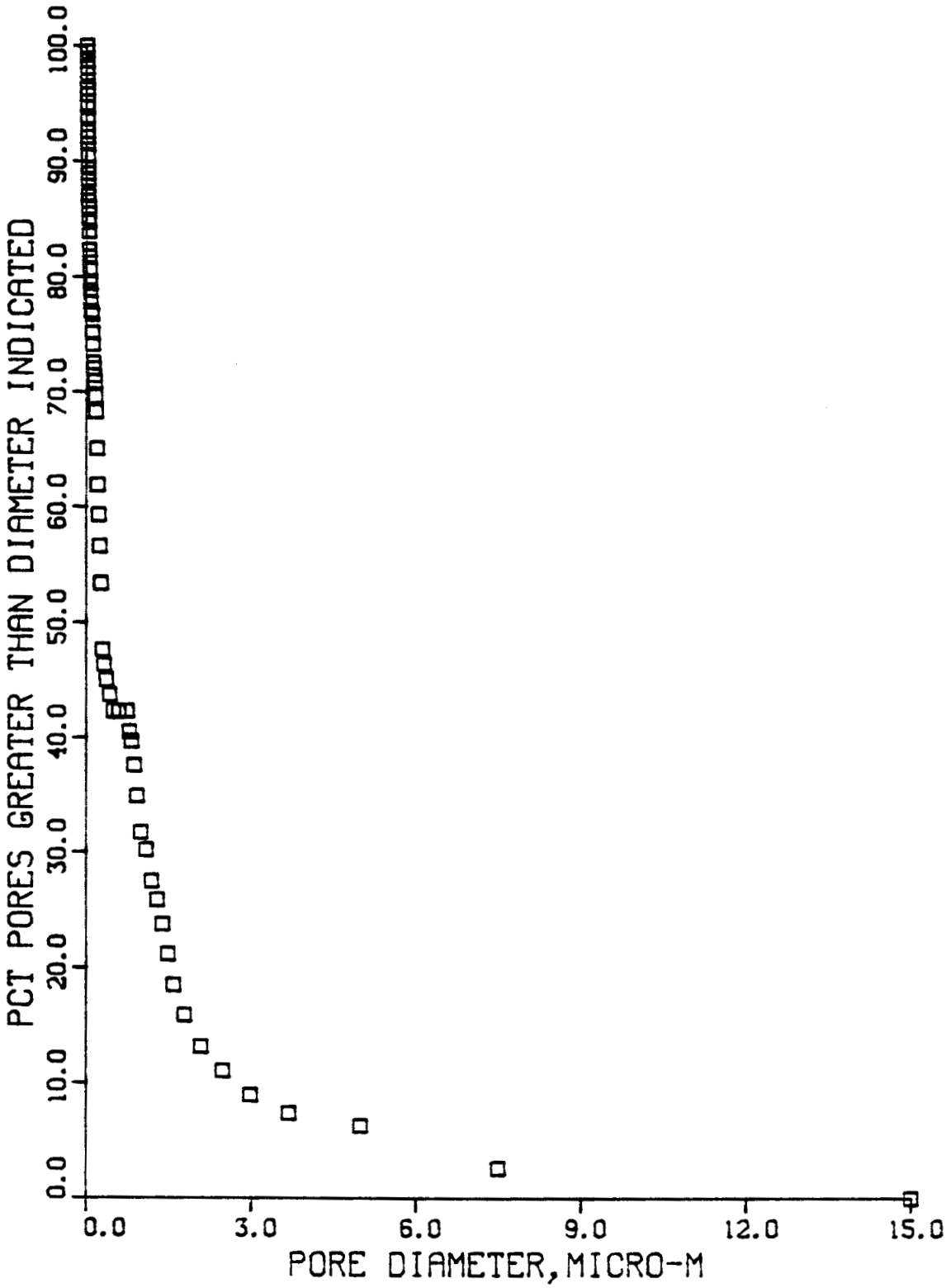
K 41495.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

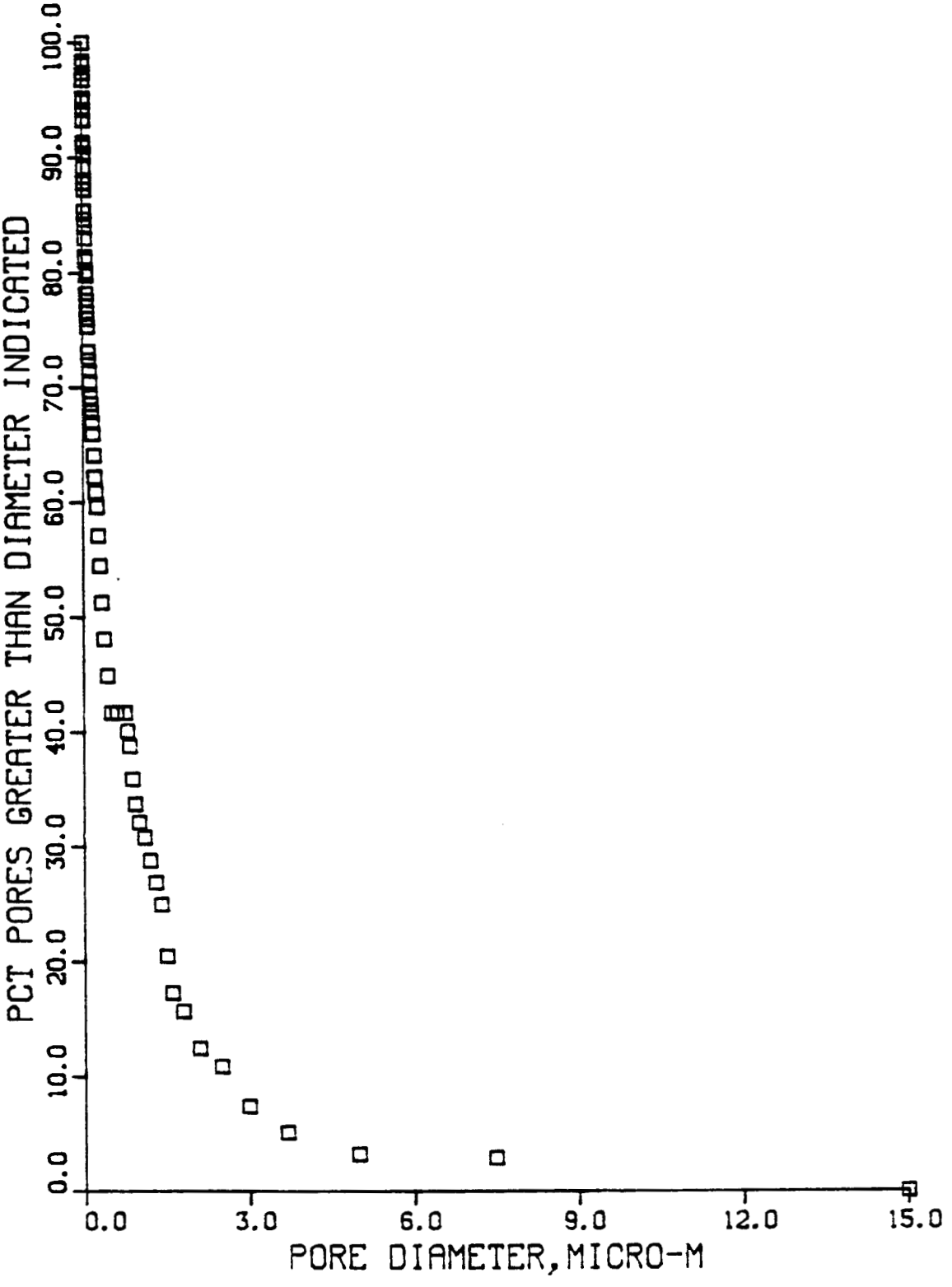
K 41476.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

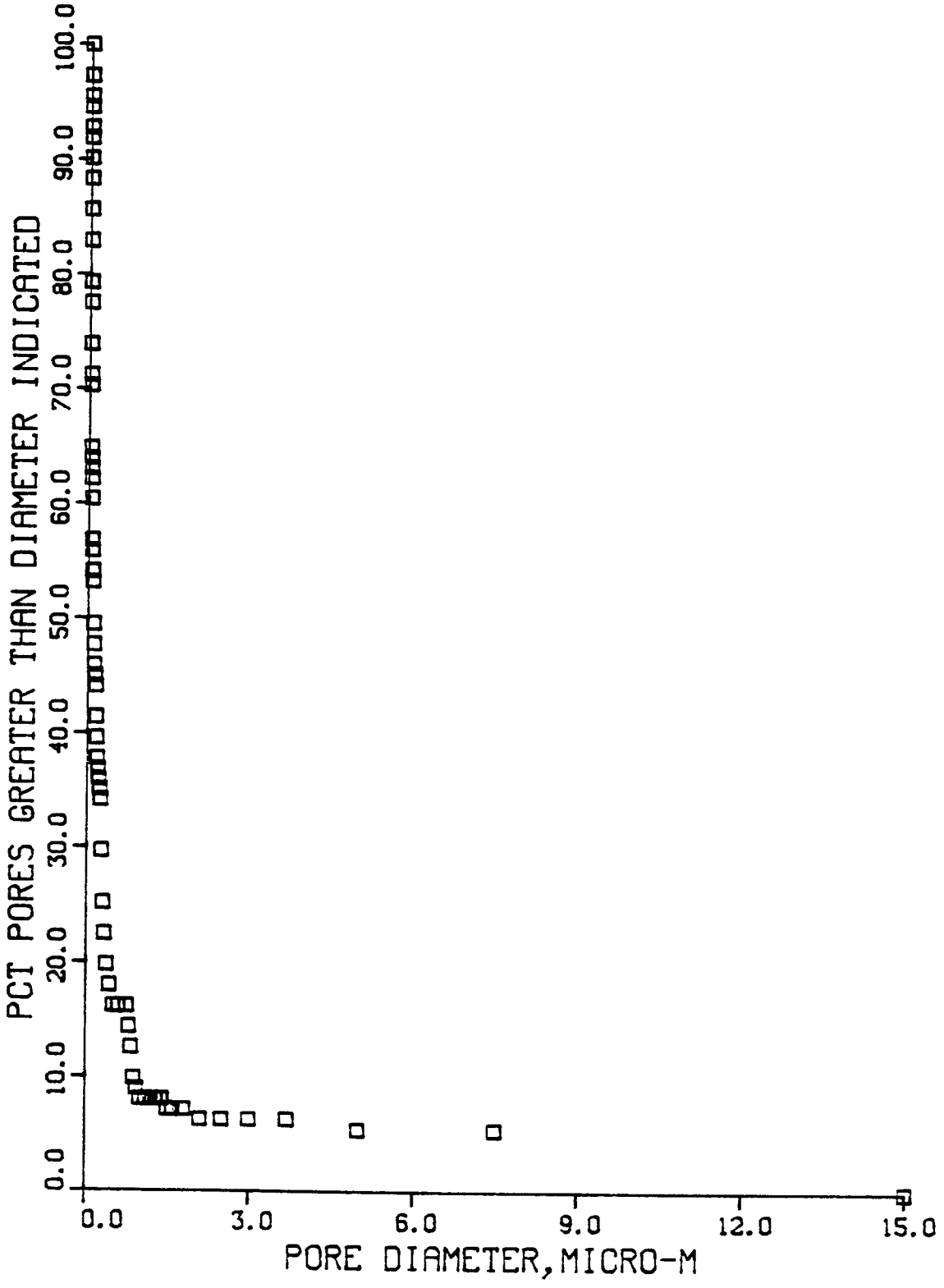
K 41456.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

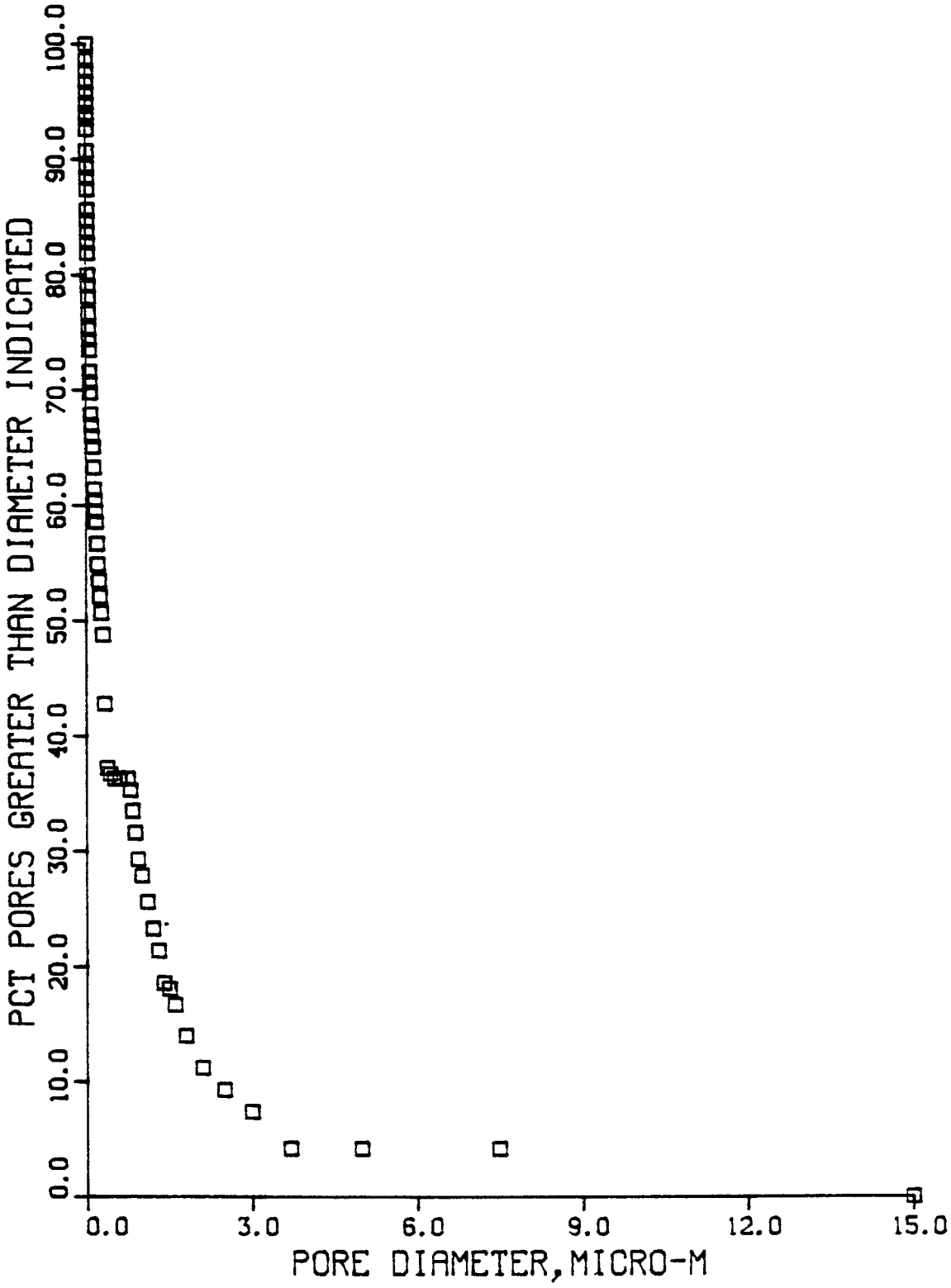
K 41436.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

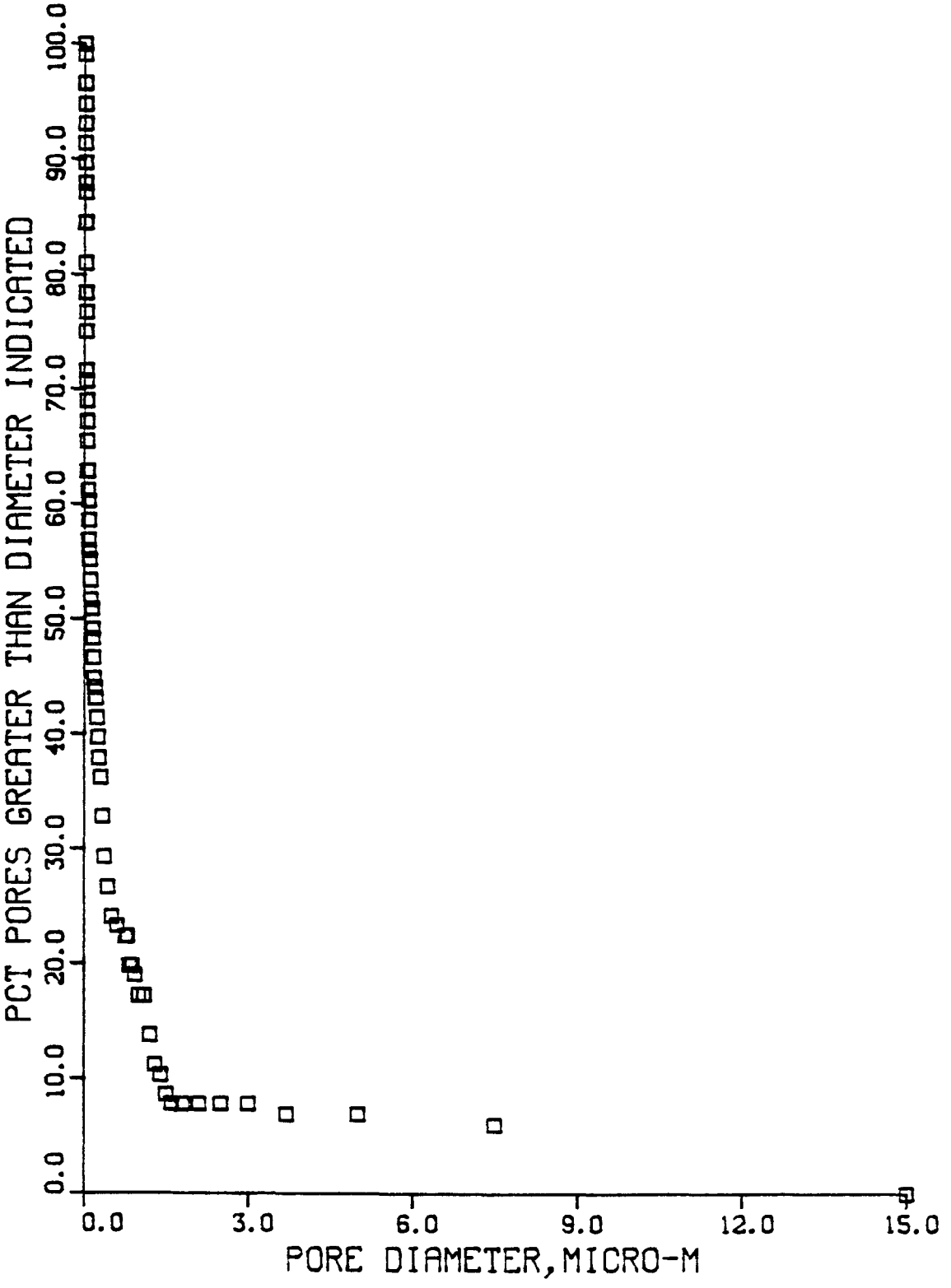
K 41419.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

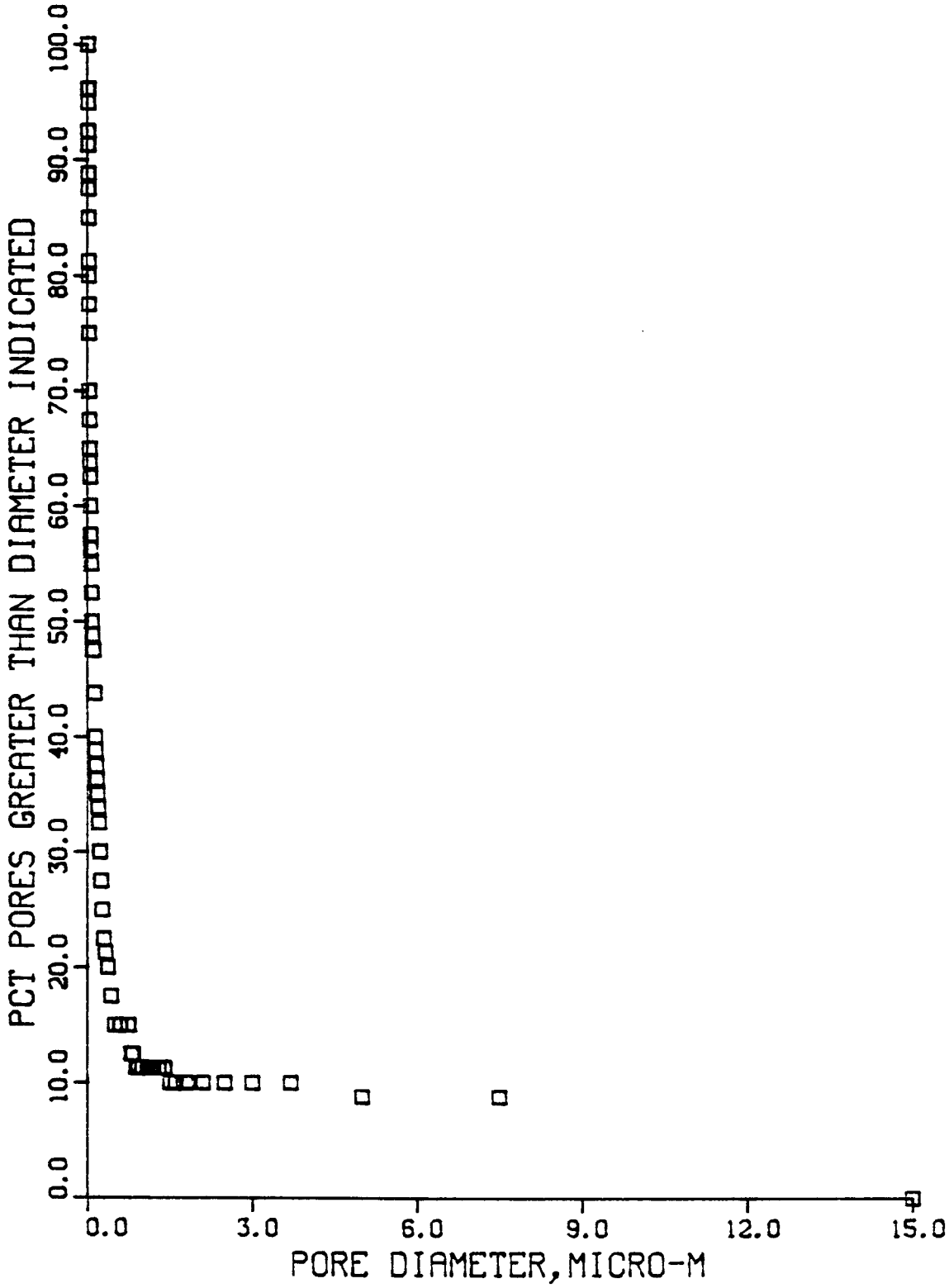
K 41399.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

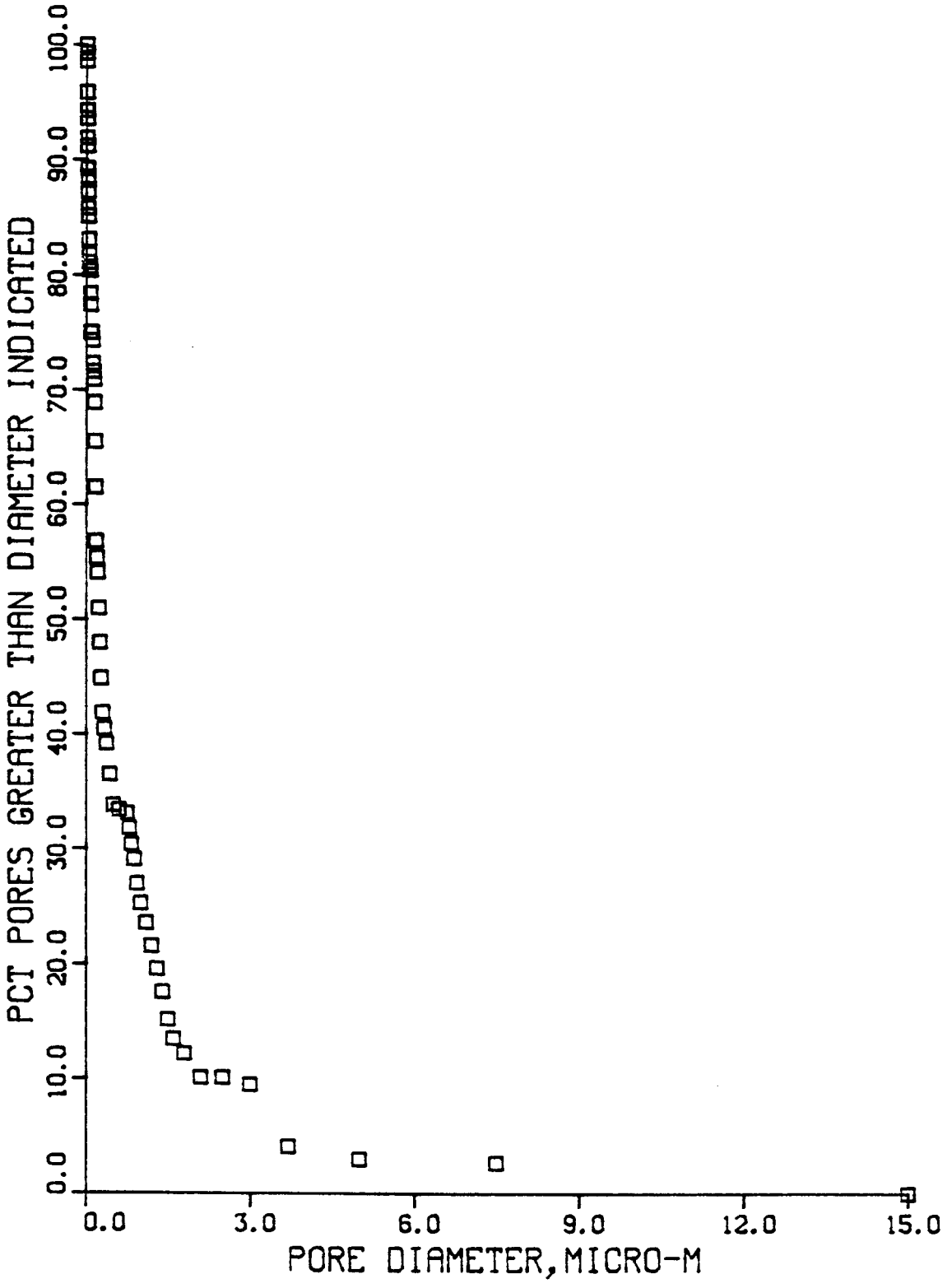
K 41379.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

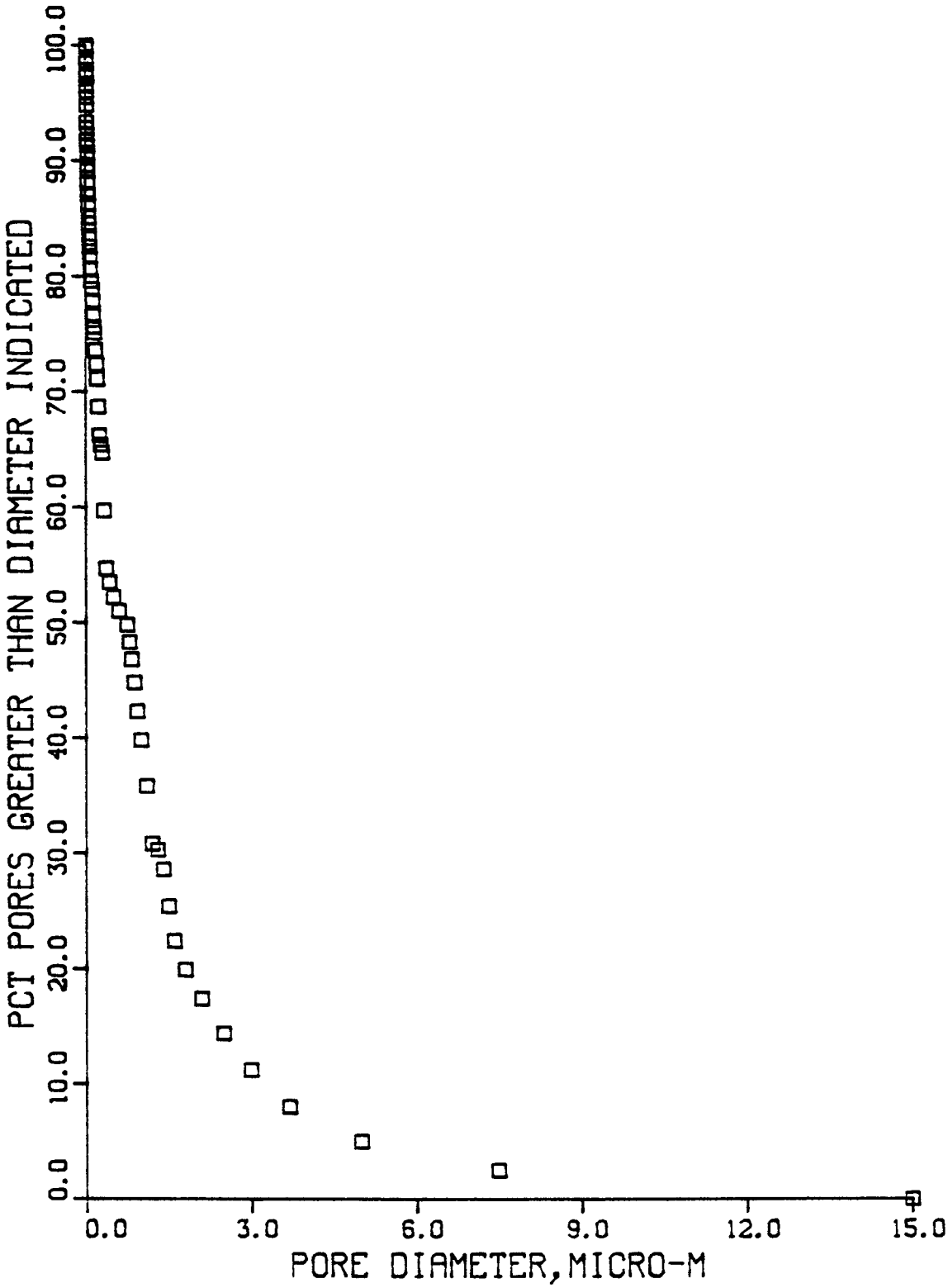
K 41359.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

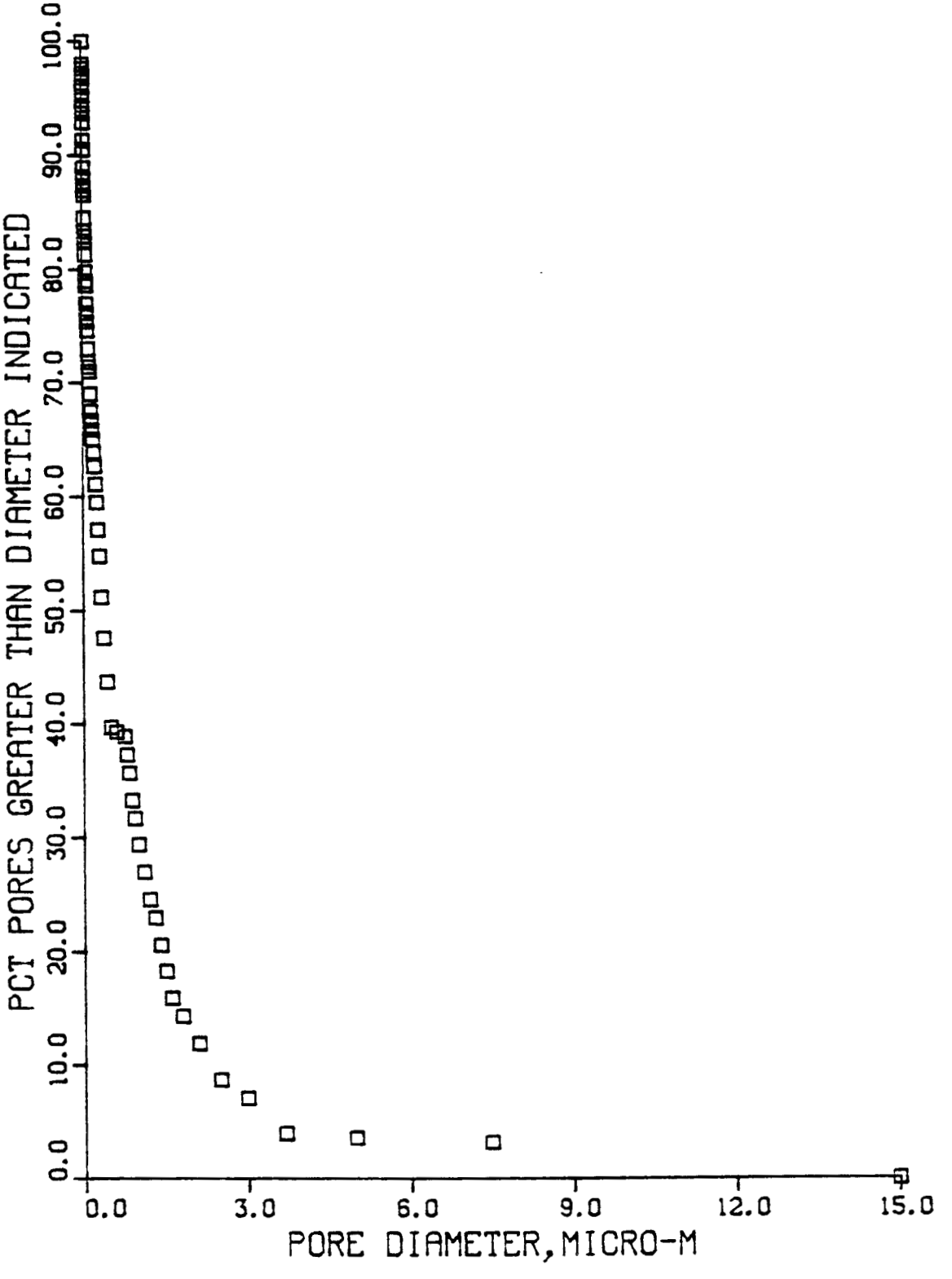
K 41339.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

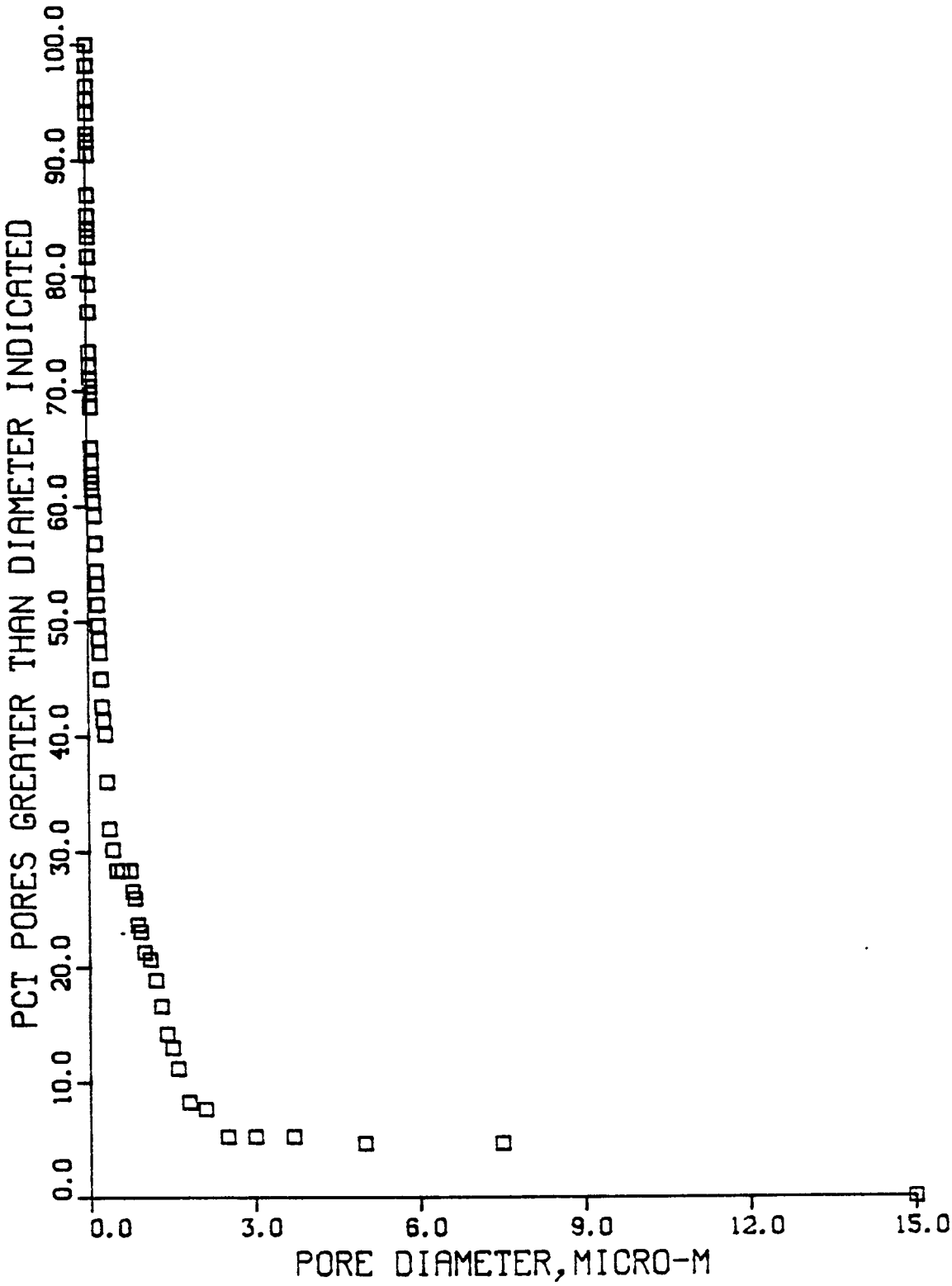
K 41319.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

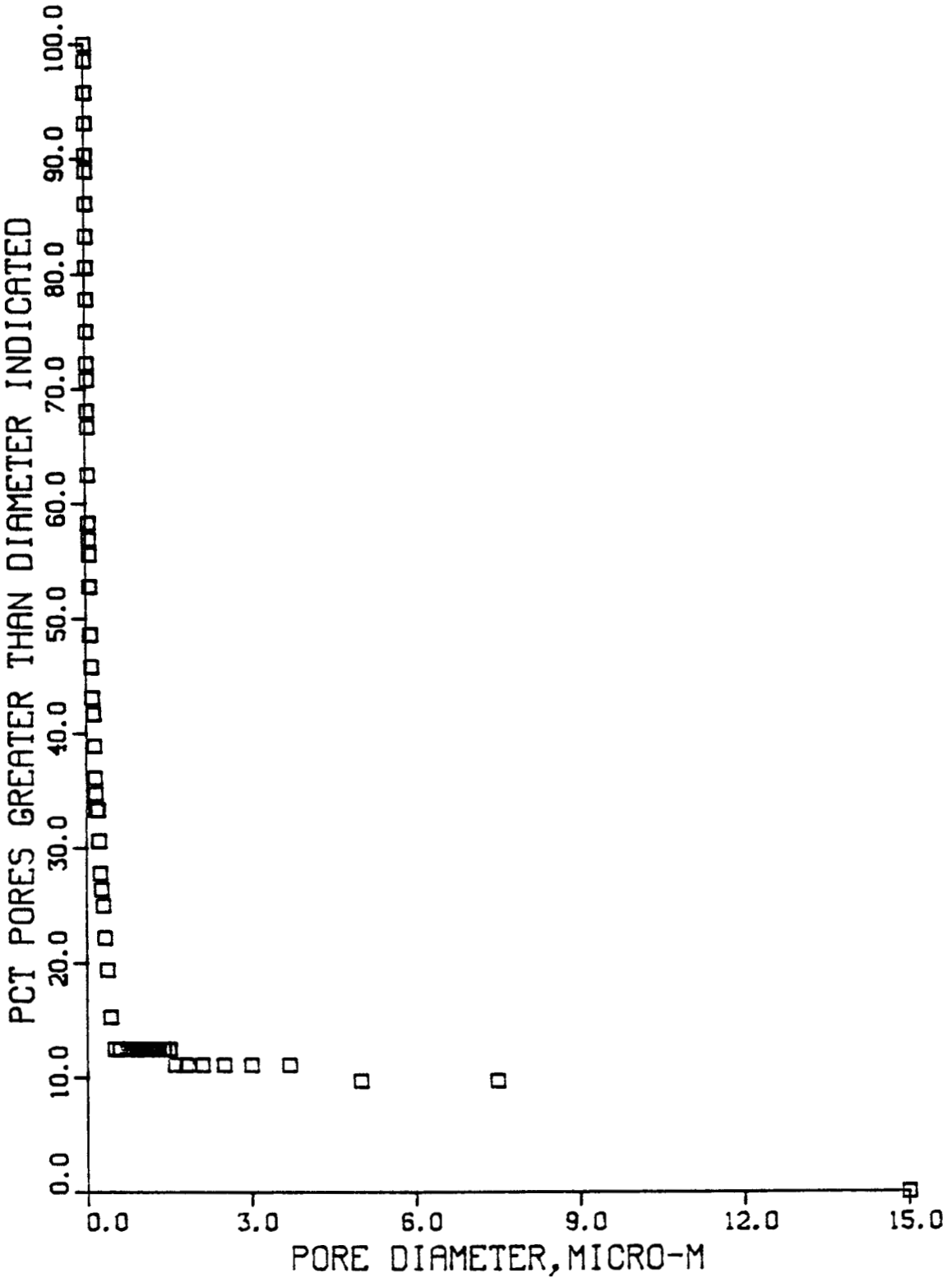
K 41300.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

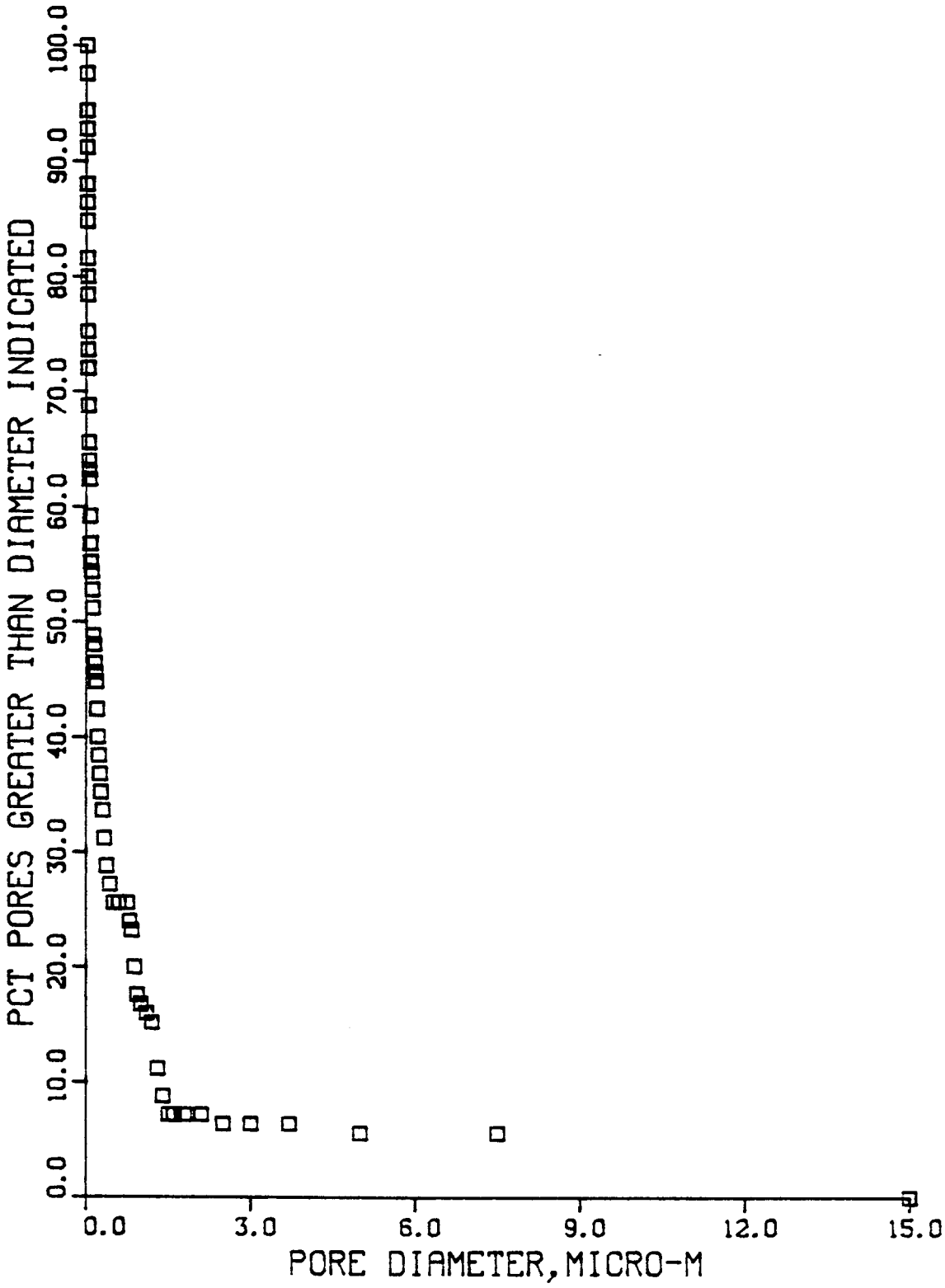
K 41260.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

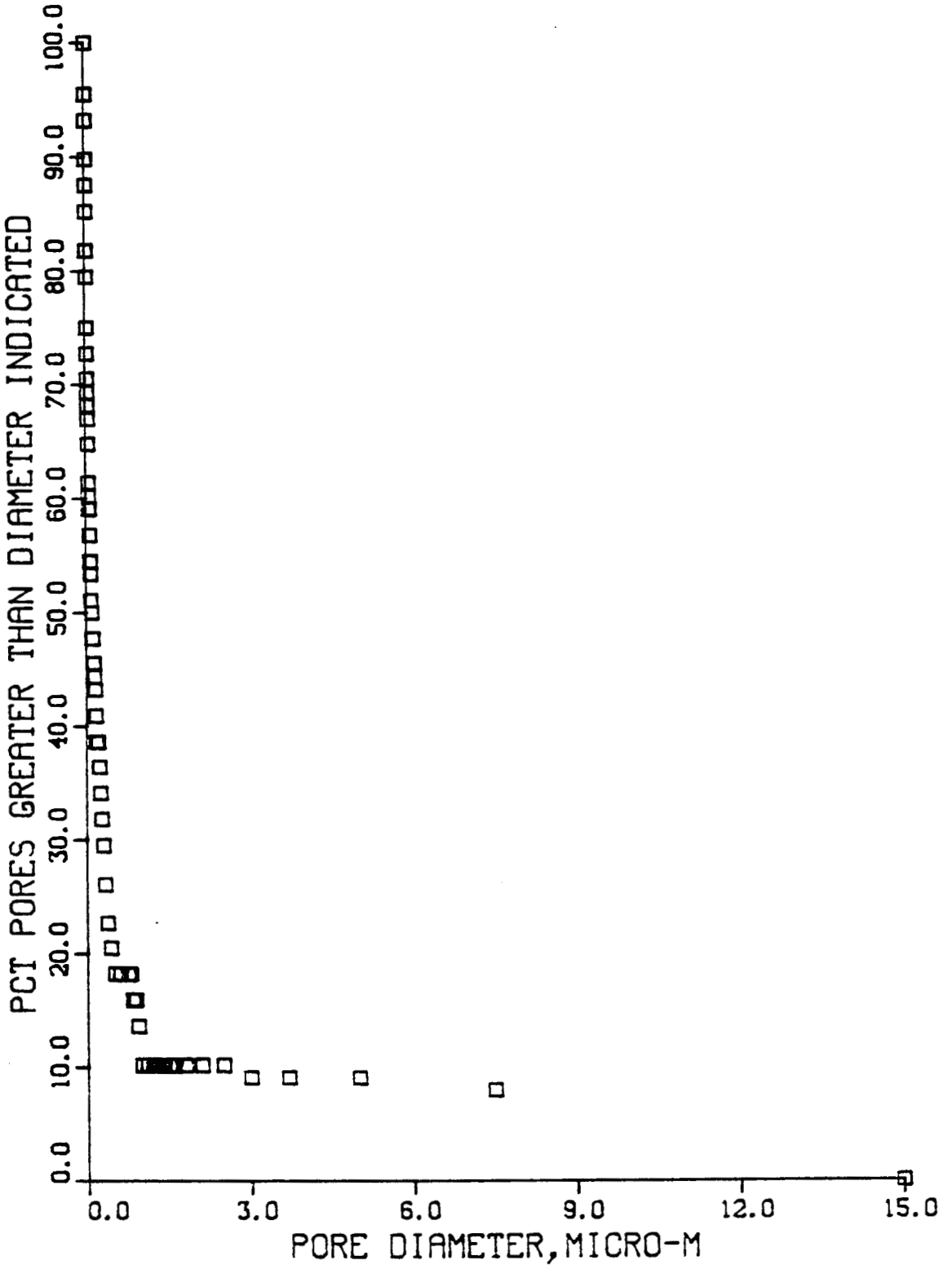
K 41241.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

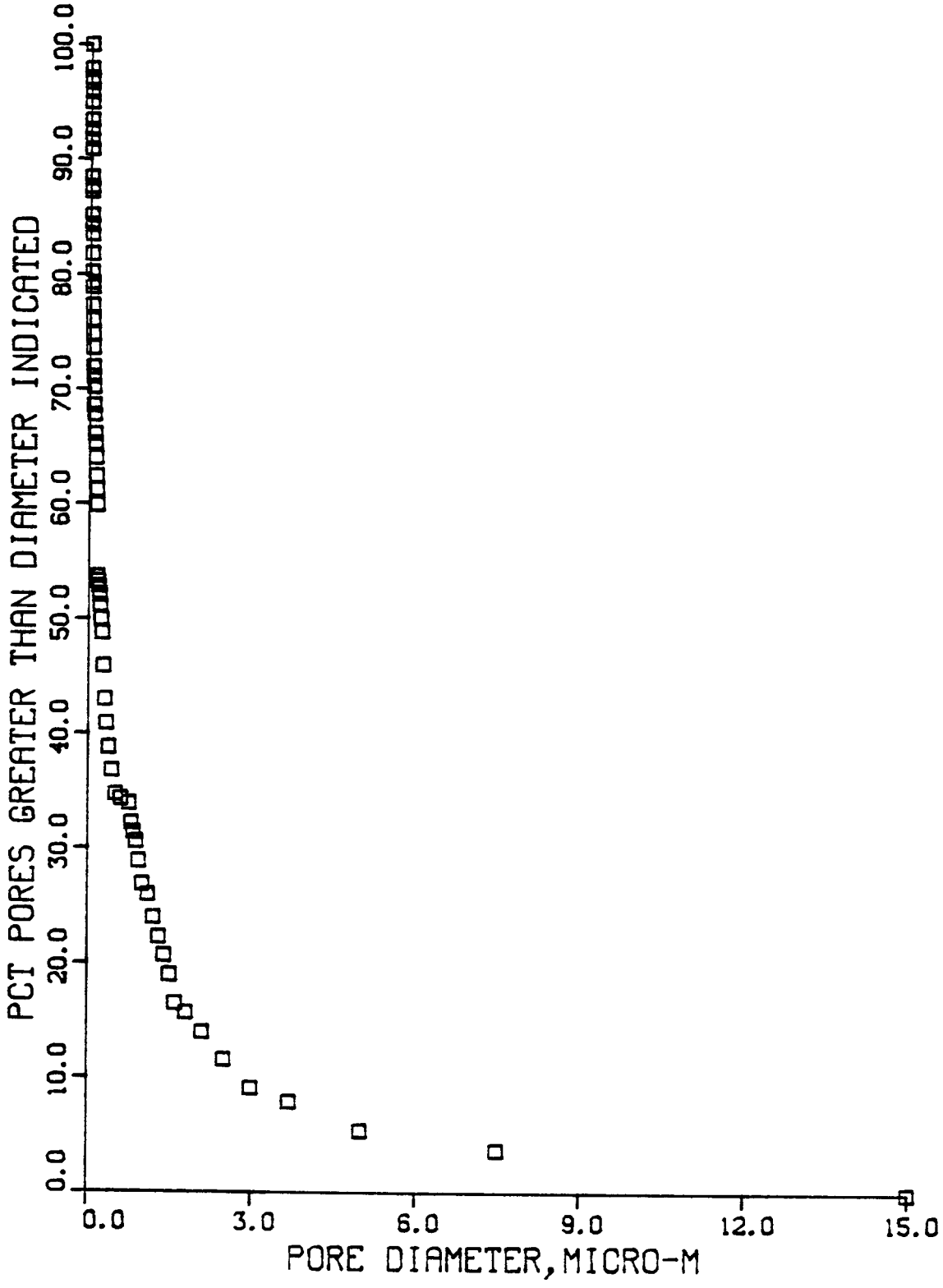
K 41221.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

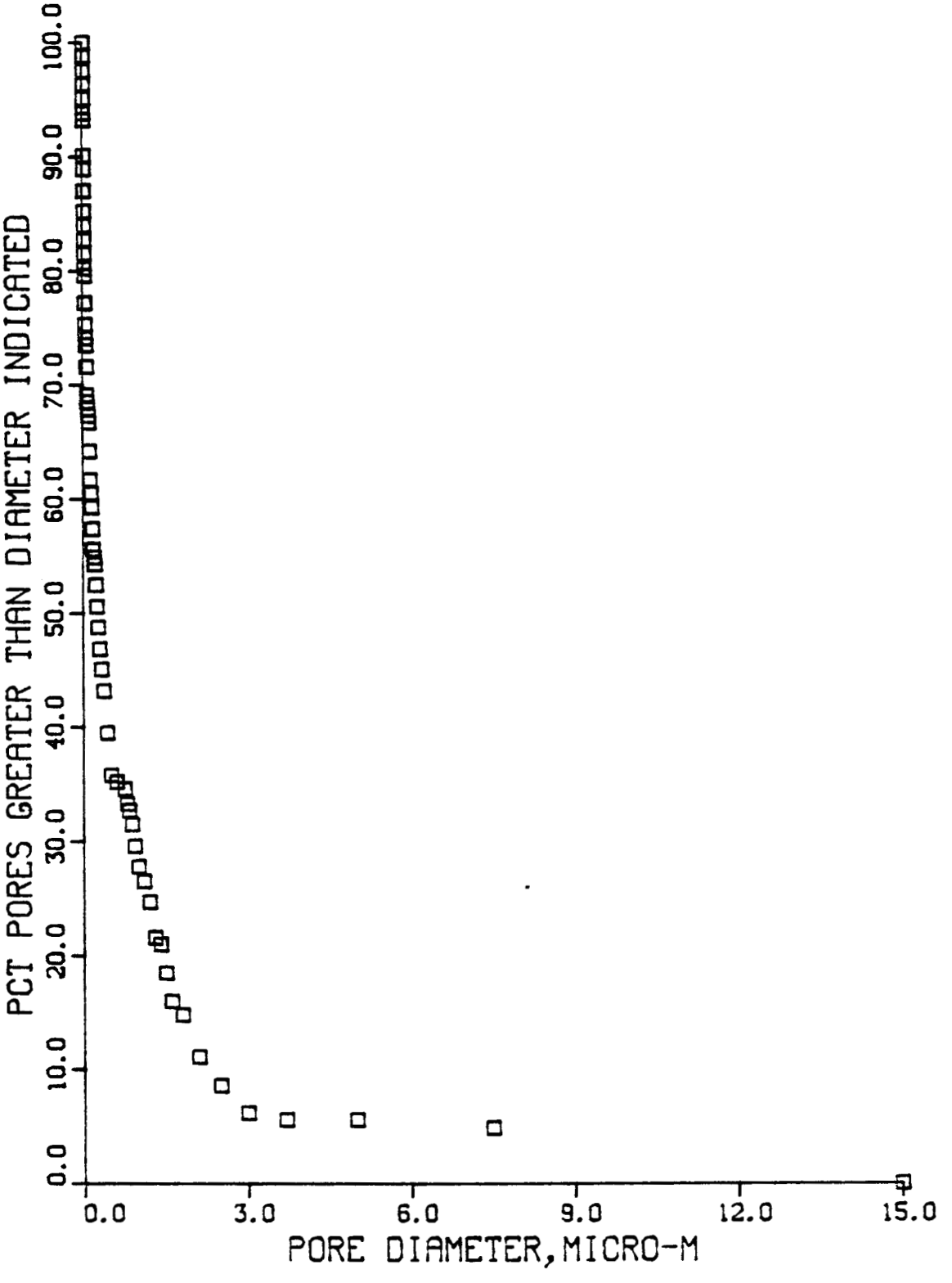
K 41201.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

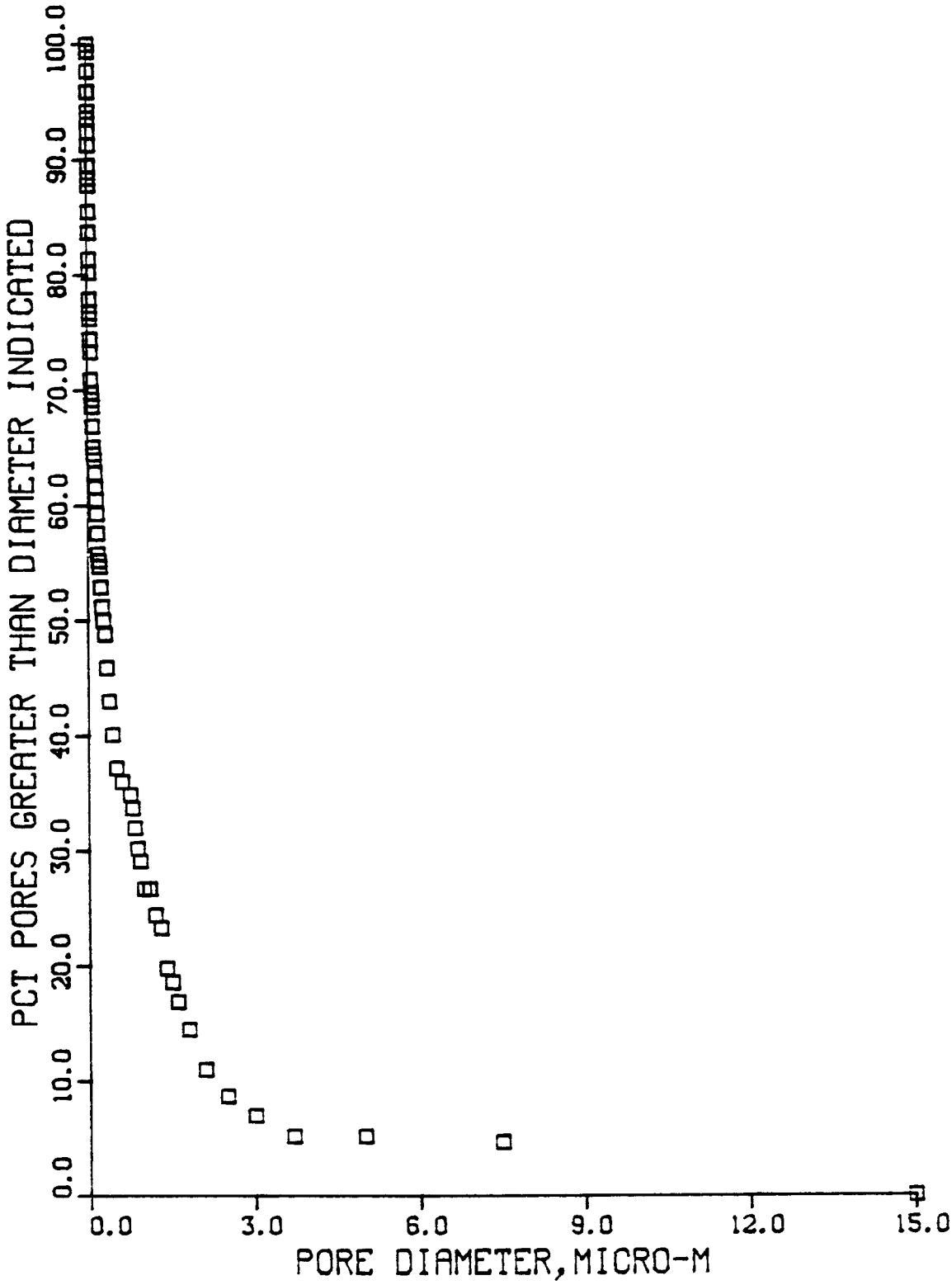
K 41183.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

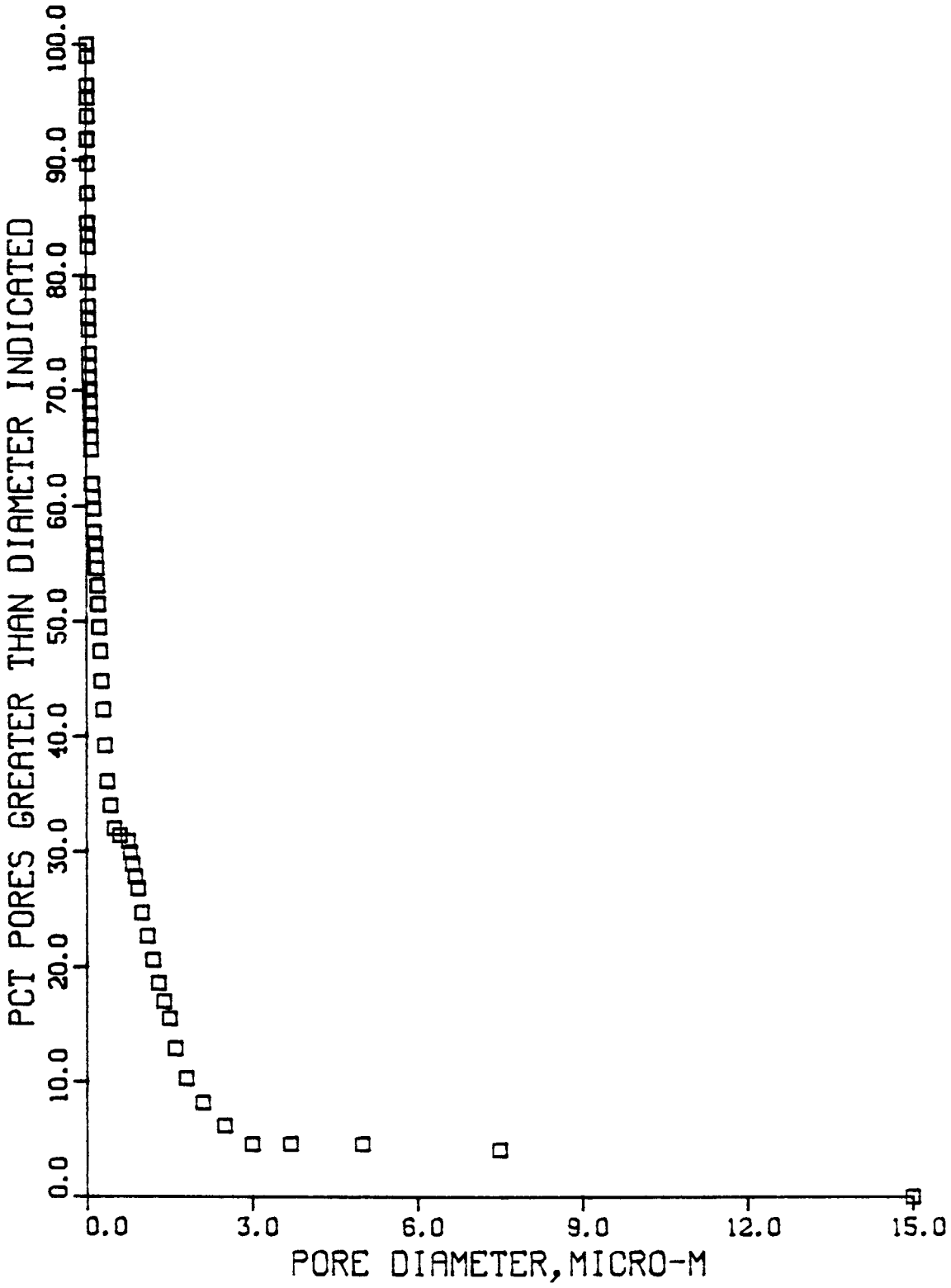
K 41163.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

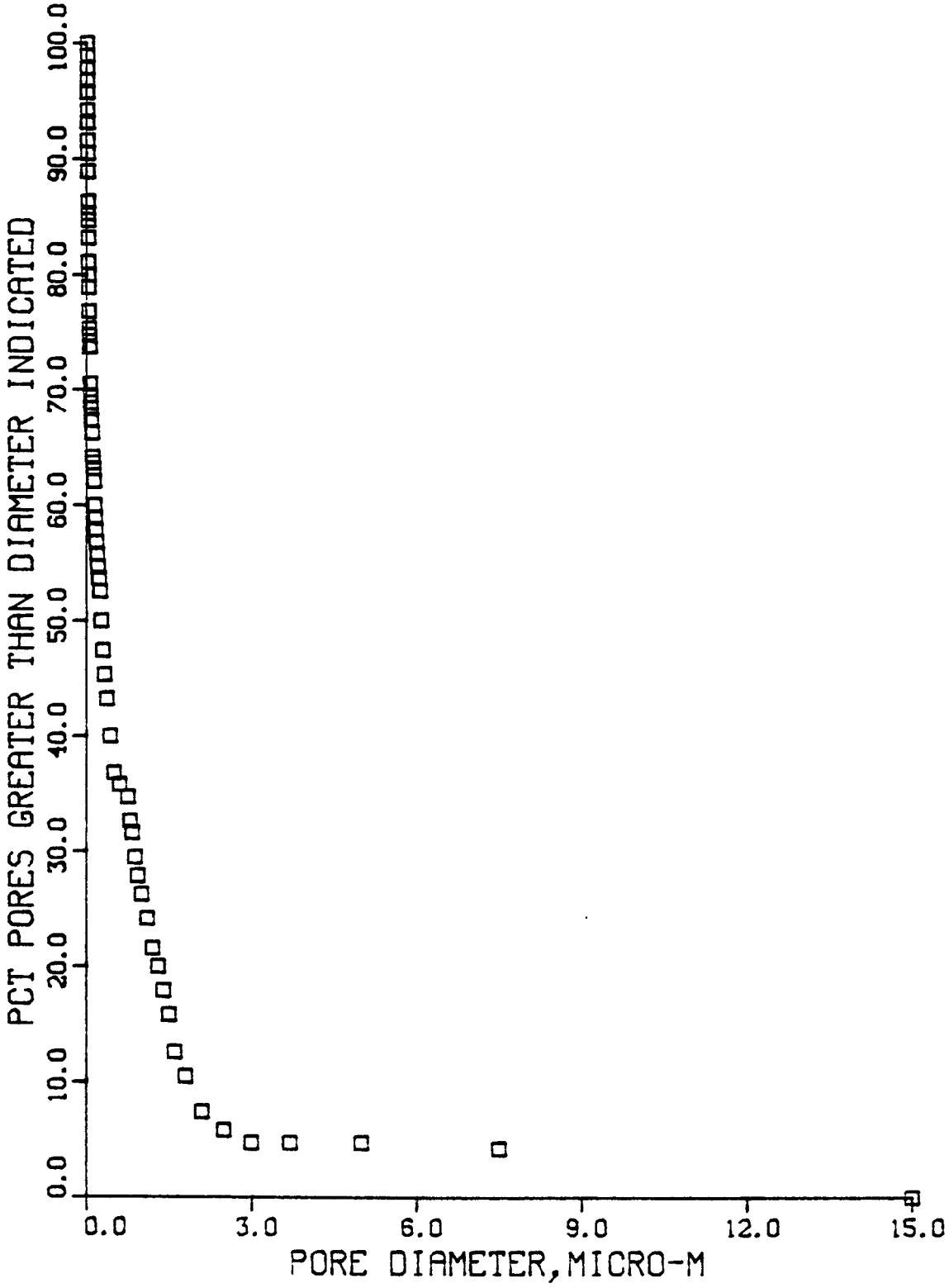
K 41143.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

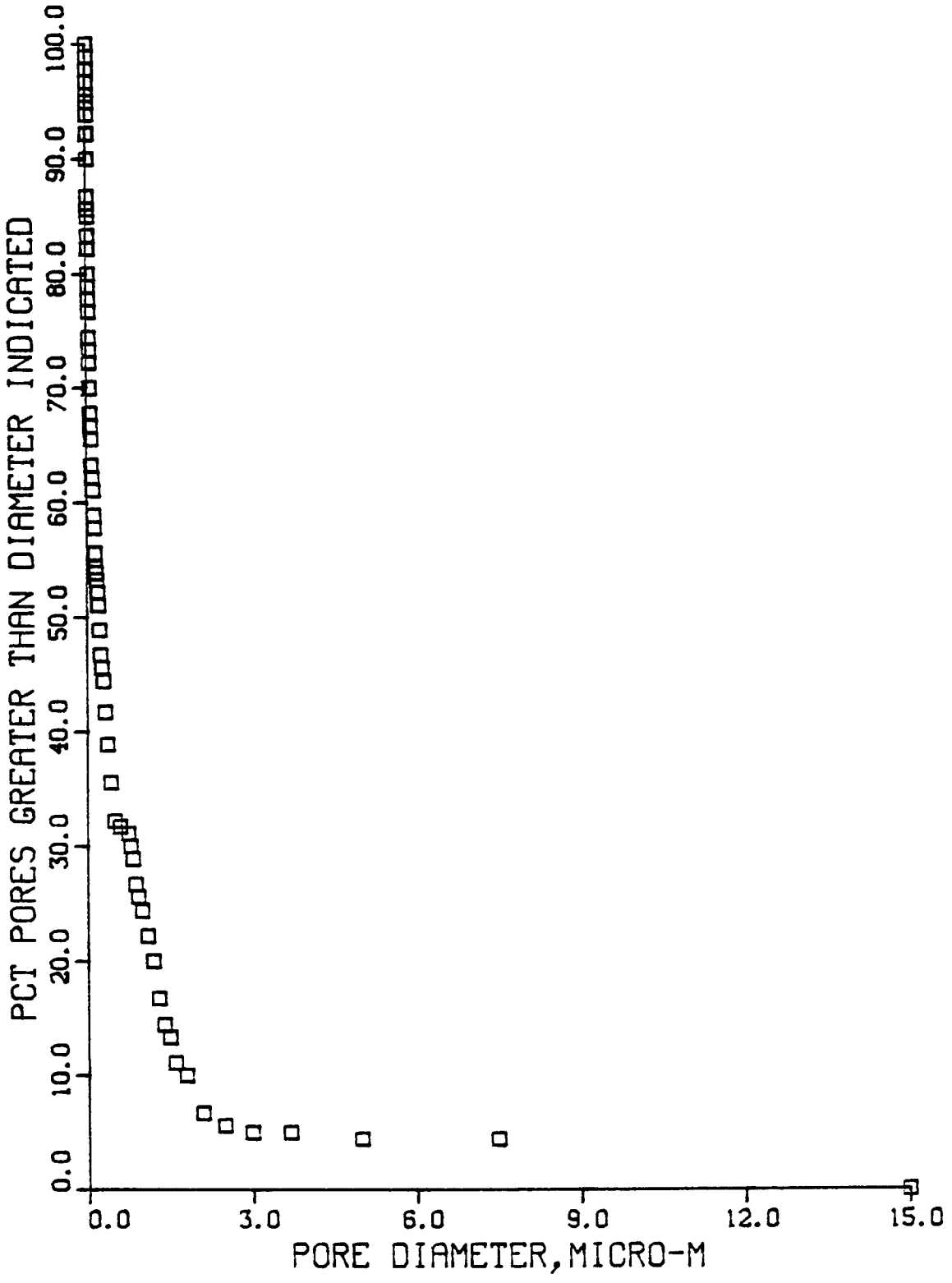
K 41126.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

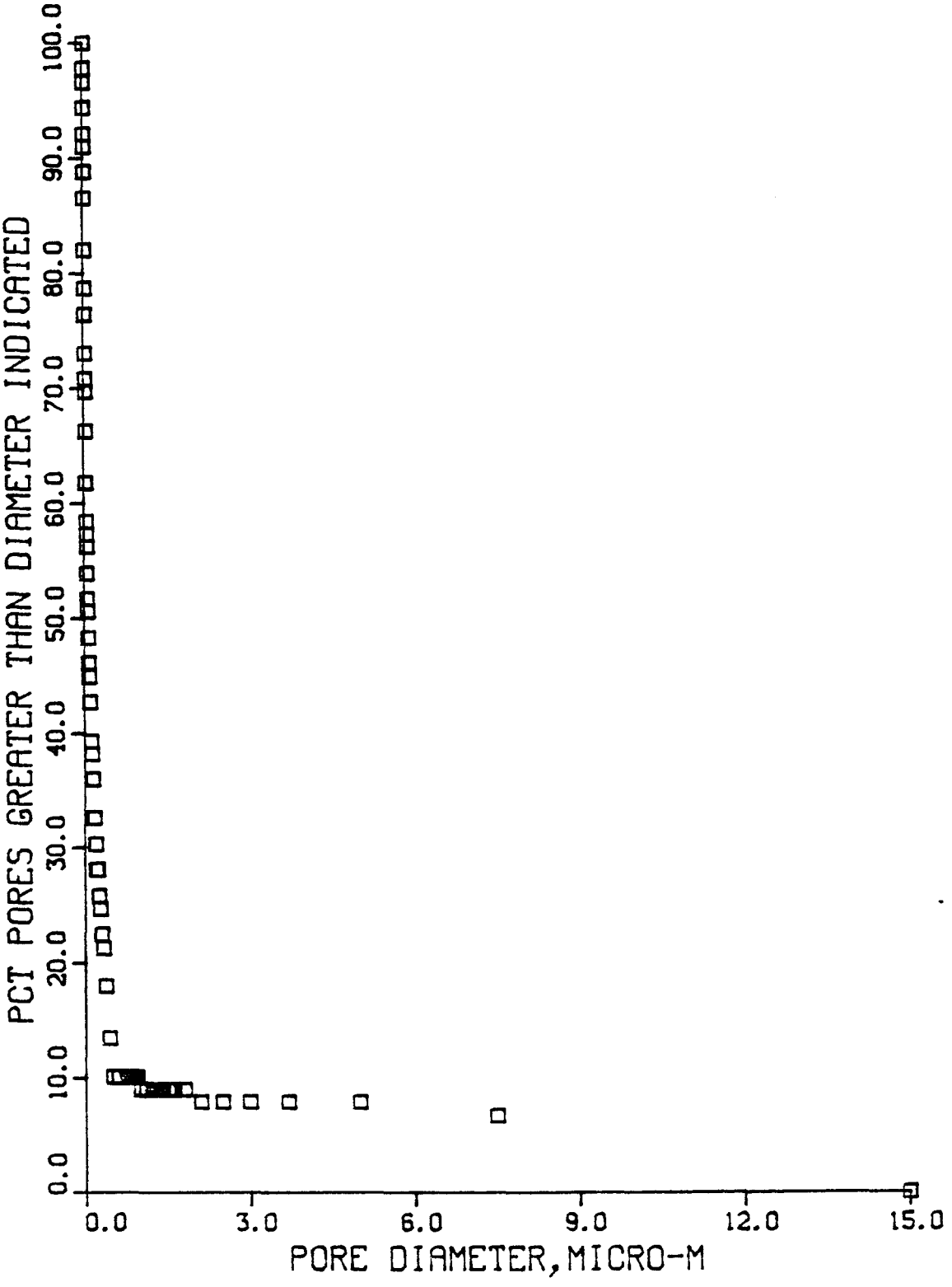
K 41096.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

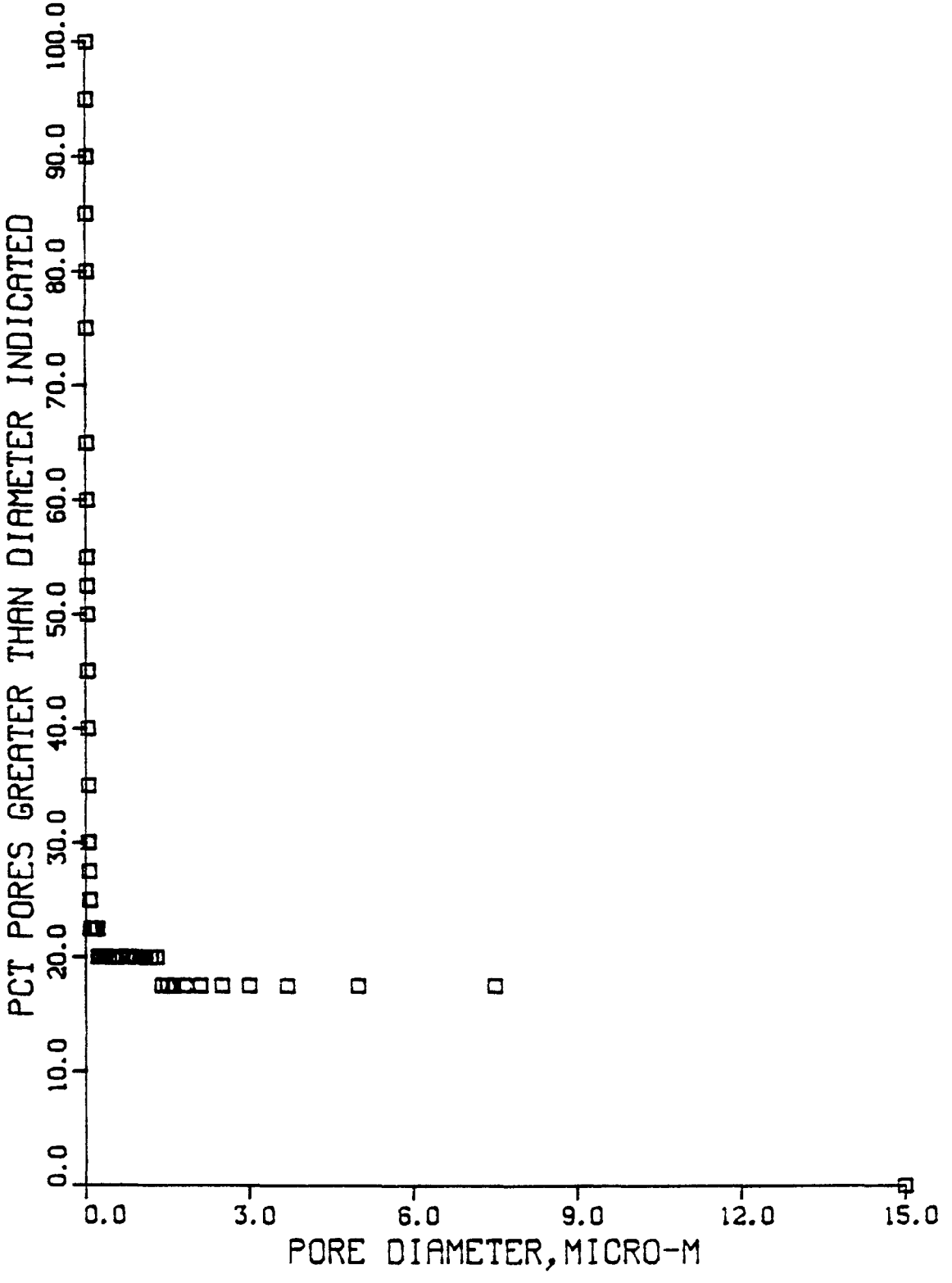
K 41079.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

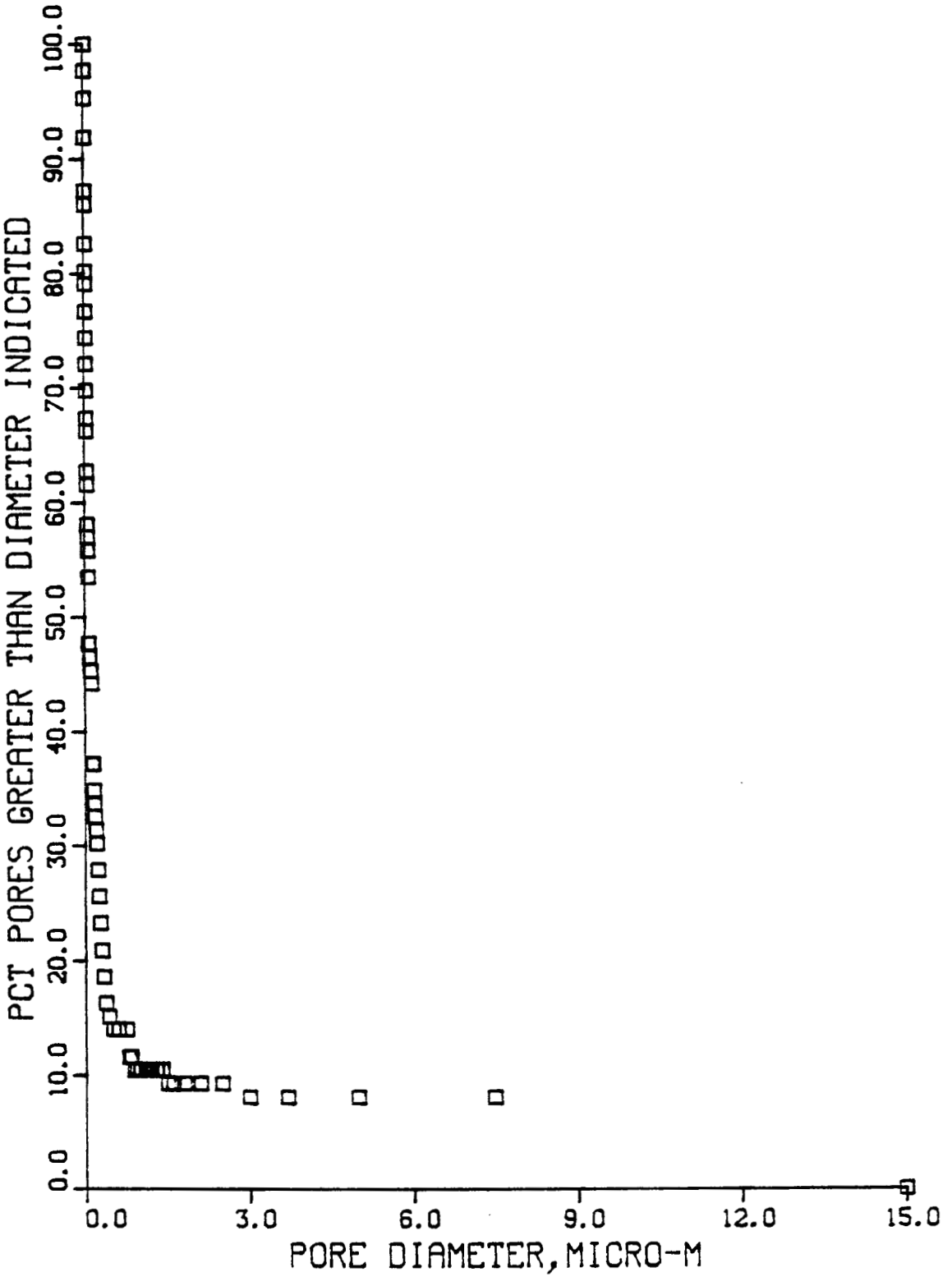
K 41059.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

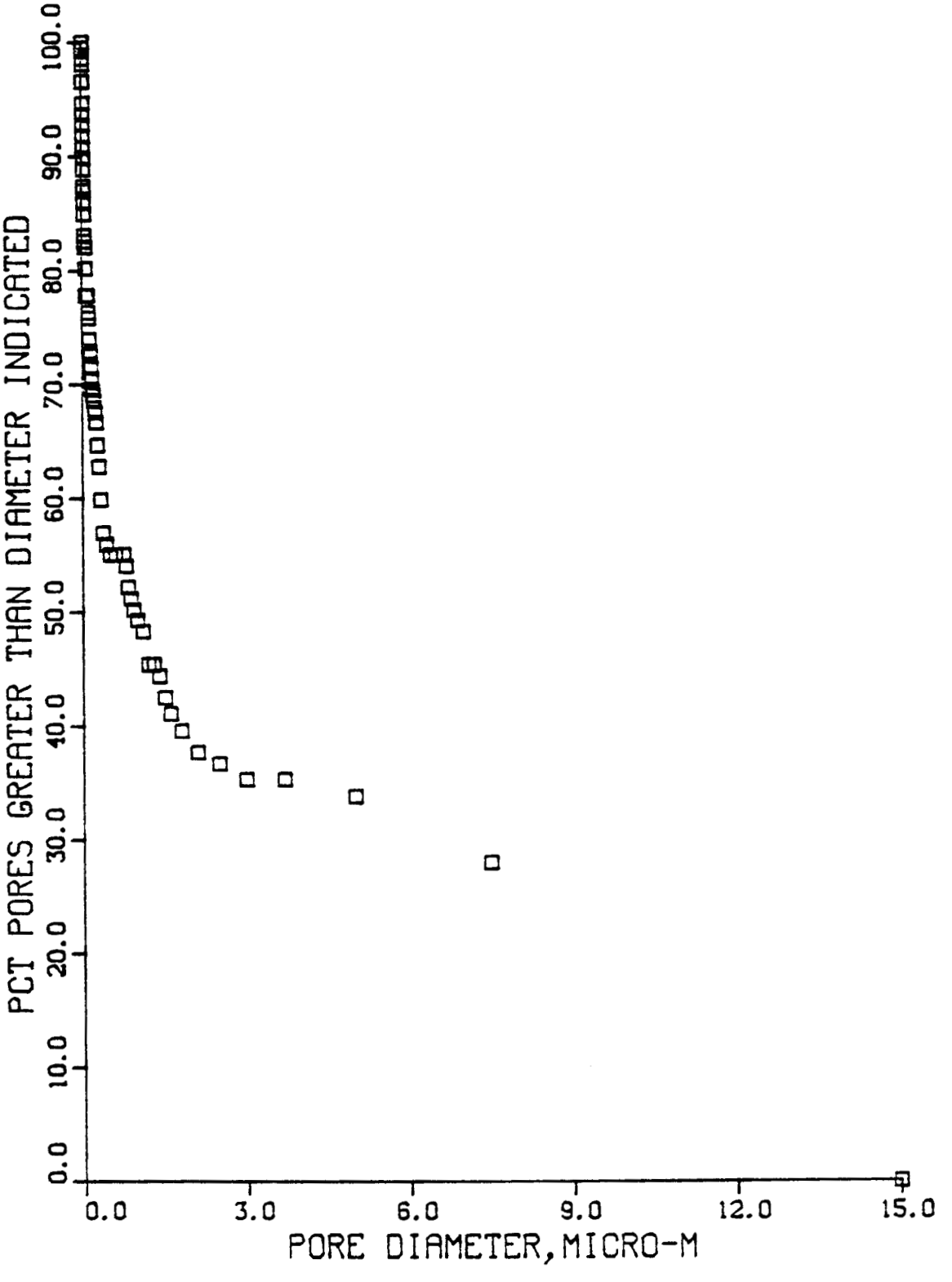
K 41039.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

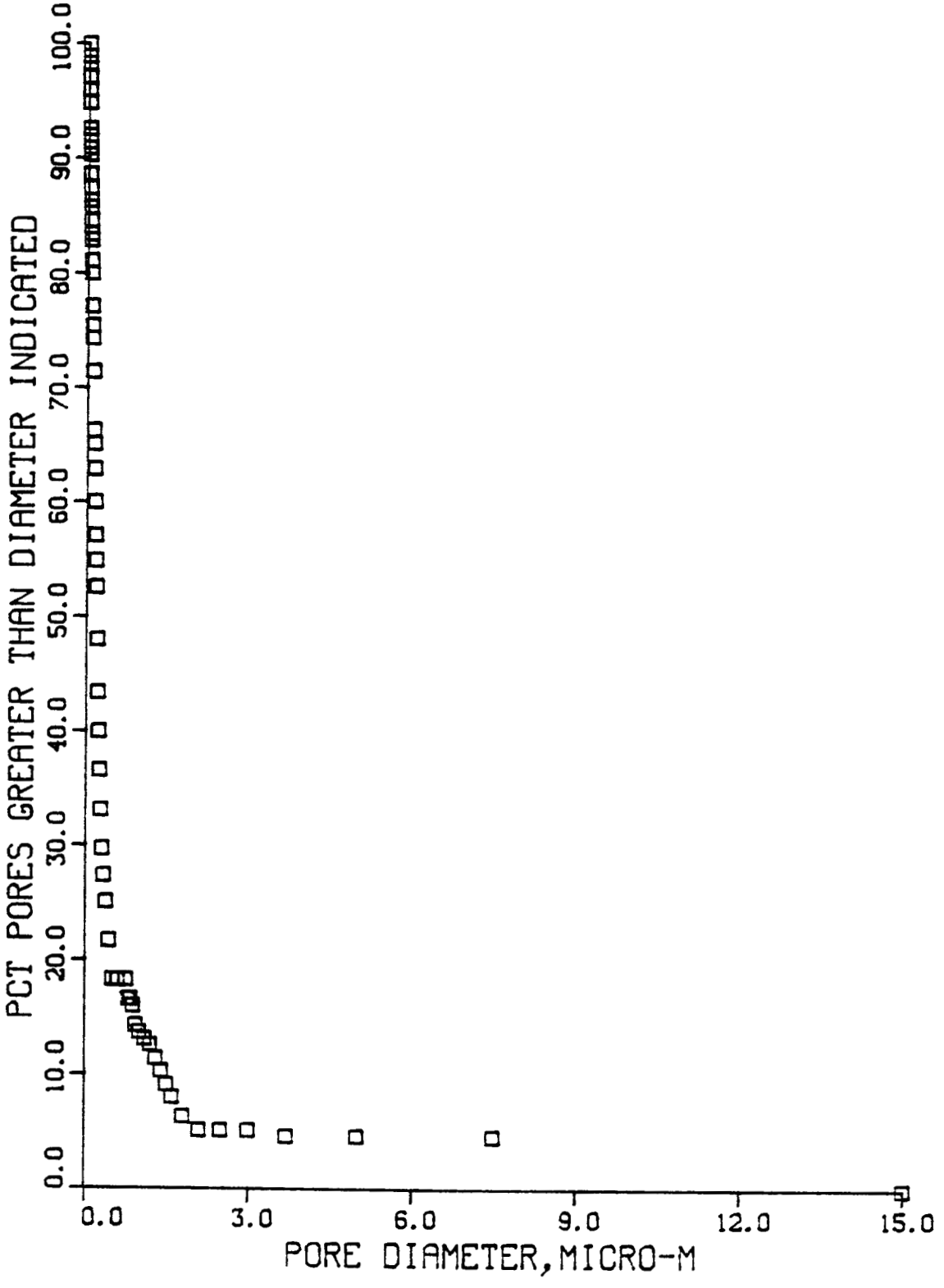
K 41009.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

K 4 989.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

K 4 969.


PCT PORES GREATER THAN DIAMETER INDICATED
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M