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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

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505 King Avenue
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## 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 $5.0 \times 10^{-7}$ and $1.1 \times 10^{-6}$ $cm^2/sec$, 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 | PRESSURE TORR | FUEL 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # 4-14[illegible]. | 14[illegible]. | 567. | 883. | 5.69 | 47.13 | 5.18 | 2.10 | .49 | .11 | 55.01 | 41.96 | .54 | 2.51 | .67 | 48 |
| # 4-14[illegible]. | 1300. | [illegible]. | 826. | 16.06 | 42.60 | 4.65 | 1.75 | .38 | .08 | 49.46 | 46.73 | .60 | 3.21 | .64 | 49 |
| # 4-1466. | 7[illegible]. | [illegible]. | 307. | 7.92 | 4.67 | .45 | .10 | .03 | 0.00 | 5.25 | 78.87 | 15.78 | .12 | .04 | 50 |
| # 4-1[illegible]. | 1[illegible]. | 761. | [illegible]. | 5.06 | 40.37 | 3.95 | 1.42 | .32 | .07 | 46.13 | 48.87 | 1.64 | 3.37 | .84 | 51 |
| # 4-14[illegible]. | 1[illegible]. | [illegible]. | 641. | 6.56 | 30.46 | 4.61 | 2.69 | .87 | .28 | 38.91 | 57.06 | .76 | 3.28 | .68 | 52 |
| # 4-14[illegible]. | 7[illegible]. | [illegible]. | 898. | 8.54 | 3.98 | .24 | .17 | .04 | 0.00 | 4.43 | 77.98 | 17.46 | .16 | .03 | 53 |
| # 4-150[illegible]. | 7[illegible]. | [illegible]. | 611. | 8.16 | 1.60 | .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

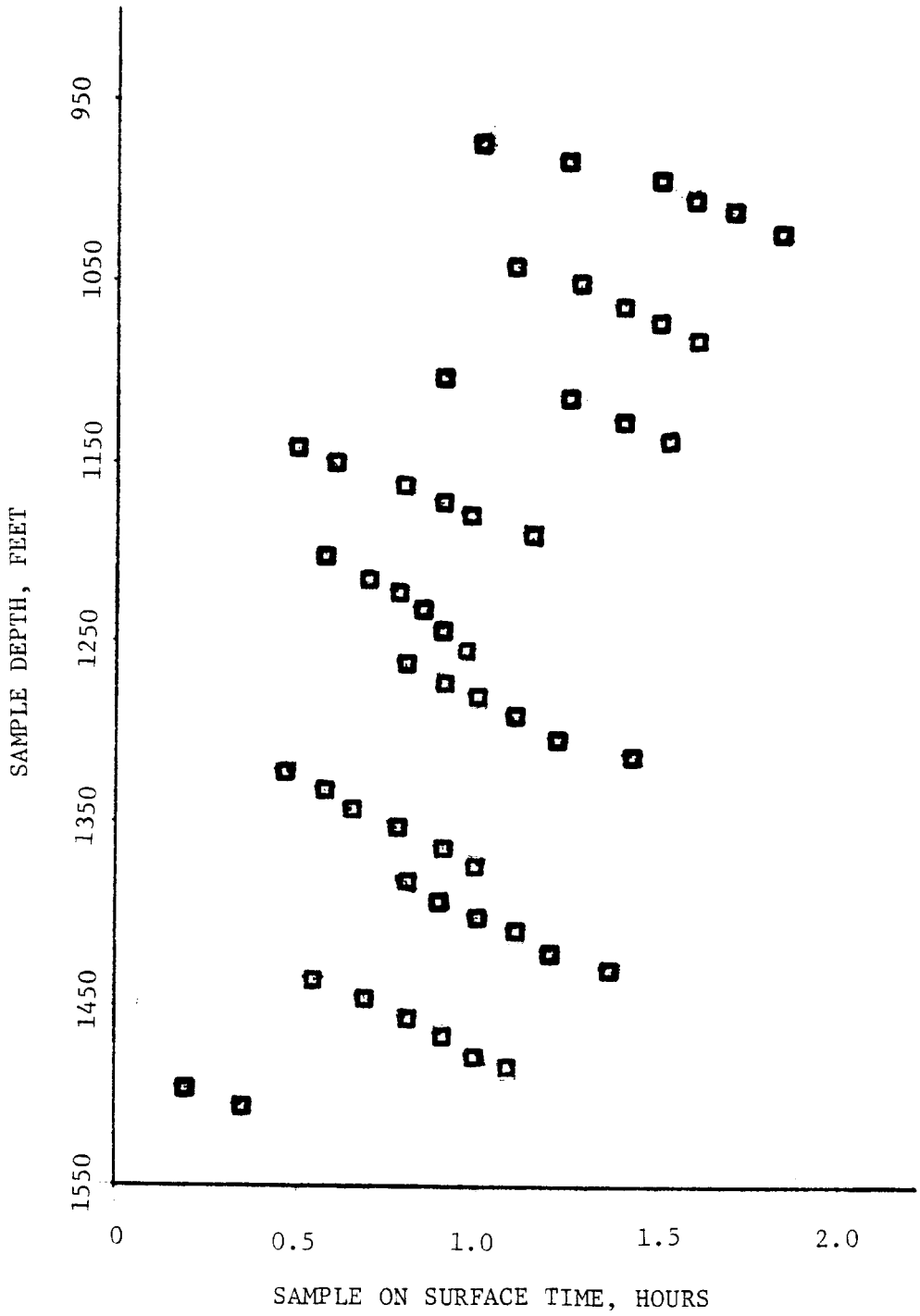



FIGURE 1. ON SURFACE TIME VERSUS SAMPLE DEPTH FOR WELL K-4

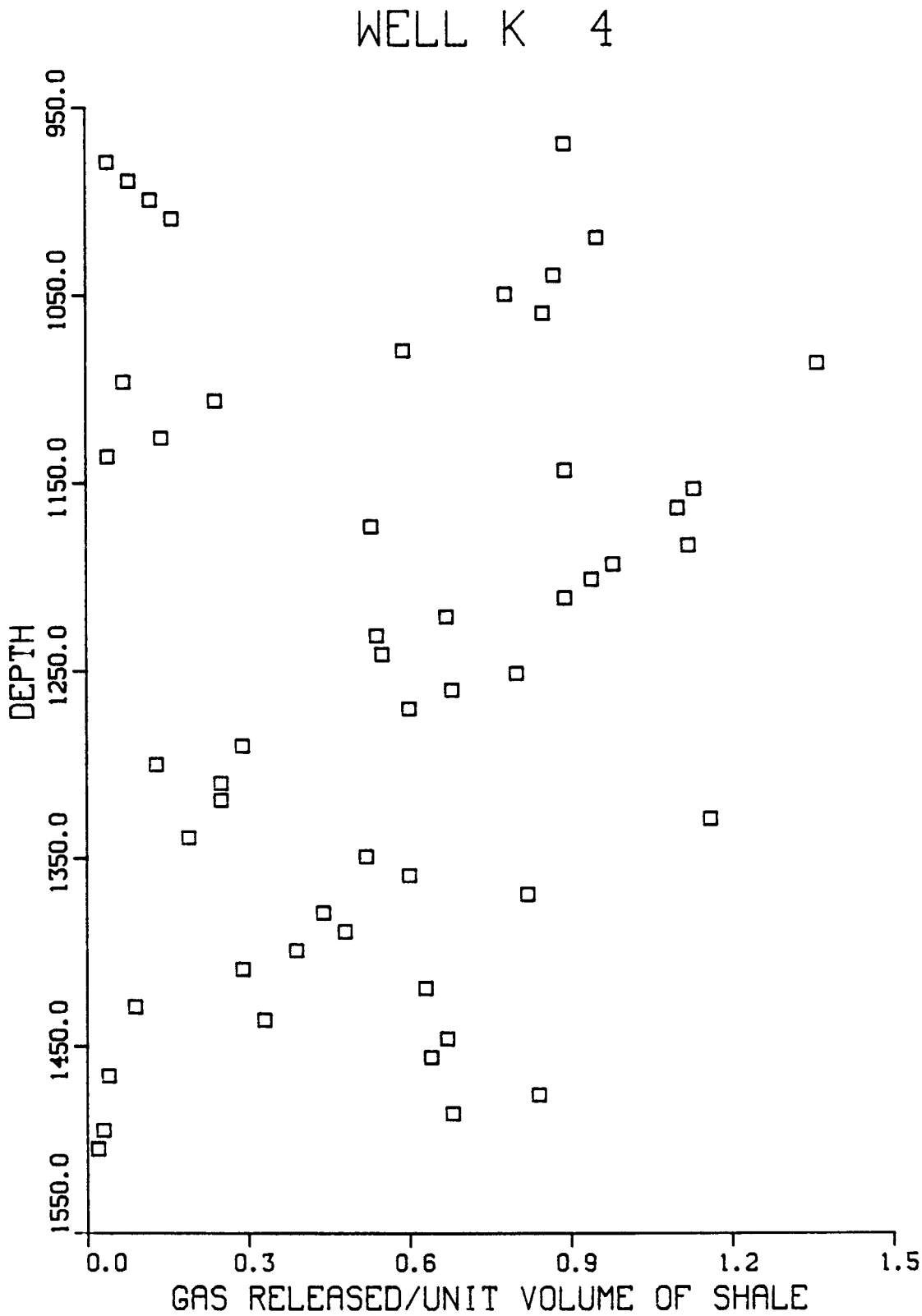



FIGURE 2. HYDROCARBON GAS VERSUS DEPTH FOR WELL K-4

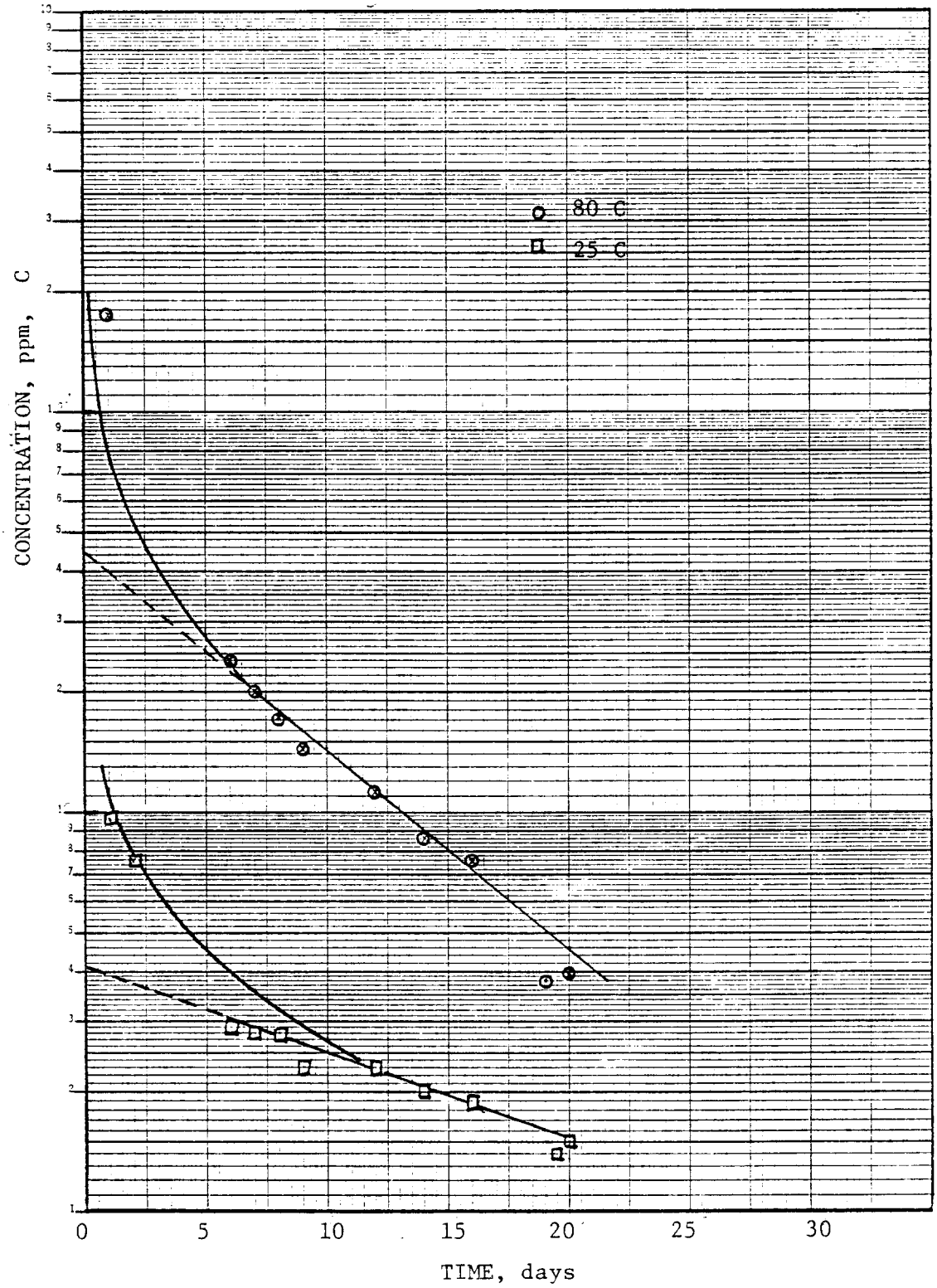



FIGURE 3. EXPERIMENTAL AND CALCULATED HYDROCARBON GAS RELEASE RATES IN SAMPLE K-4-1069

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.

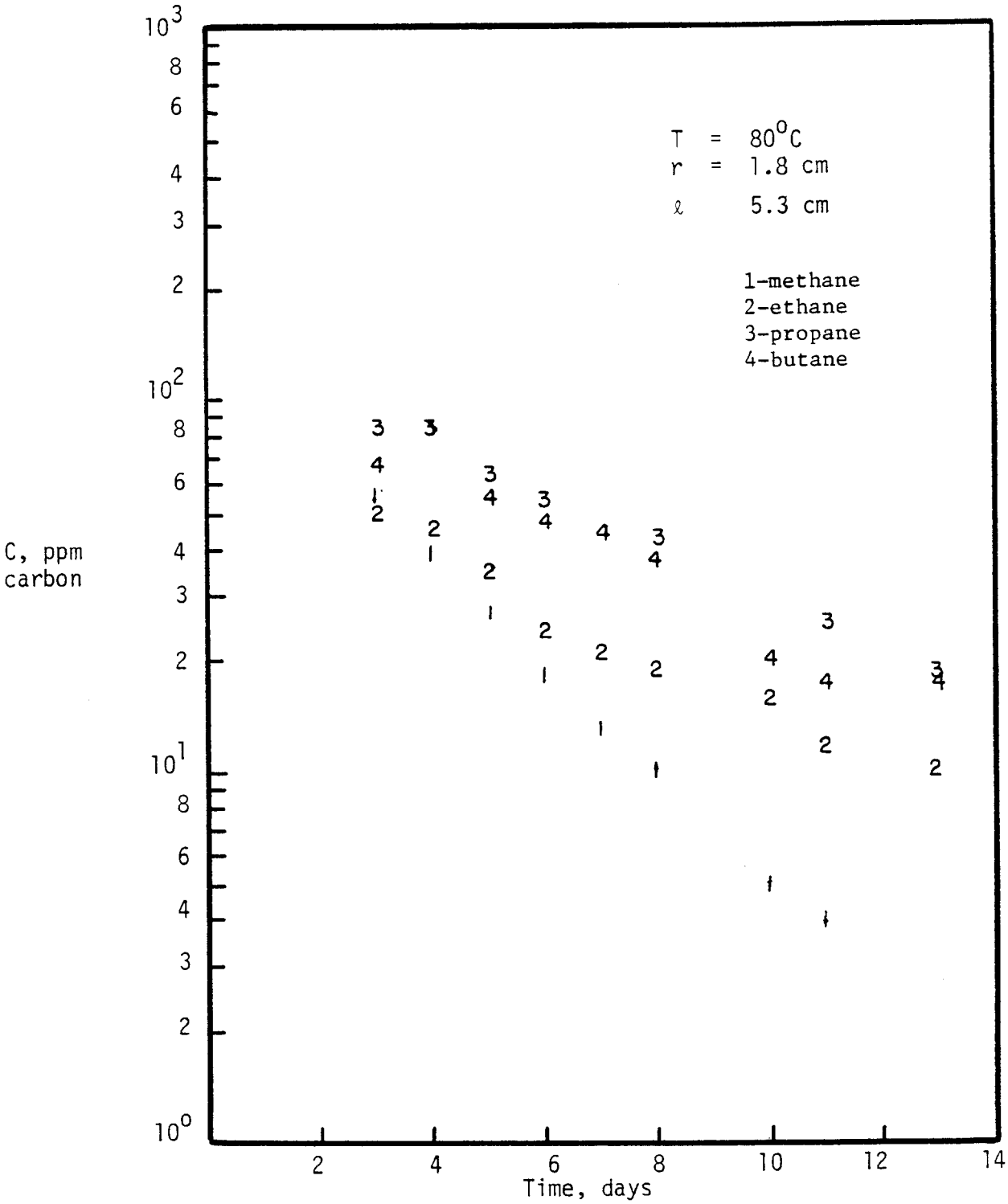



Figure 4. Hydrocarbon Effusion from Shale K-4-1280

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 | $2.0 \times 10^{-6}$ | 4 | 0.39 | 12 |
| | Ethane | $1.2 \times 10^{-6}$ | 4 | 0.23 | 7 |
| | Propane | $1.0 \times 10^{-6}$ | 4 | 0.31 | 6 |
| | Butanes | $9.9 \times 10^{-7}$ | 6 | 0.25 | 8 |
| K-4-1280; 25 C | Methane | $7.9 \times 10^{-7}$ | 9 | 0.28 | 11 |
| | Ethane | $5.2 \times 10^{-7}$ | 24 | 0.12 | 15 |
| | Propane | $5.6 \times 10^{-7}$ | 12 | 0.11 | 9 |
| | Butanes | $(1.4 \times 10^{-6})$ | 19 | 0.04 | 38 |
| K-4-1069; 80 C | Total Hydrocarbons | $1.1 \times 10^{-6}$ | - | - | - |
| K-4-1069 25 C | Total Hydrocarbons | $6.0 \times 10^{-7}$ | - | - | - |

(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 |

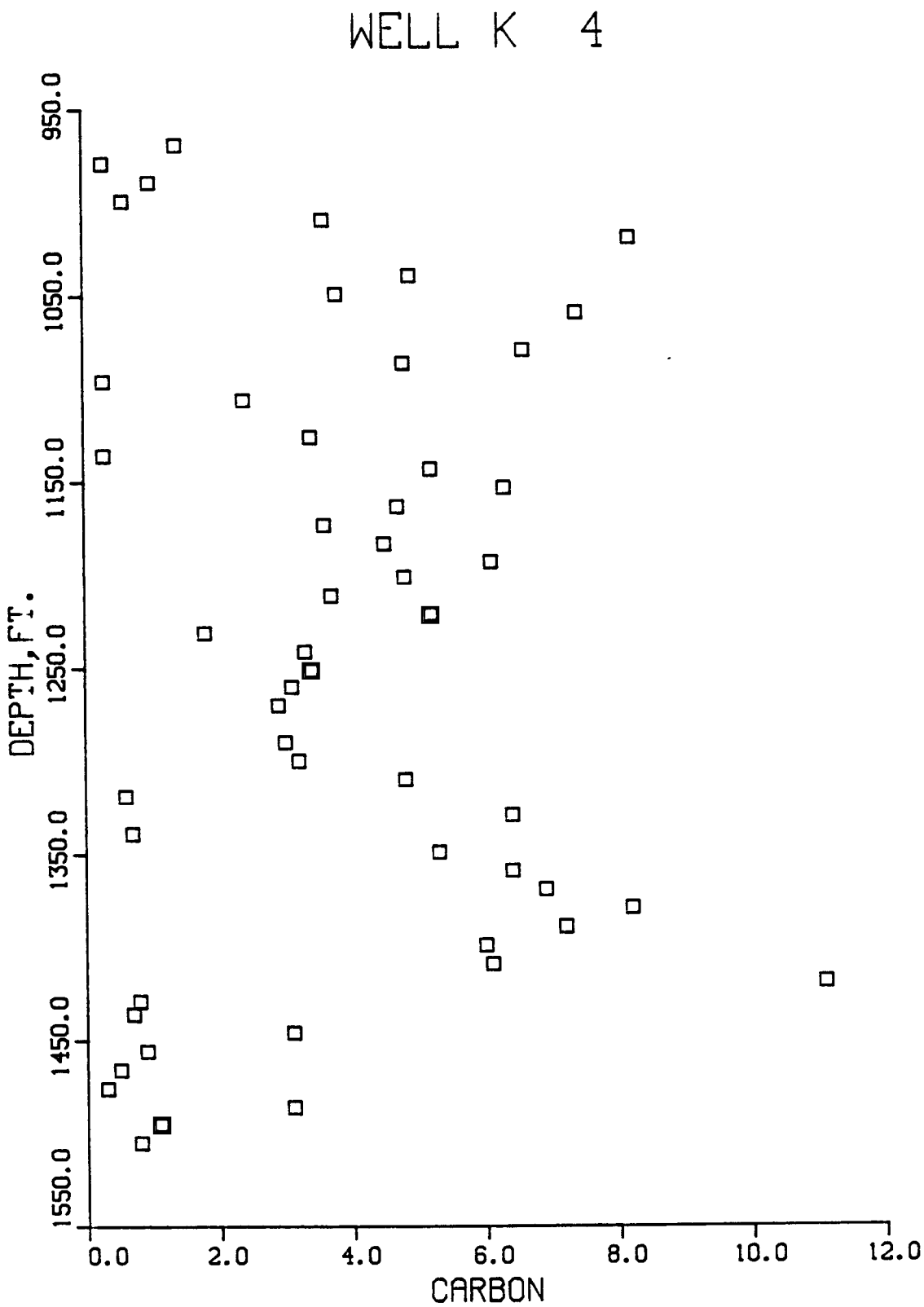



FIGURE 5. CARBON CONTENT VERSUS DEPTH FOR WELL K-4

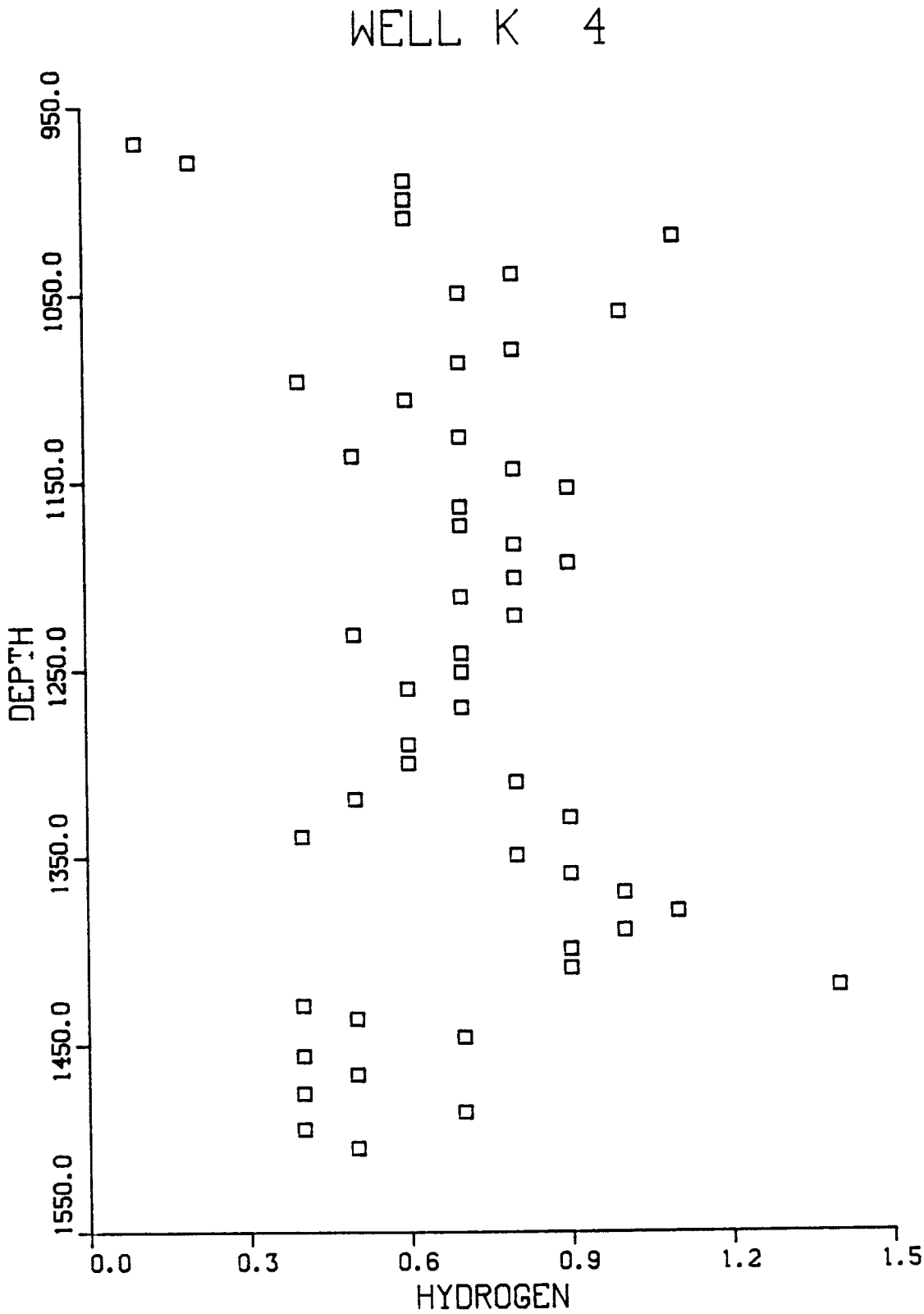



FIGURE 6. HYDROGEN CONTENT VERSUS DEPTH FOR WELL K-4

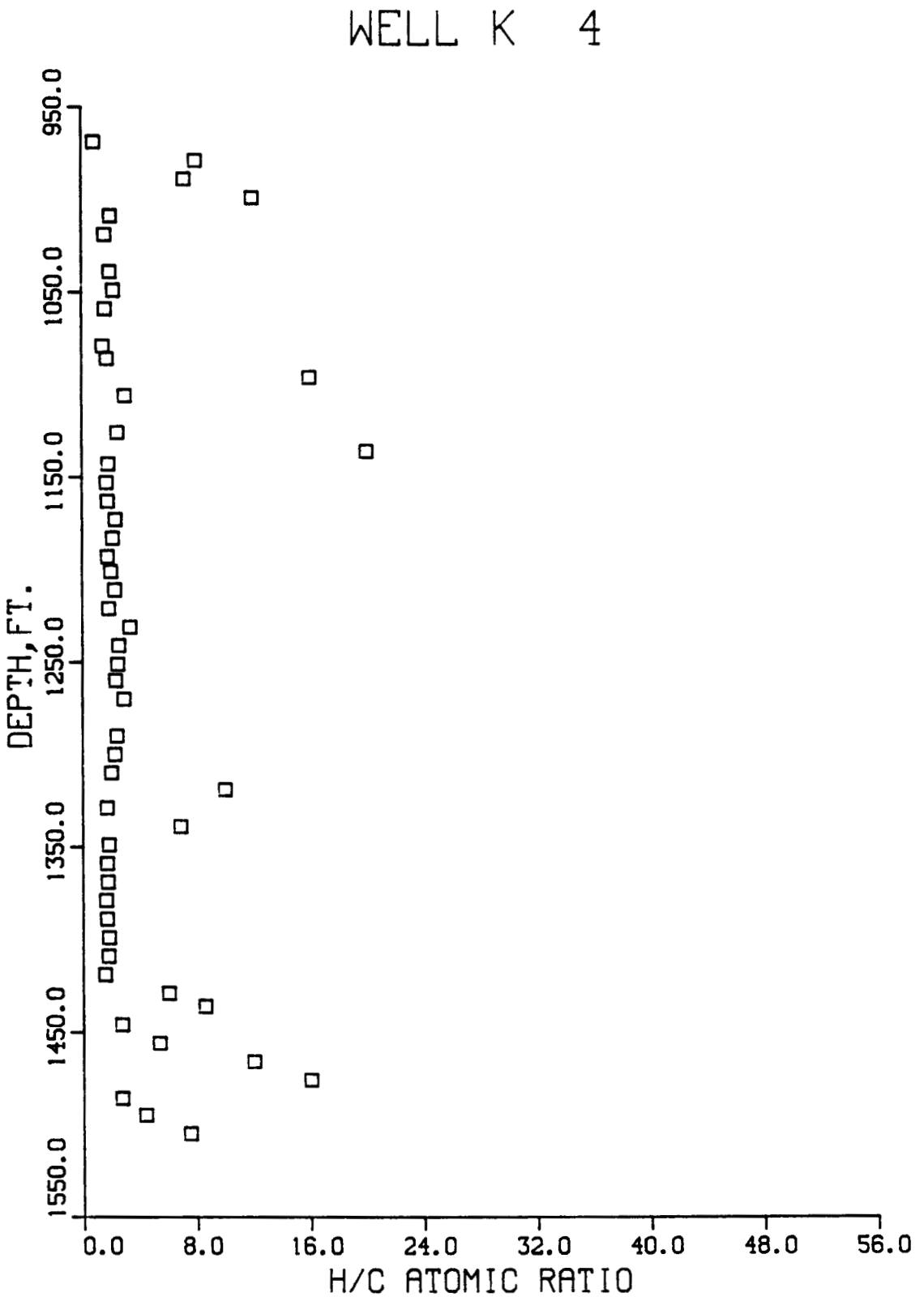



FIGURE 7. H/C ATOMIC RATIO VERSUS DEPTH FOR WELL K-4

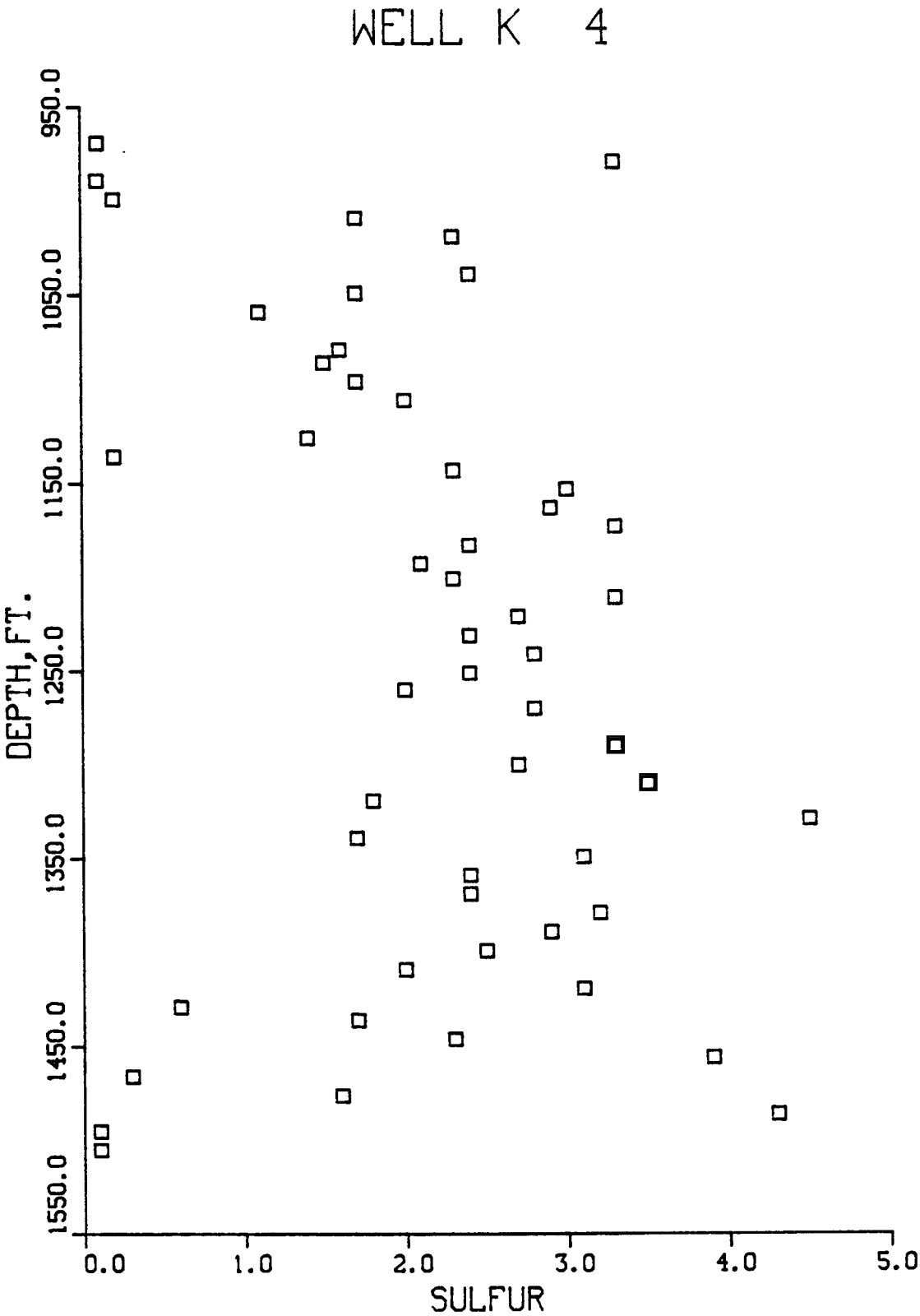



FIGURE 8. SULFUR CONTENT VERSUS DEPTH FOR WELL K-4

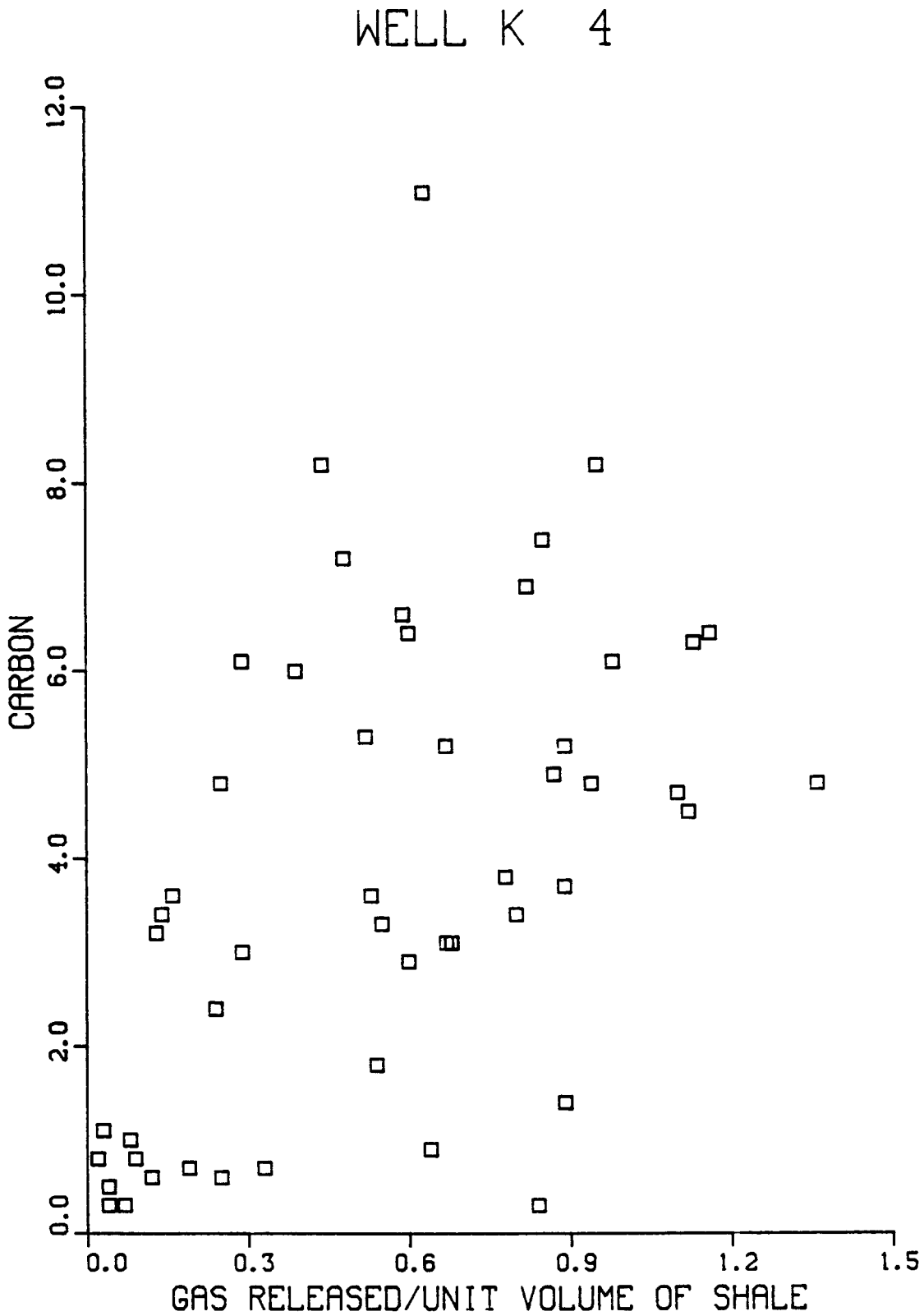



FIGURE 9. HYDROCARBON CONTENT VERSUS CARBON CONTENT FOR WELL K-4

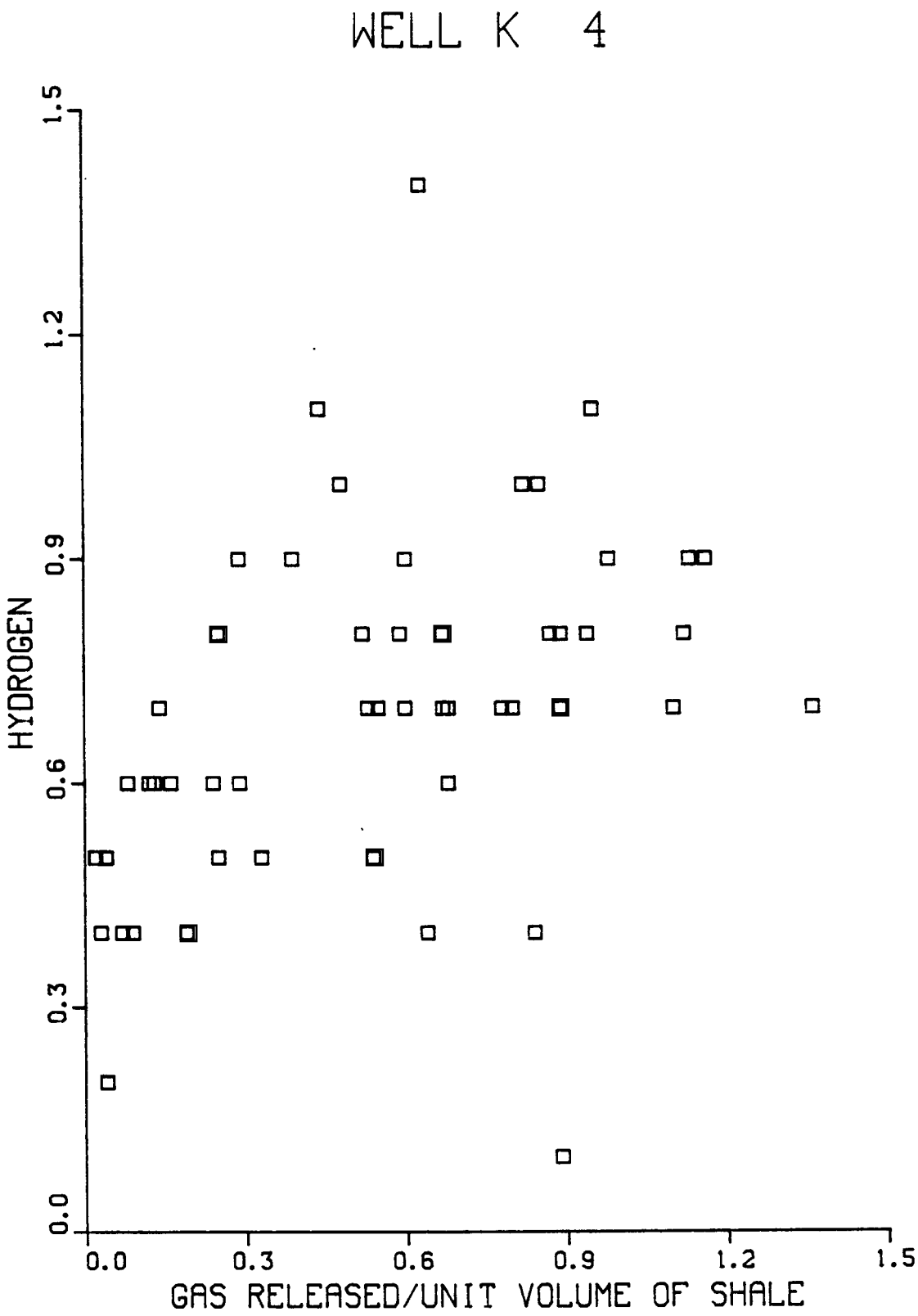



FIGURE 10. HYDROCARBON CONTENT VERSUS HYDROGEN CONTENT FOR WELL K-4

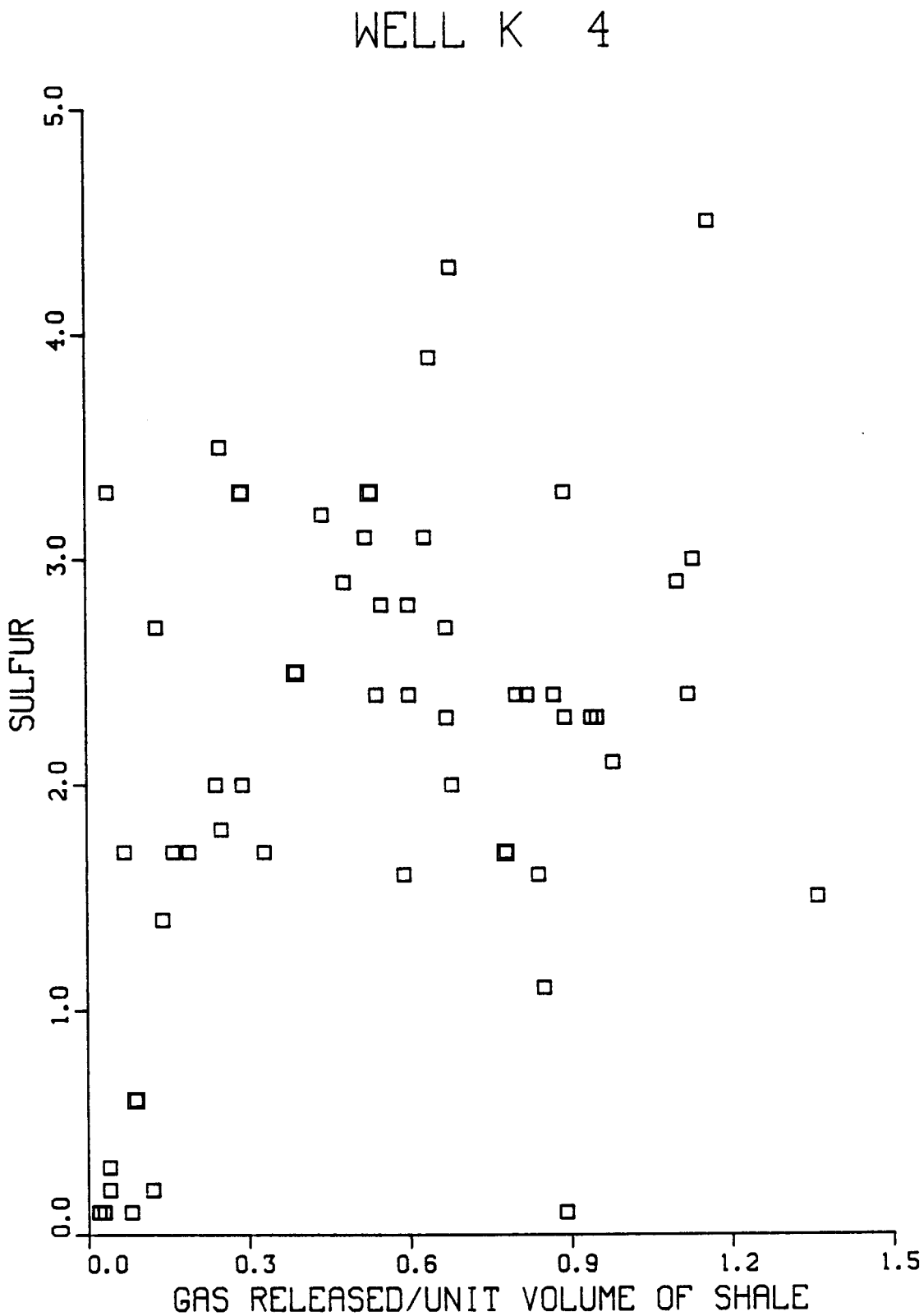



FIGURE 11. HYDROCARBON CONTENT VERSUS SULFUR CONTENT FOR WELL K-4

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 |

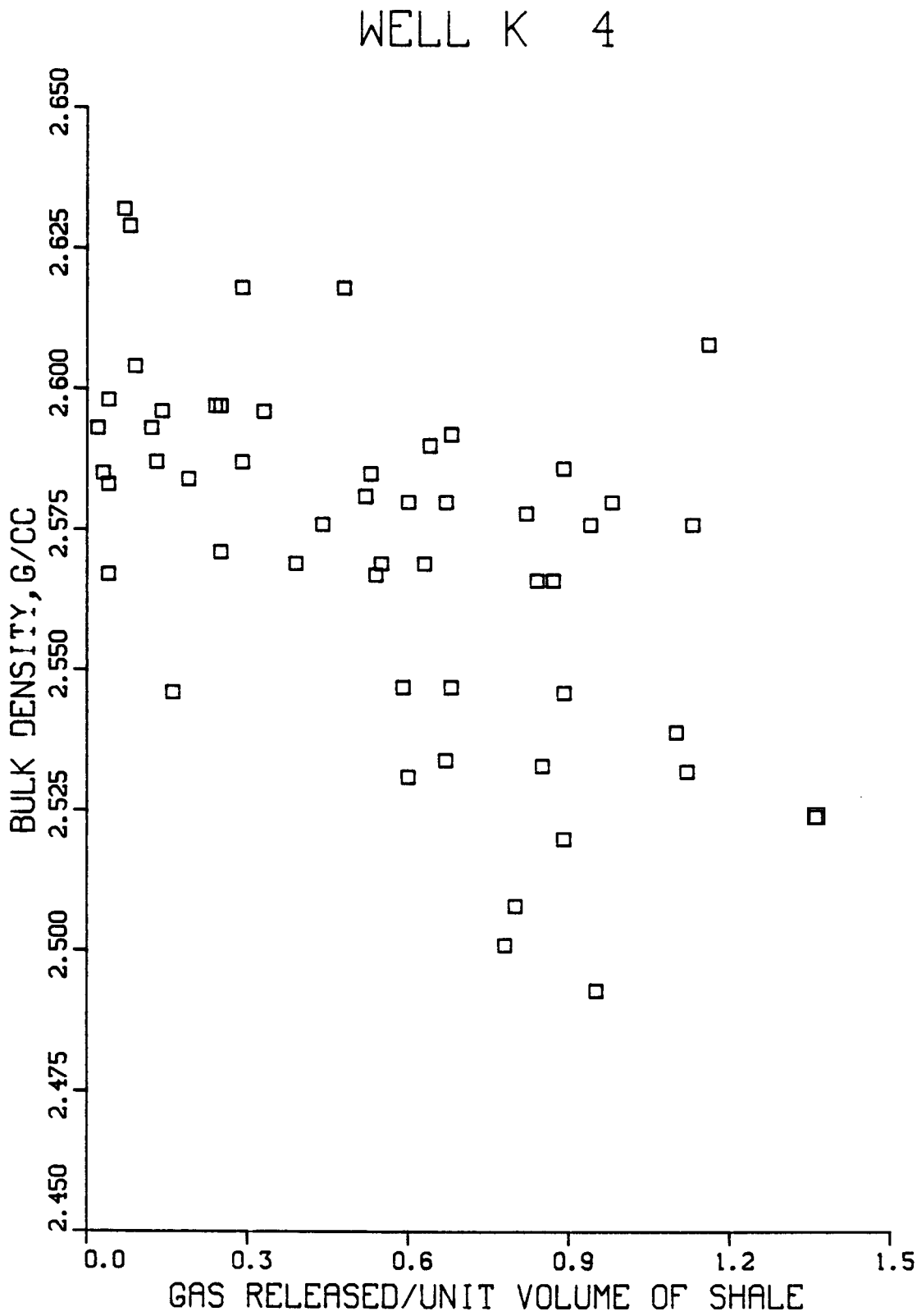



FIGURE 12. HYDROCARBON CONTENT VERSUS BULK DENSITY FOR WELL K-4

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 $5 \times 10^{-6}$ 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.

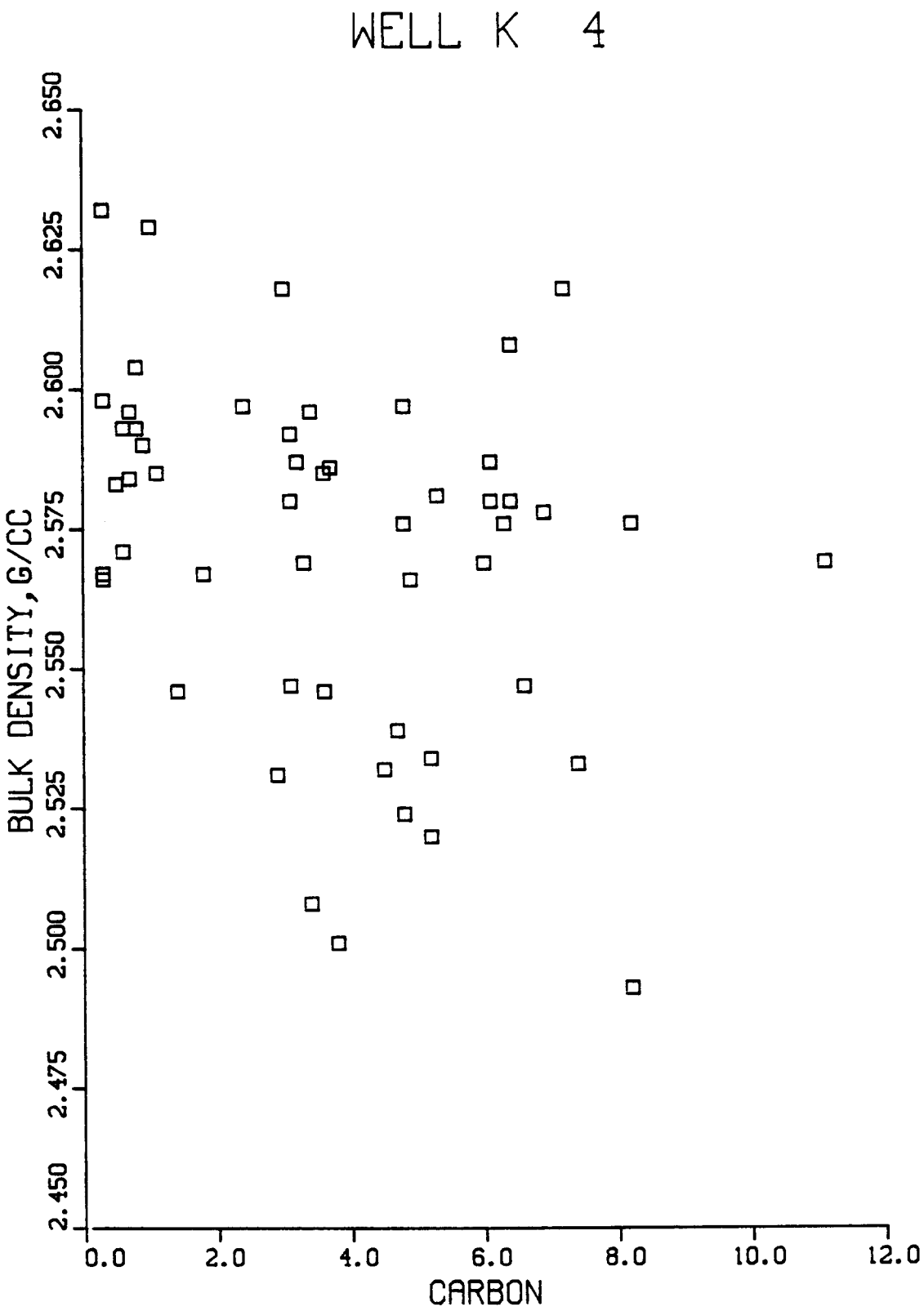



FIGURE 13. CARBON CONTENT VERSUS BULK DENSITY FOR WELL K-4

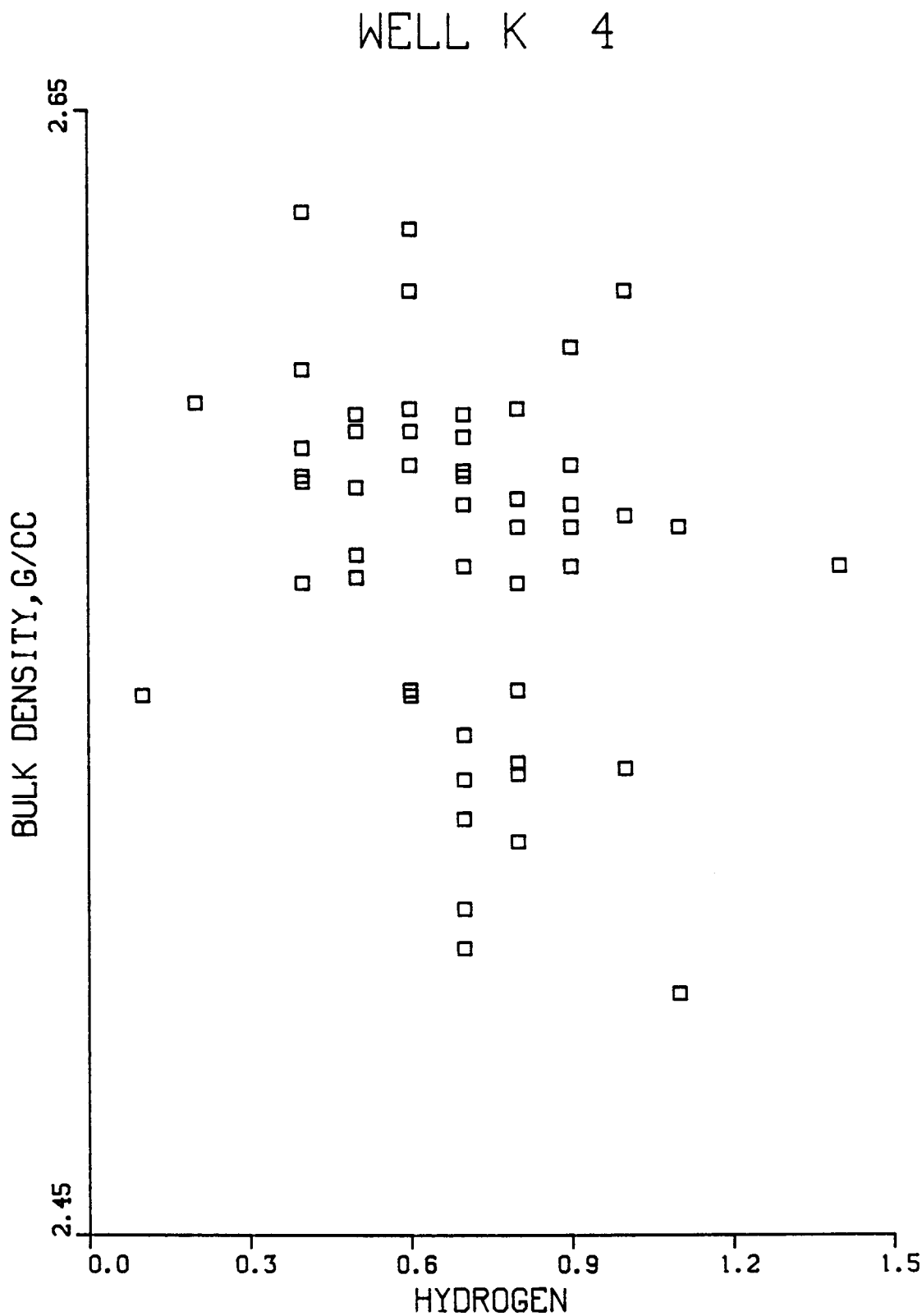



FIGURE 14. HYDROGEN CONTENT VERSUS BULK DENSITY FOR WELL K-4

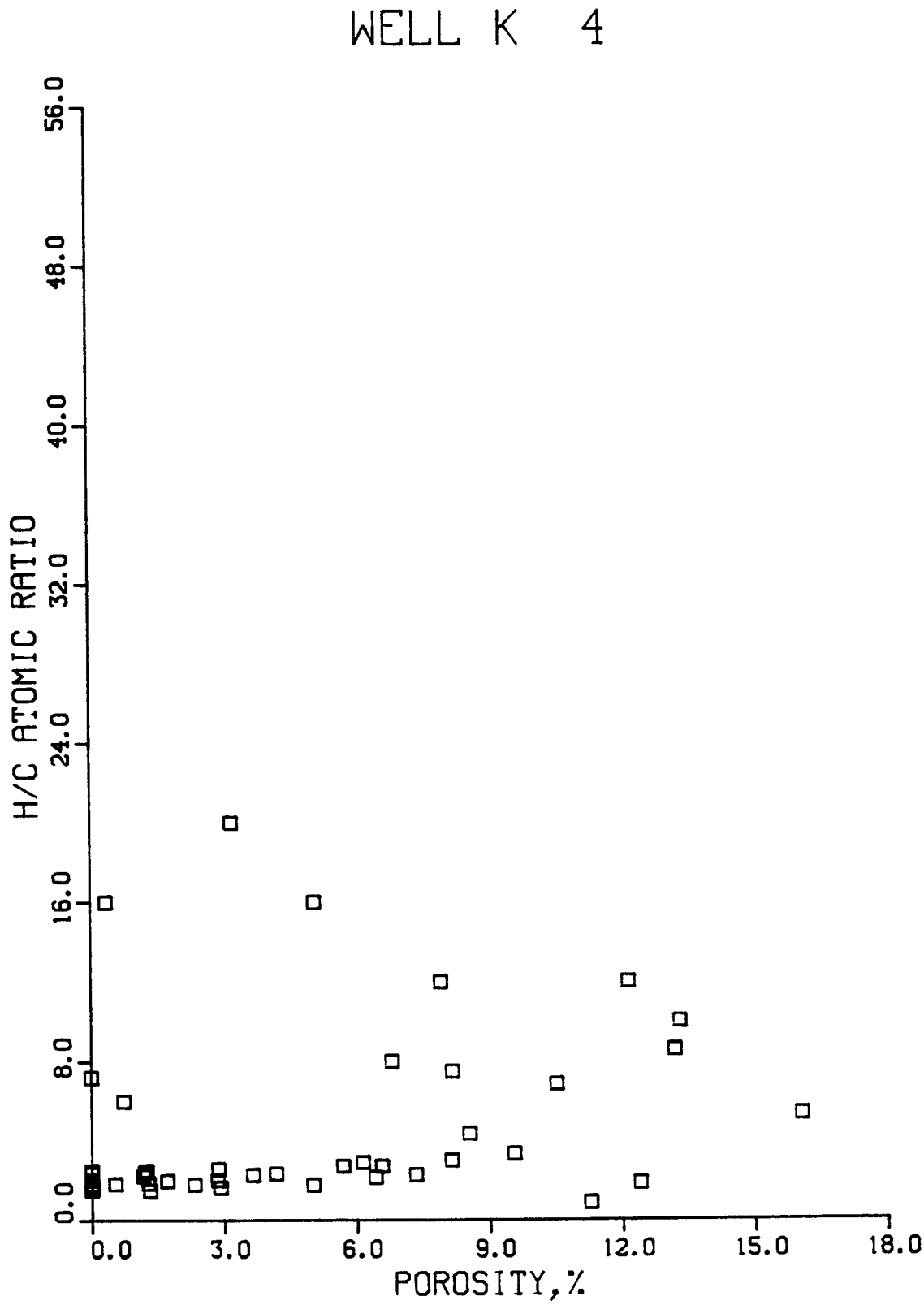



FIGURE 15. POROSITY VERSUS H/C ATOMIC RATIO FOR WELL K-4

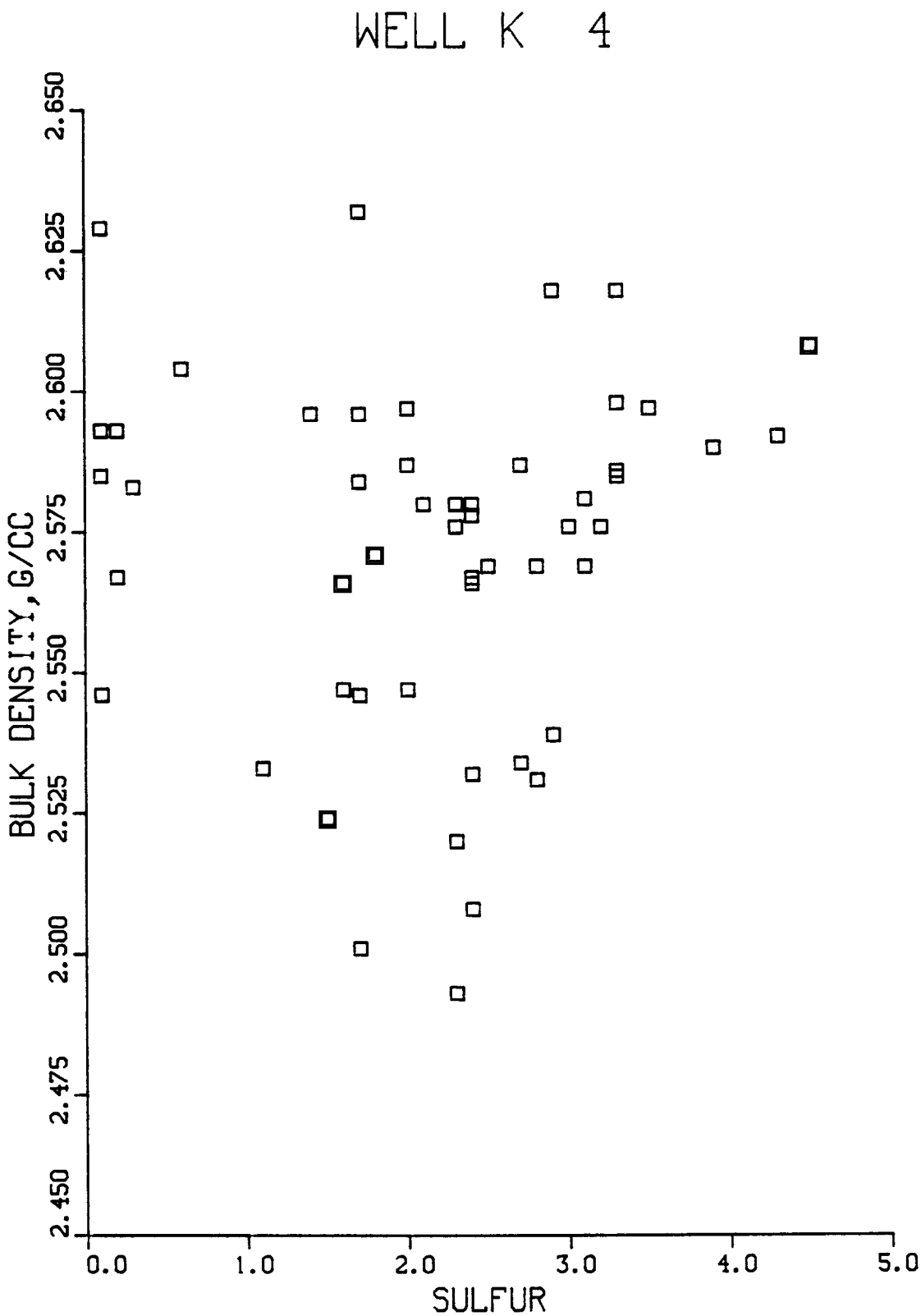



FIGURE 16. SULFUR CONTENT VERSUS BULK DENSITY FOR WELL K-4

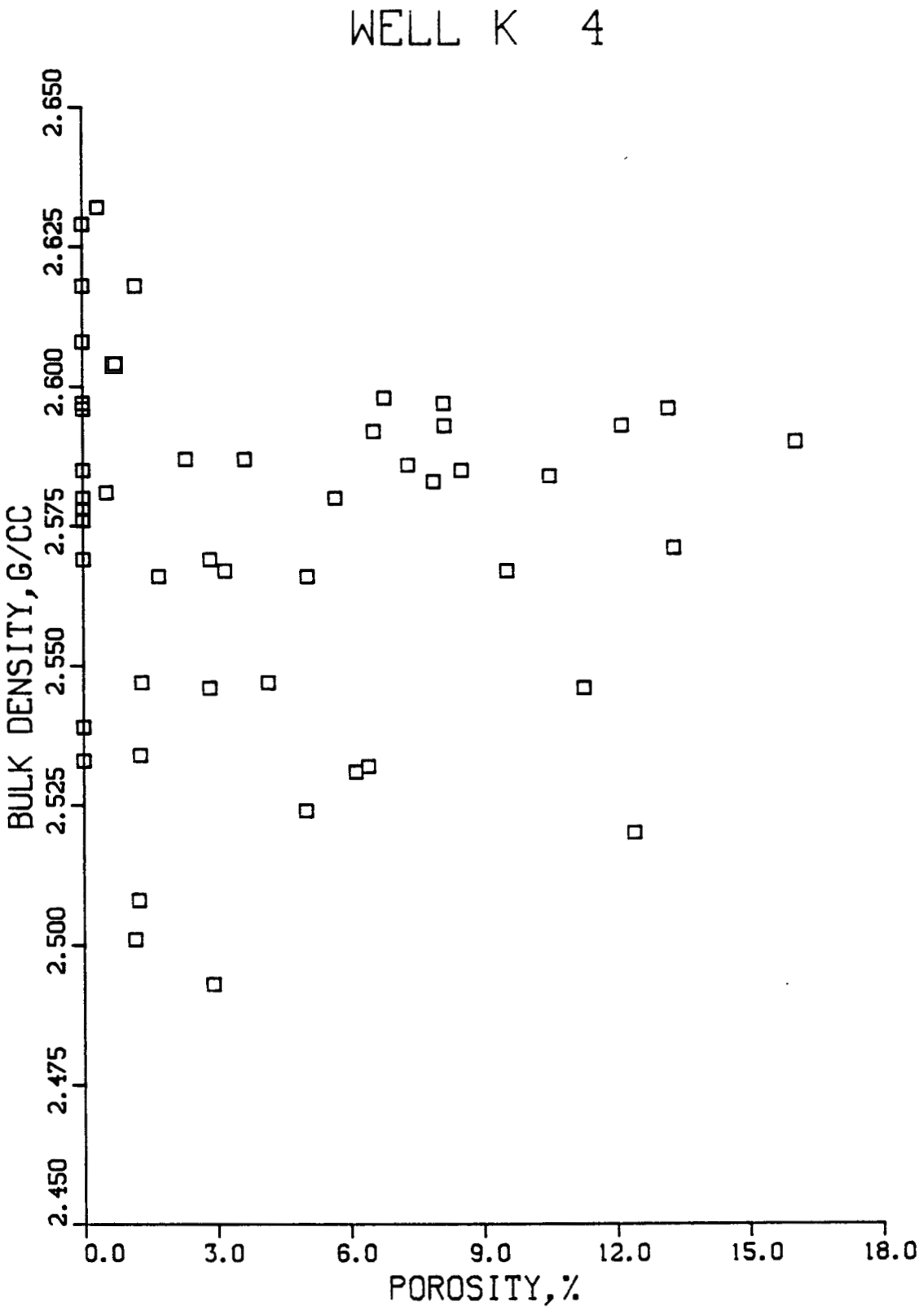



FIGURE 17. POROSITY VERSUS BULK DENSITY FOR WELL K-4

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 |

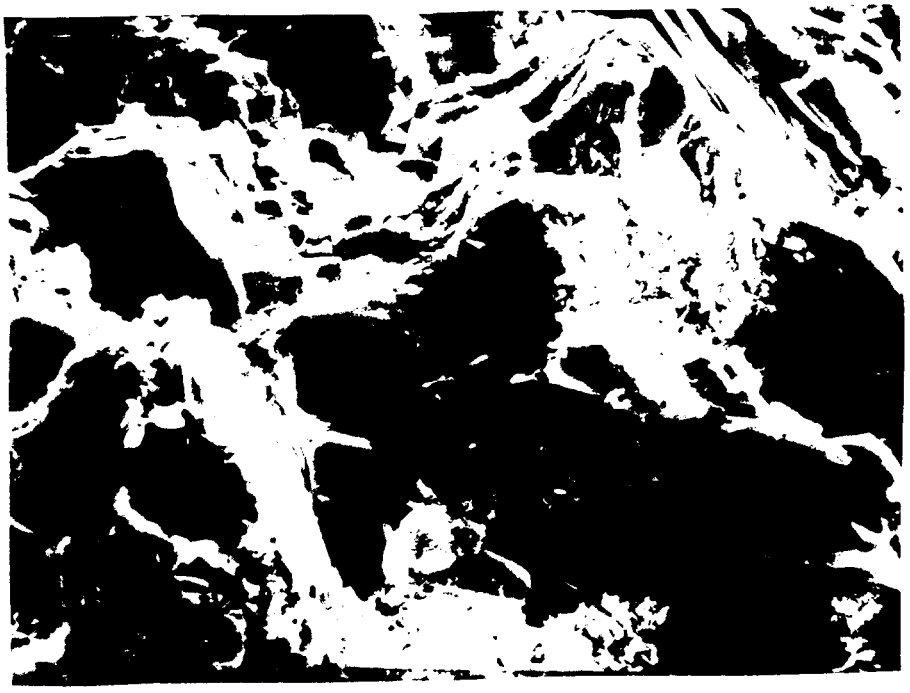
TABLE 10. HELIUM PERMEABILITY OF K-4 SHALES

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

TABLE 11. ENERGY DISPERSIVE ANALYSES OF K-4 SHALES

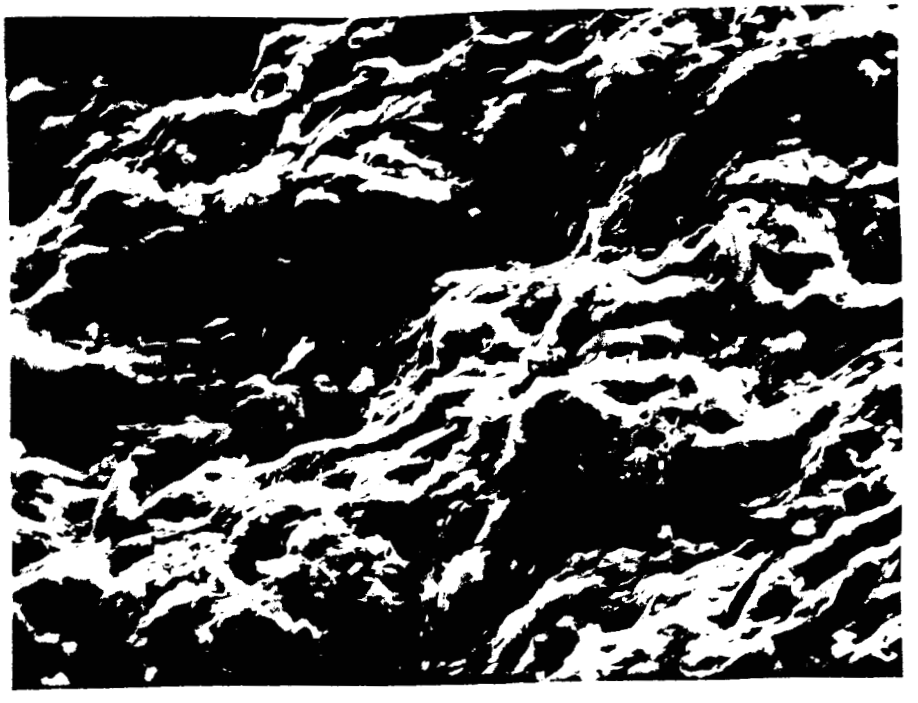
| Shale Sample | Element Count Per 100 Counts | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Na | K | Ca | Mg | Al | Si | Fe | S | Ti | Fe/S | K/Al | K/Si | Al/Si |
| K-4- 969 | - | 1.8 | - | - | 8.9 | 86.2 | 2.4 | - | 0.7 | ∞ | 0.20 | 0.02 | 0.10 |
| K-4-1079 | - | 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.



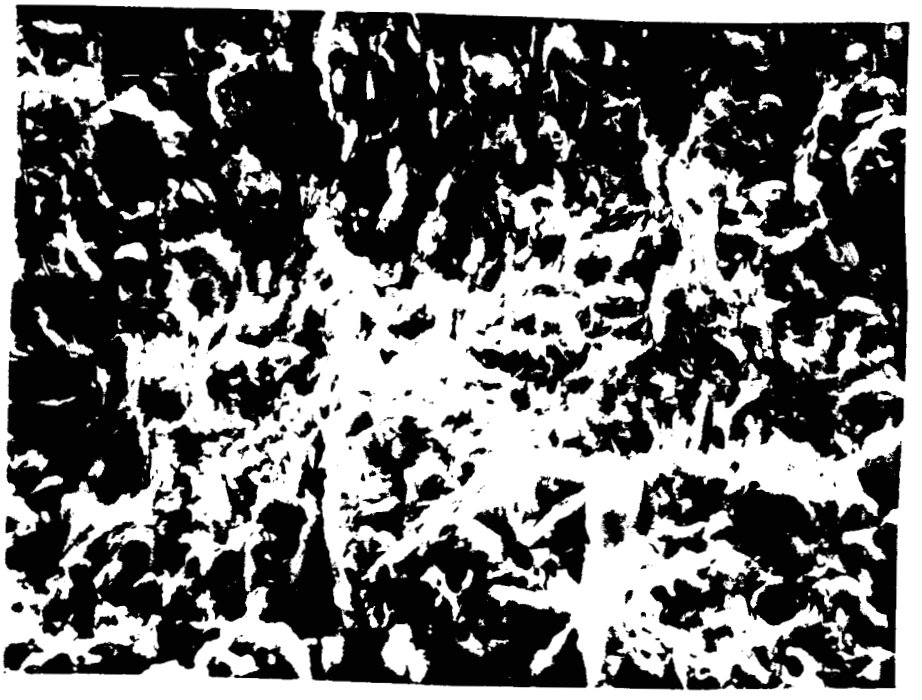
700 X

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



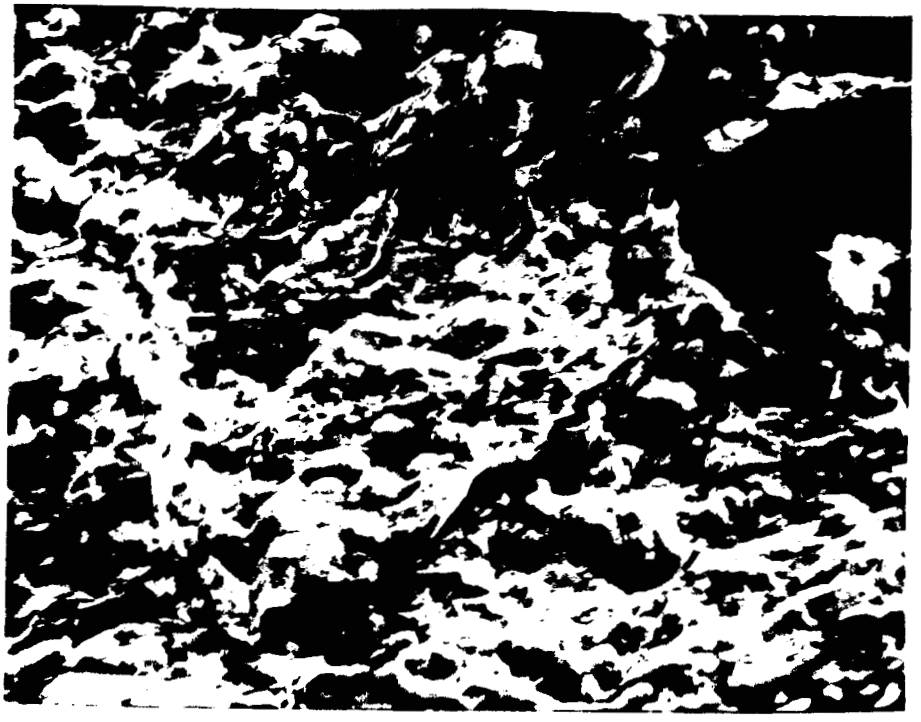
700 X

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



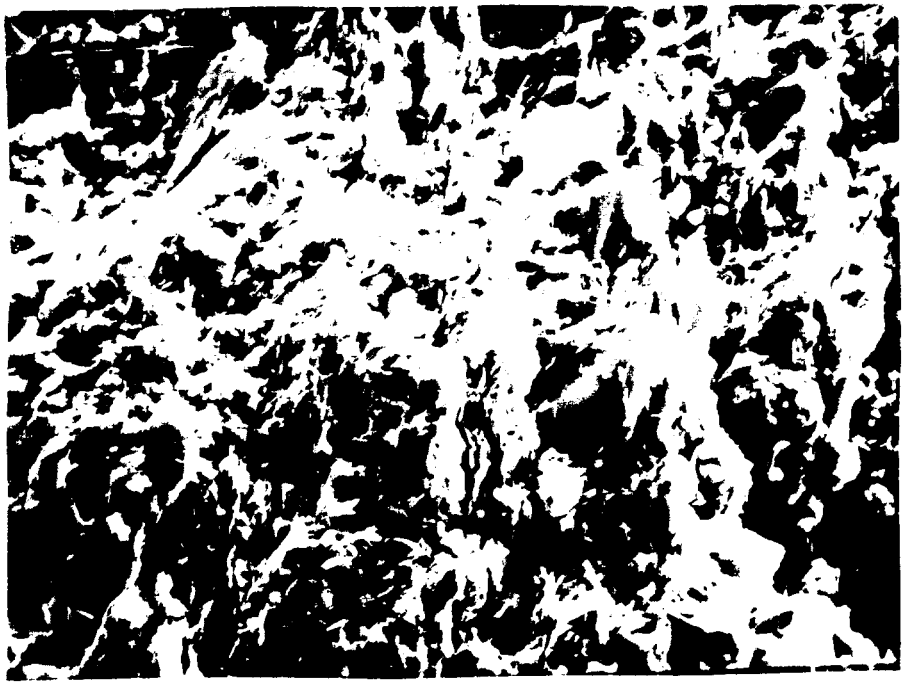
700 X

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



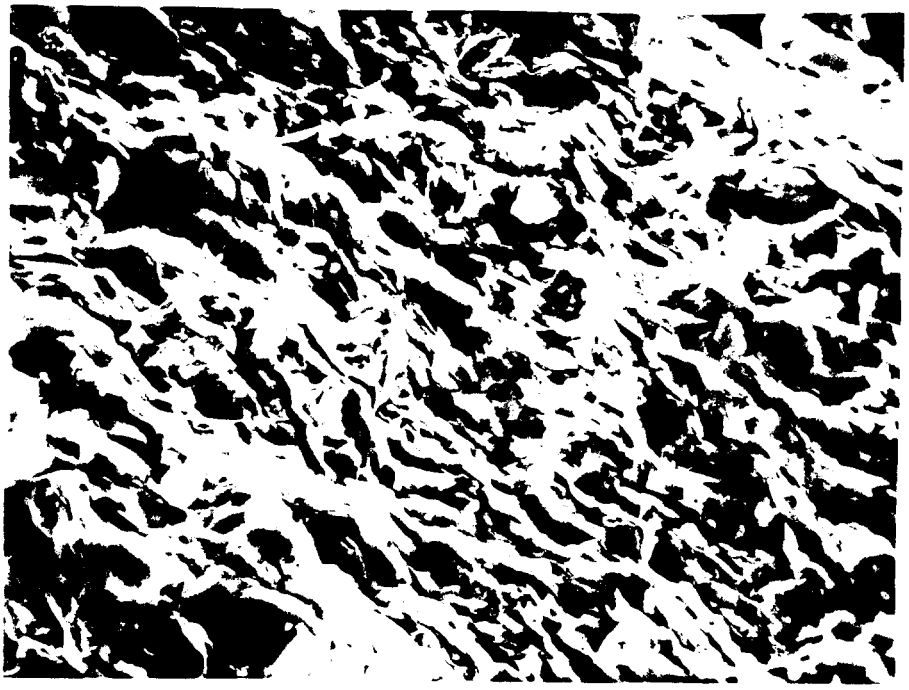
700 X

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 PSIA | 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 | 2.000 | .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.

SEQUENCE NUMBER 23
PORE VOLUME .003 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 | .0094 | .0 |
| 2. | 29.392 | 7.500 | .0007 | .0086 | 8.0 |
| 3. | 44.088 | 5.000 | .0009 | .0085 | 9.1 |
| 4. | 58.784 | 3.700 | .0009 | .0085 | 9.1 |
| 5. | 73.480 | 3.000 | .0009 | .0085 | 9.1 |
| 6. | 88.176 | 2.500 | .0010 | .0084 | 10.2 |
| 7. | 102.872 | 2.100 | .0010 | .0084 | 10.2 |
| 8. | 117.568 | 1.800 | .0010 | .0084 | 10.2 |
| 9. | 132.264 | 1.600 | .0010 | .0084 | 10.2 |
| 10. | 146.960 | 1.500 | .0010 | .0084 | 10.2 |
| 11. | 161.656 | 1.400 | .0010 | .0084 | 10.2 |
| 12. | 176.352 | 1.300 | .0010 | .0084 | 10.2 |
| 13. | 191.048 | 1.200 | .0010 | .0084 | 10.2 |
| 14. | 205.744 | 1.100 | .0010 | .0084 | 10.2 |
| 15. | 220.440 | 1.000 | .0010 | .0084 | 10.2 |
| 16. | 235.136 | .930 | .0013 | .0081 | 13.6 |
| 17. | 249.832 | .880 | .0015 | .0079 | 15.9 |
| 18. | 264.528 | .830 | .0015 | .0079 | 15.9 |
| 19. | 279.224 | .790 | .0017 | .0077 | 18.2 |
| 20. | 293.920 | .750 | .0017 | .0077 | 18.2 |
| 25. | 367.400 | .600 | .0017 | .0077 | 18.2 |
| 30. | 440.880 | .500 | .0017 | .0077 | 18.2 |
| 35. | 514.360 | .430 | .0019 | .0074 | 20.5 |
| 40. | 587.840 | .370 | .0021 | .0072 | 22.7 |
| 45. | 661.320 | .330 | .0024 | .0069 | 26.1 |
| 50. | 734.800 | .300 | .0028 | .0066 | 29.5 |
| 55. | 808.280 | .270 | .0030 | .0064 | 31.8 |
| 60. | 881.760 | .250 | .0032 | .0062 | 34.1 |
| 65. | 955.240 | .230 | .0034 | .0060 | 36.4 |
| 70. | 1028.720 | .210 | .0036 | .0057 | 38.6 |
| 75. | 1102.200 | .200 | .0036 | .0057 | 38.6 |
| 80. | 1175.680 | .180 | .0036 | .0057 | 38.6 |
| 85. | 1249.160 | .170 | .0036 | .0055 | 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 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 | .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 |
| 170. | 2498.320 | .088 | .0158 | .0054 | 74.6 |
| 180. | 2645.280 | .083 | .0159 | .0052 | 75.4 |
| 190. | 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 |
| 490. | 7201.040 | .030 | .0184 | .0027 | 87.3 |
| 510. | 7494.960 | .029 | .0186 | .0025 | 88.1 |
| 540. | 7935.840 | .027 | .0188 | .0023 | 88.9 |
| 590. | 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 | 98.0 |
| 1000. | 14695.000 | .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. | 1028.720 | .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.

FOOTAGE 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.

SEQUENCE NUMBER 45
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 | .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. | 191.048 | 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 | .180 | .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 | 98.1 |
| 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.

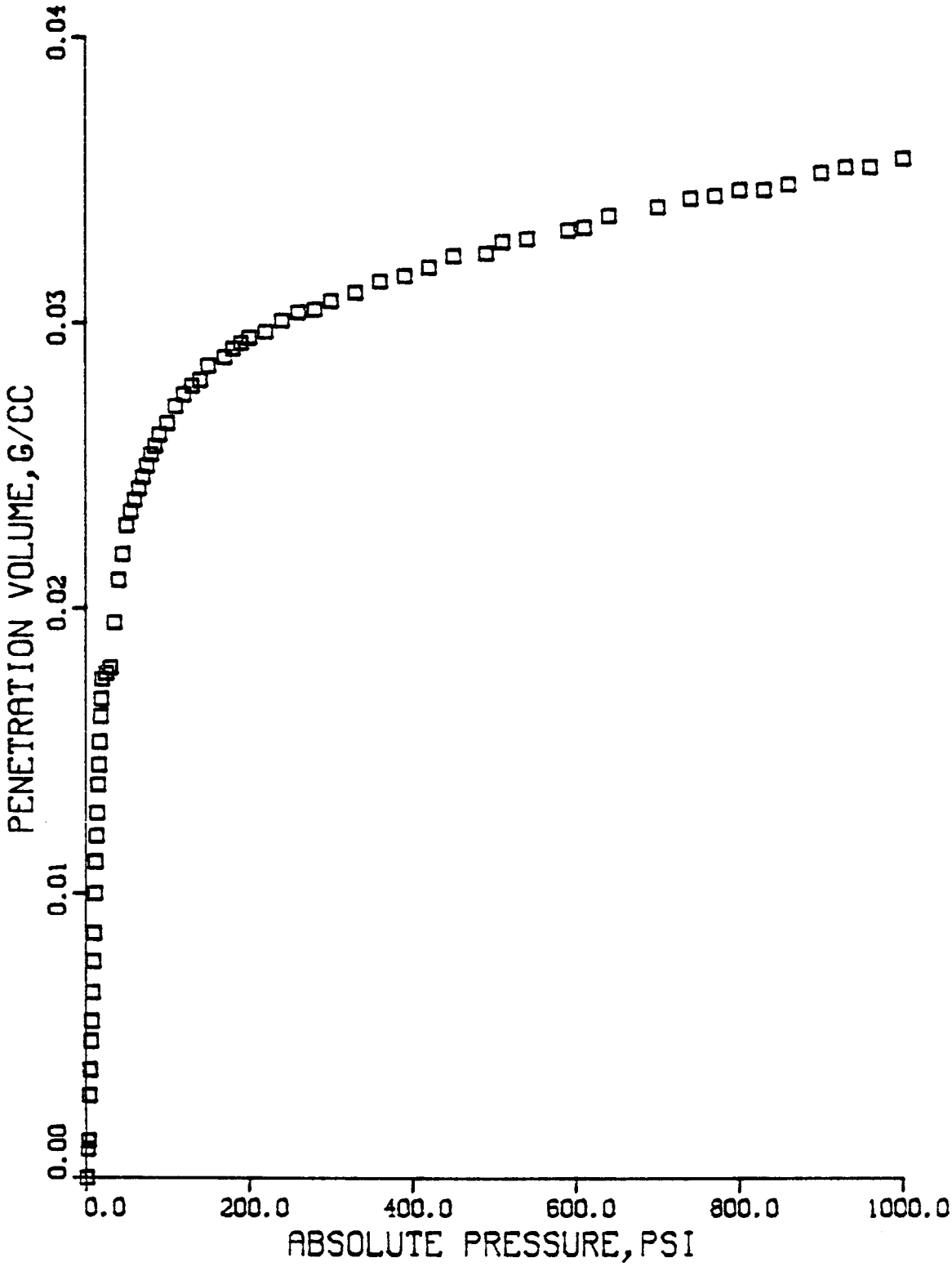
CURVE NUMBER 53
PORE VOLUME .036 CC/G

| 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.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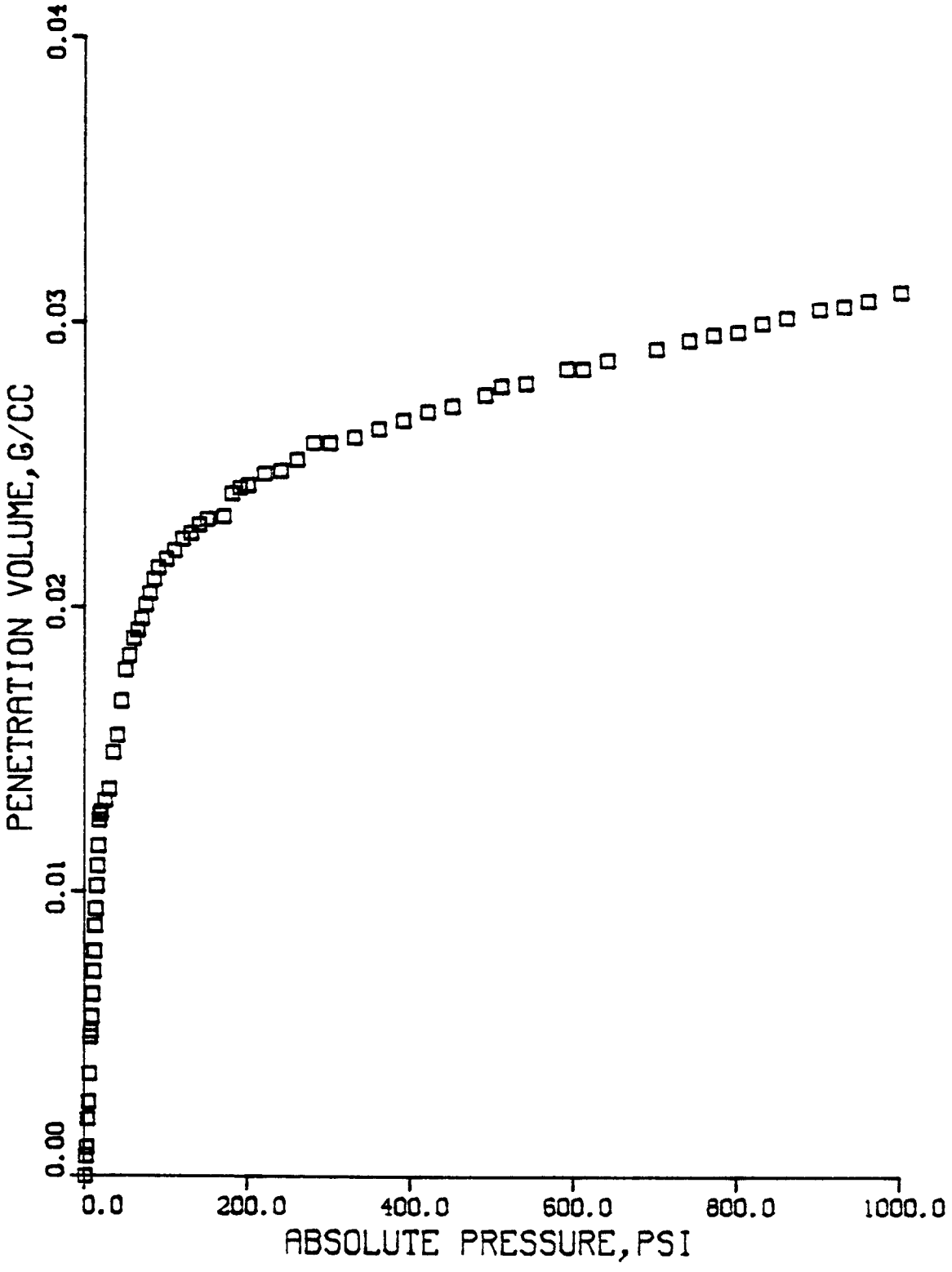
1000.0
ABSOLUTE PRESSURE, PSI

K 41476.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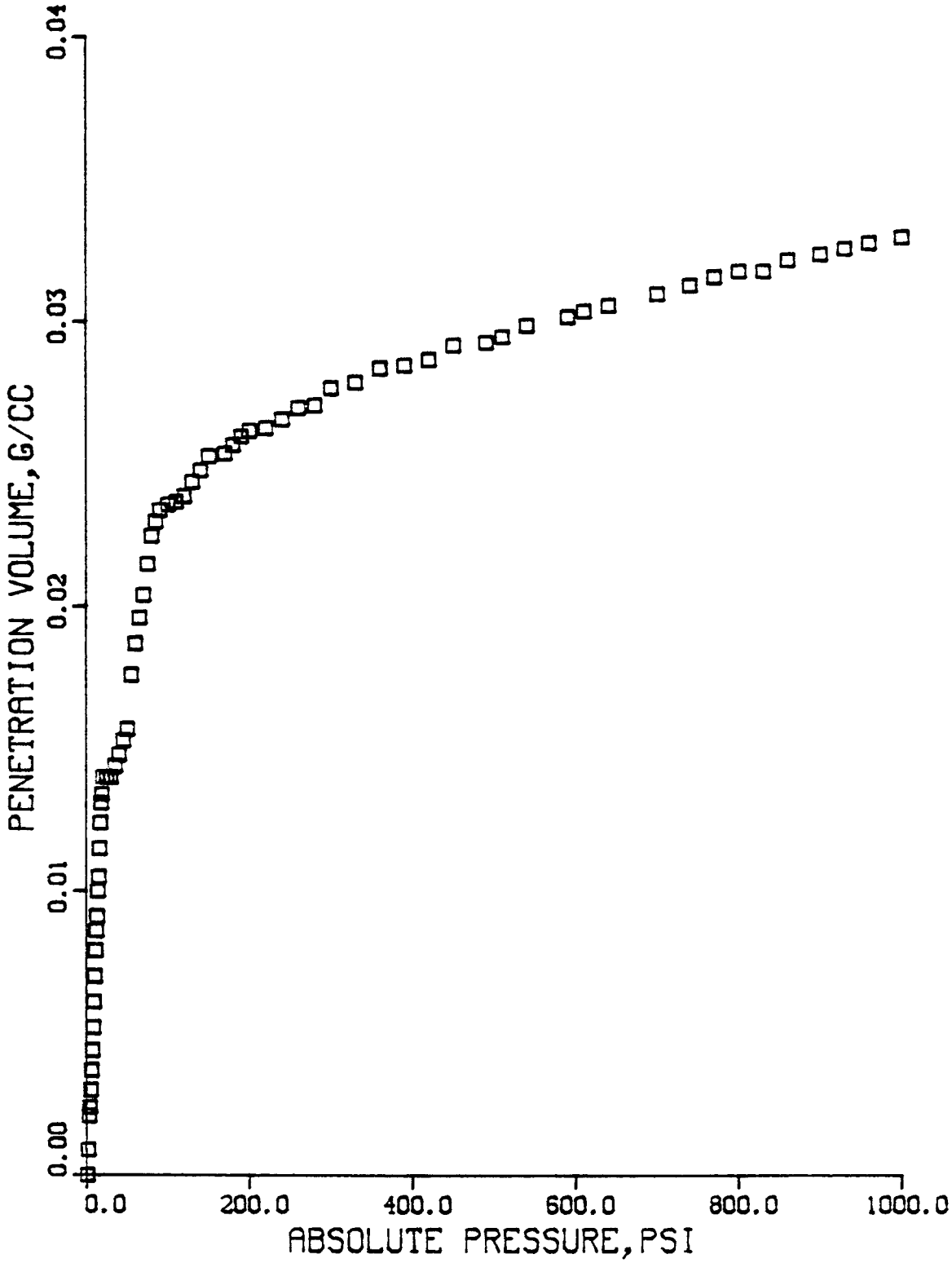
ABSOLUTE PRESSURE,PSI

K 41456.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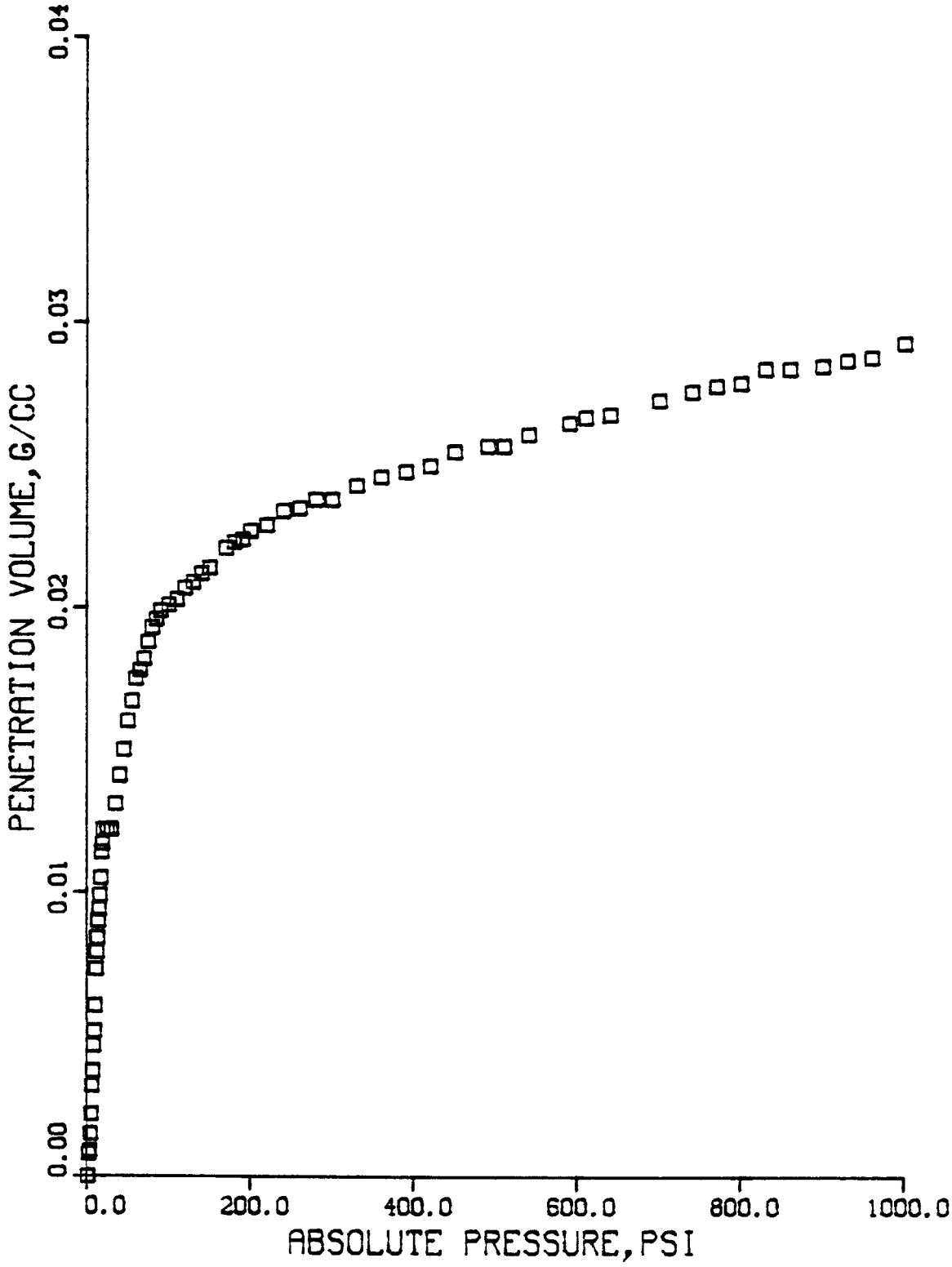
ABSOLUTE PRESSURE,PSI

K 41436.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800.0
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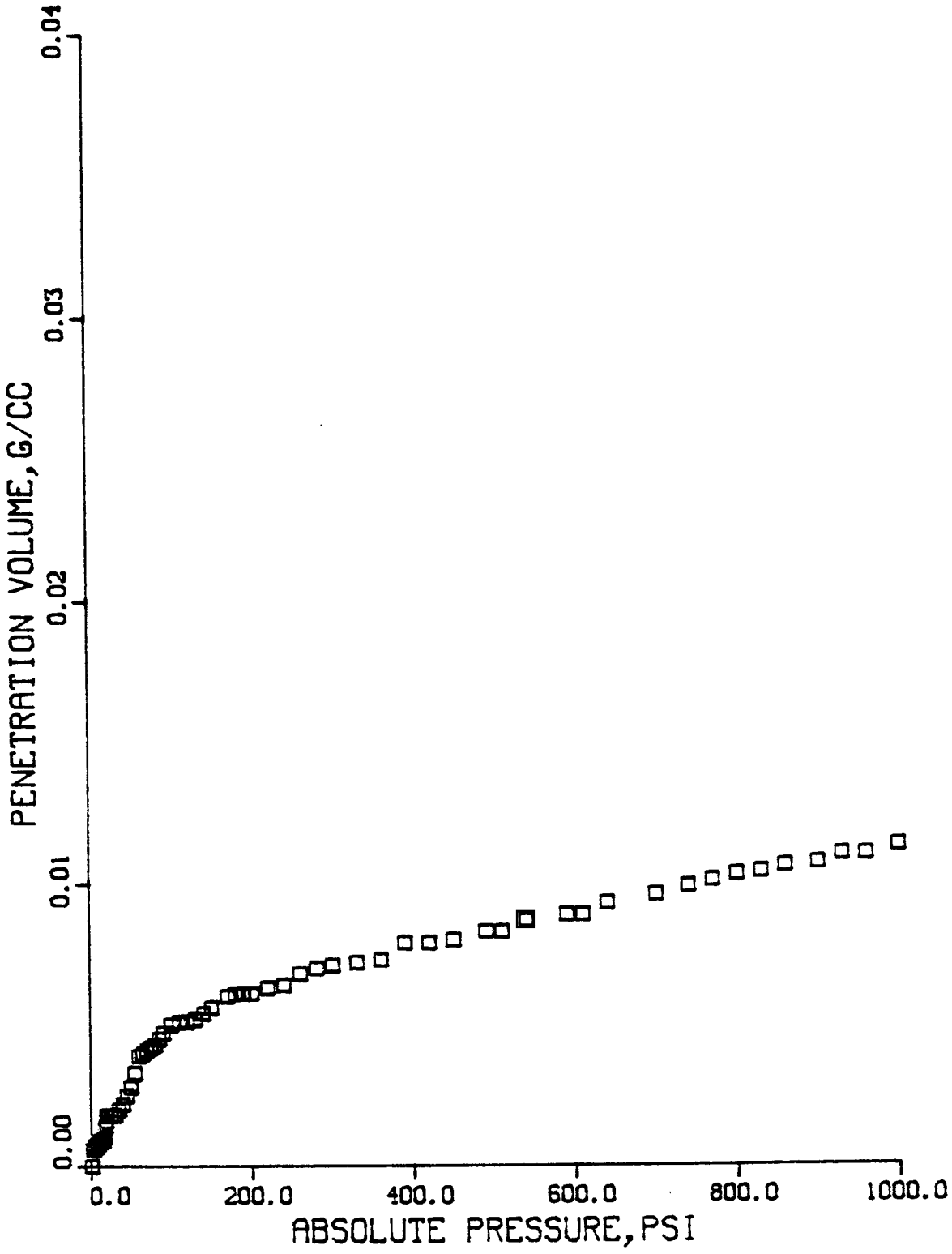
ABSOLUTE PRESSURE, PSI

K 41419.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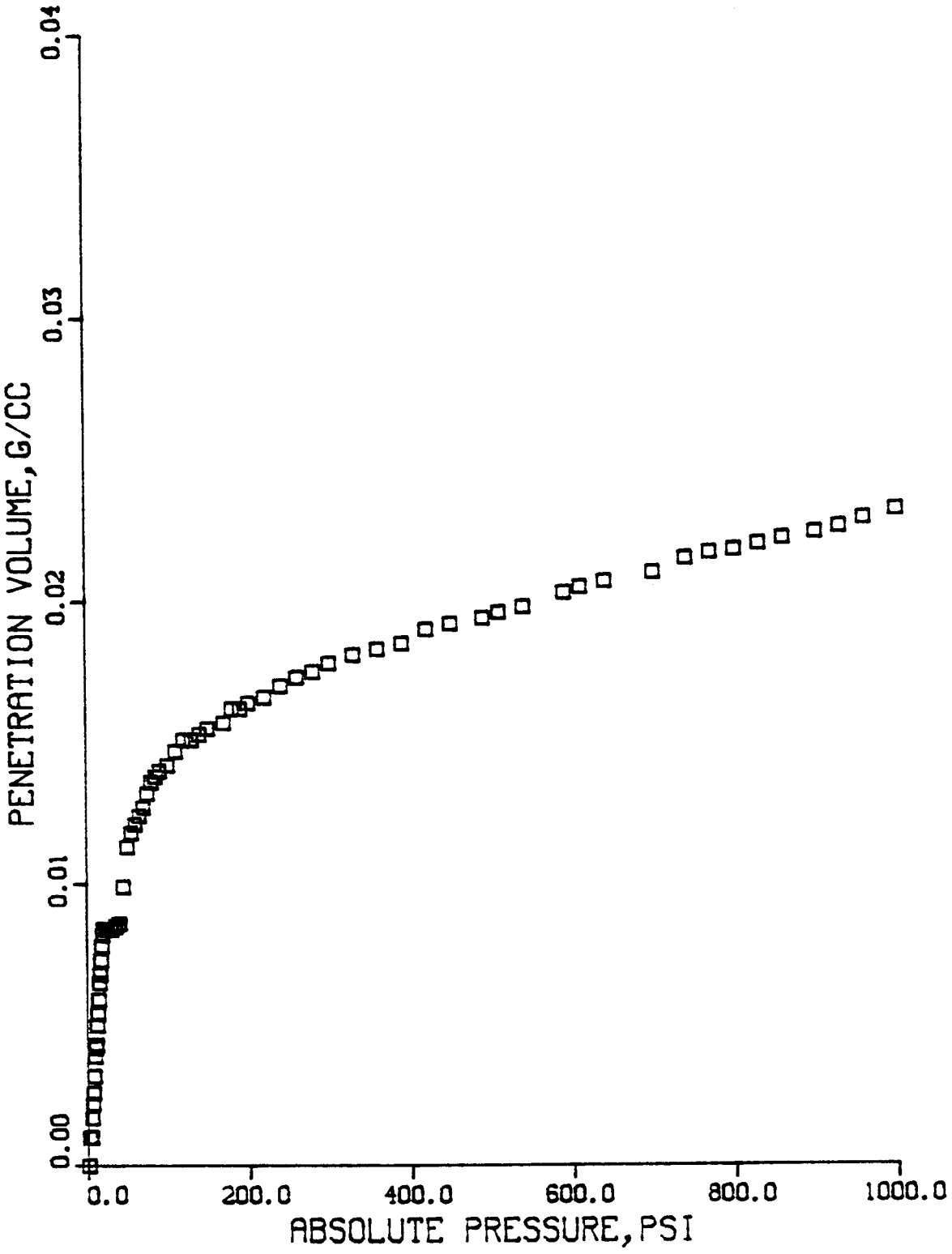
1000.0
ABSOLUTE PRESSURE, PSI

K 41399.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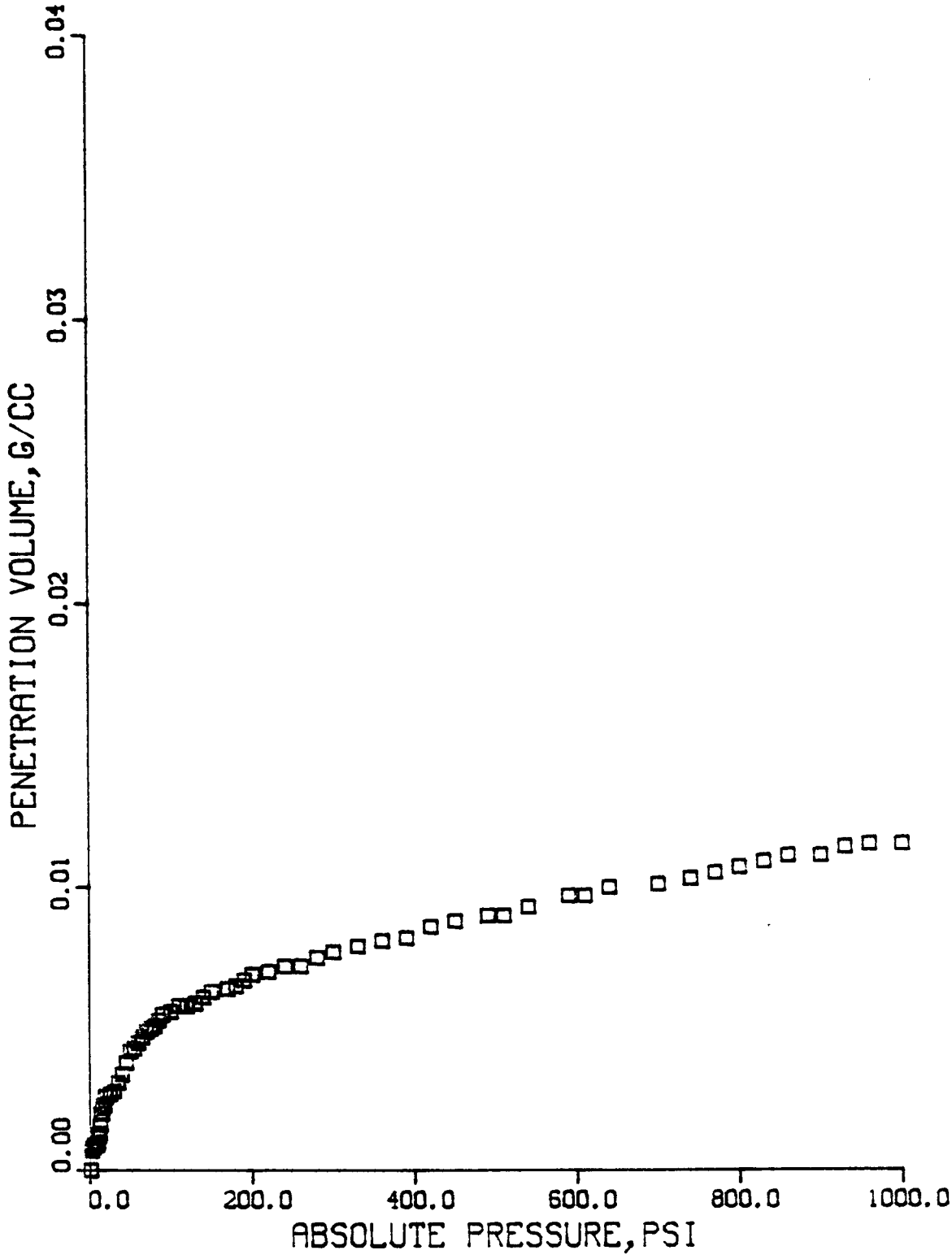
1000.0
ABSOLUTE PRESSURE, PSI

K 41379.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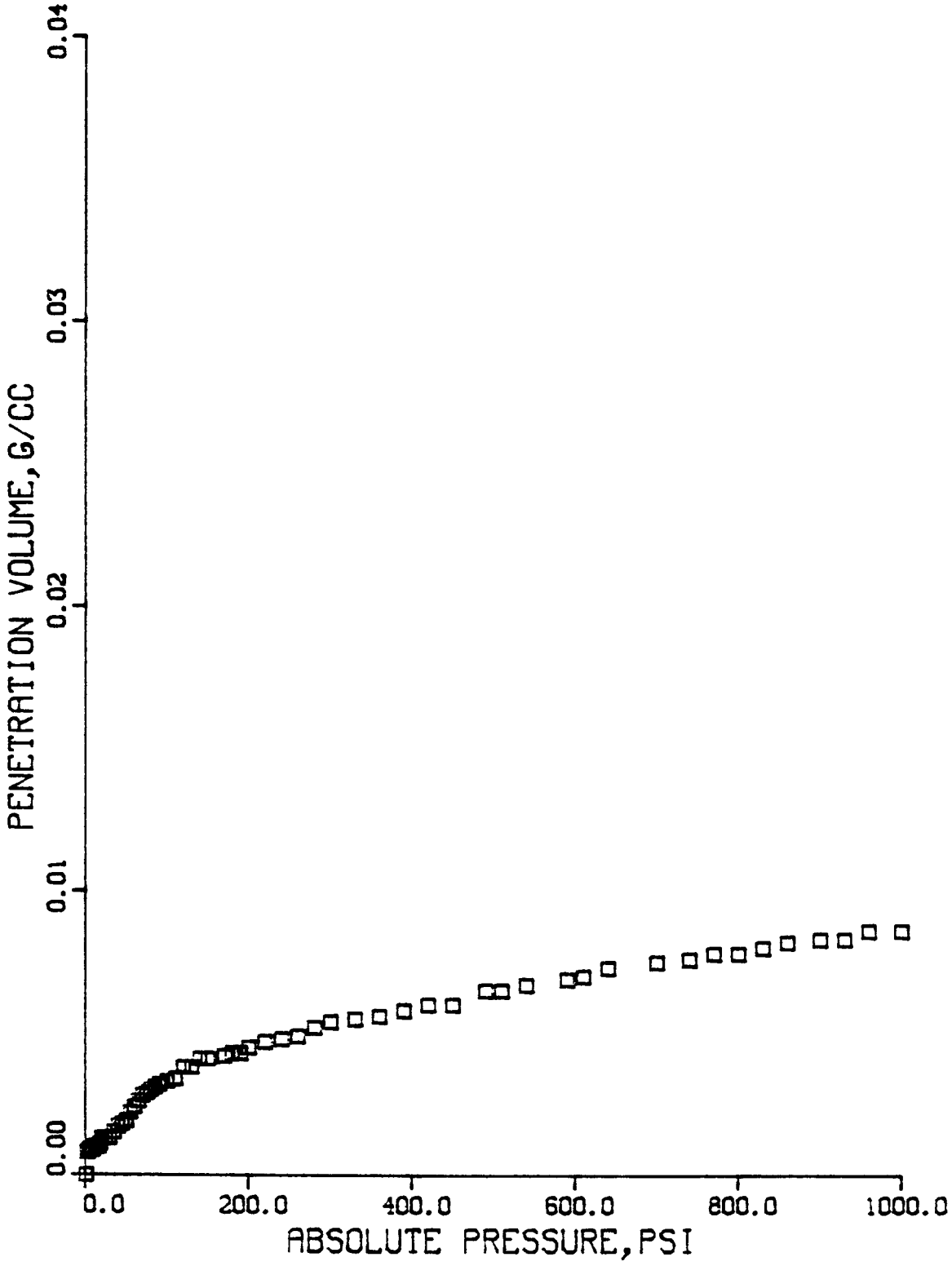
800.0
1000.0
ABSOLUTE PRESSURE, PSI

K 41359.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0.04
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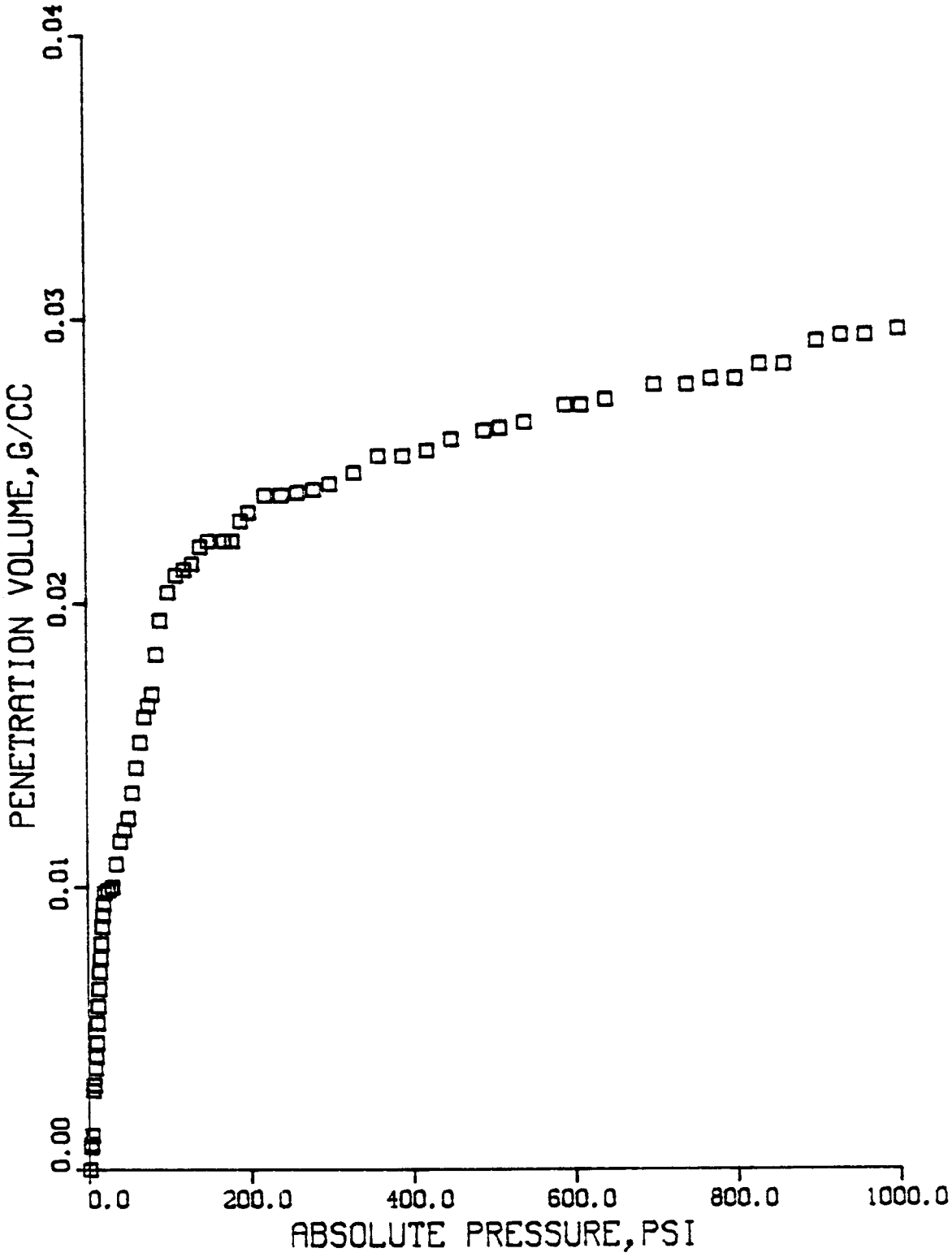
800.0
1000.0
ABSOLUTE PRESSURE,PSI

K 41339.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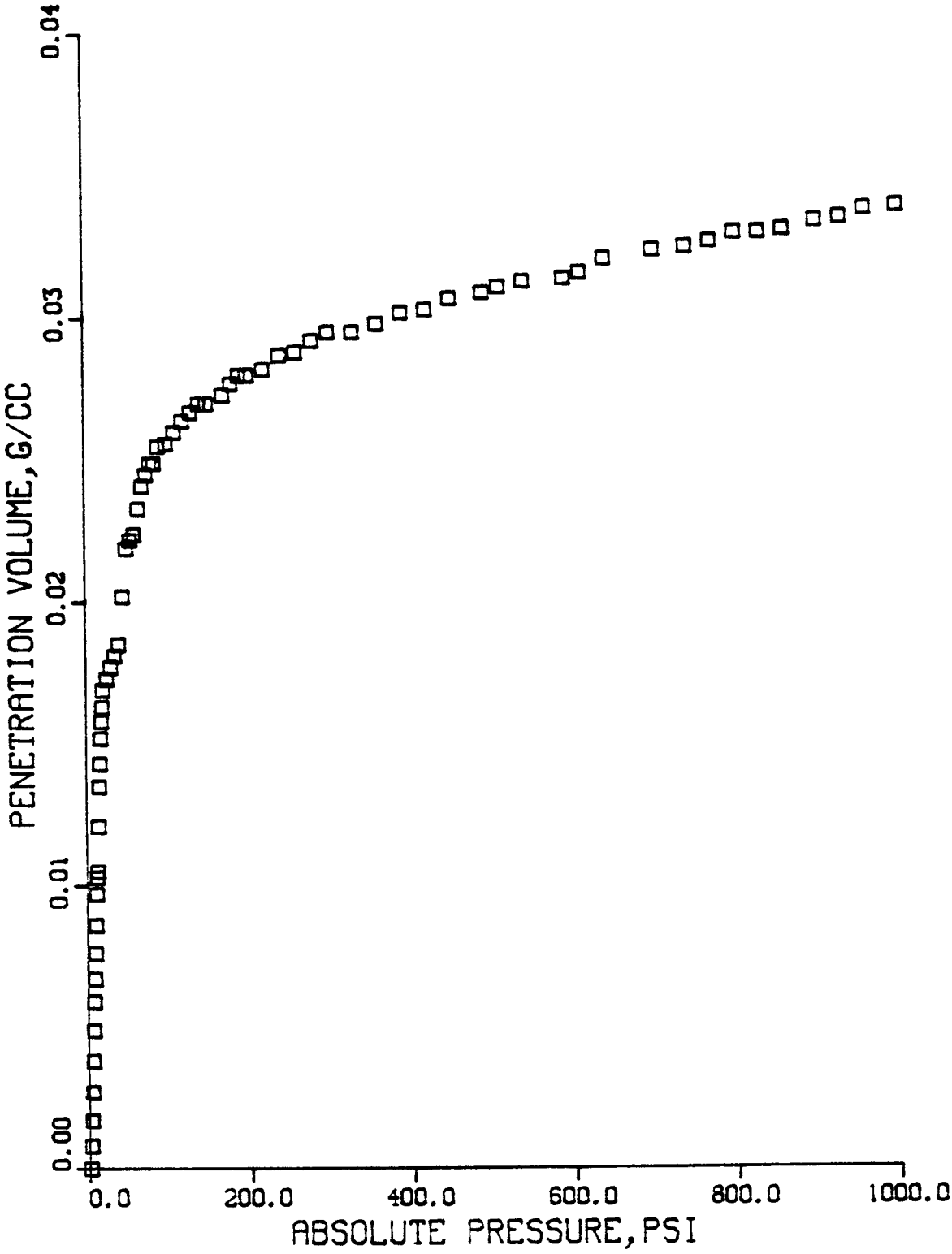
ABSOLUTE PRESSURE,PSI

K 41319.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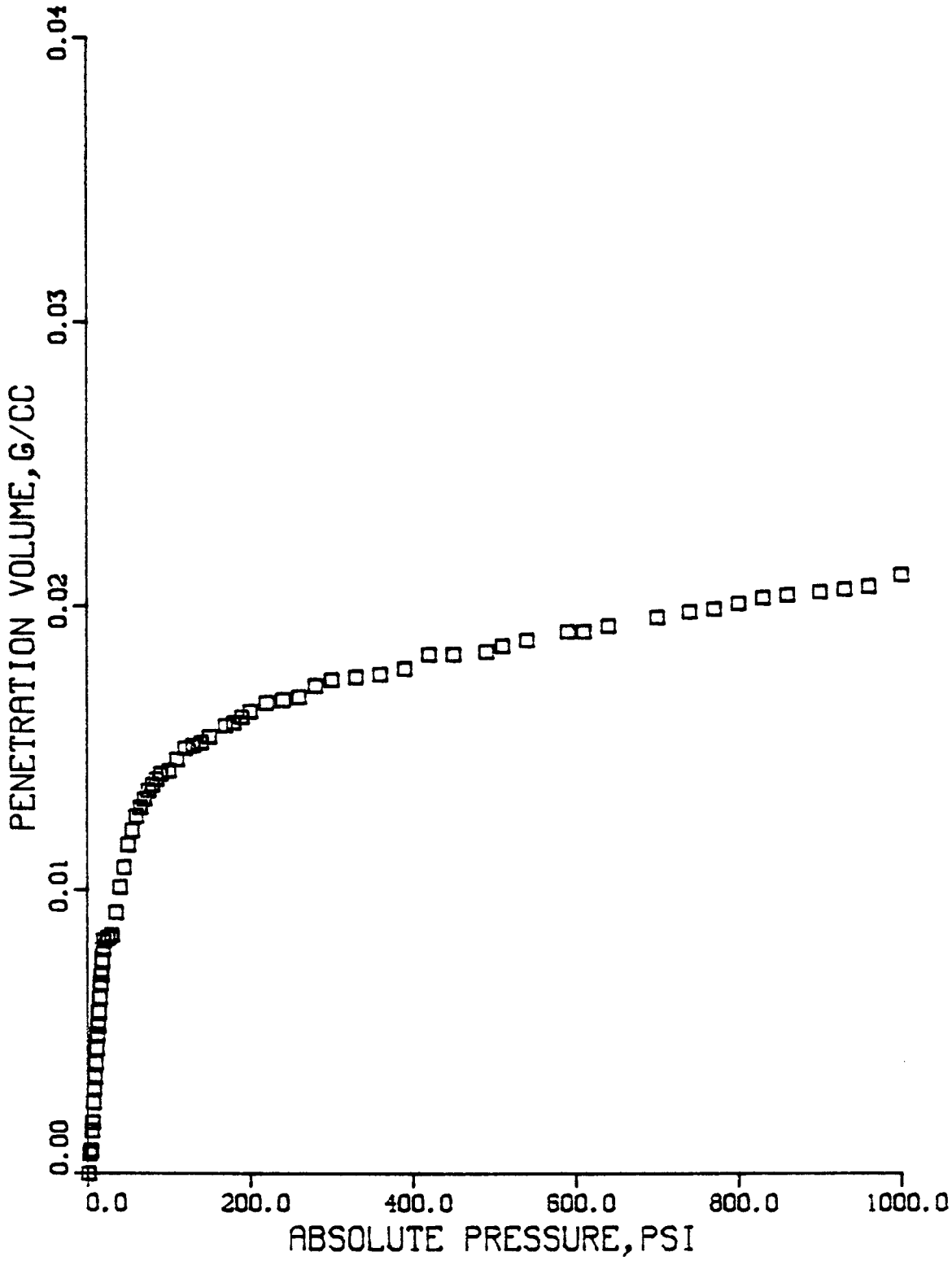
ABSOLUTE PRESSURE, PSI

K 41300.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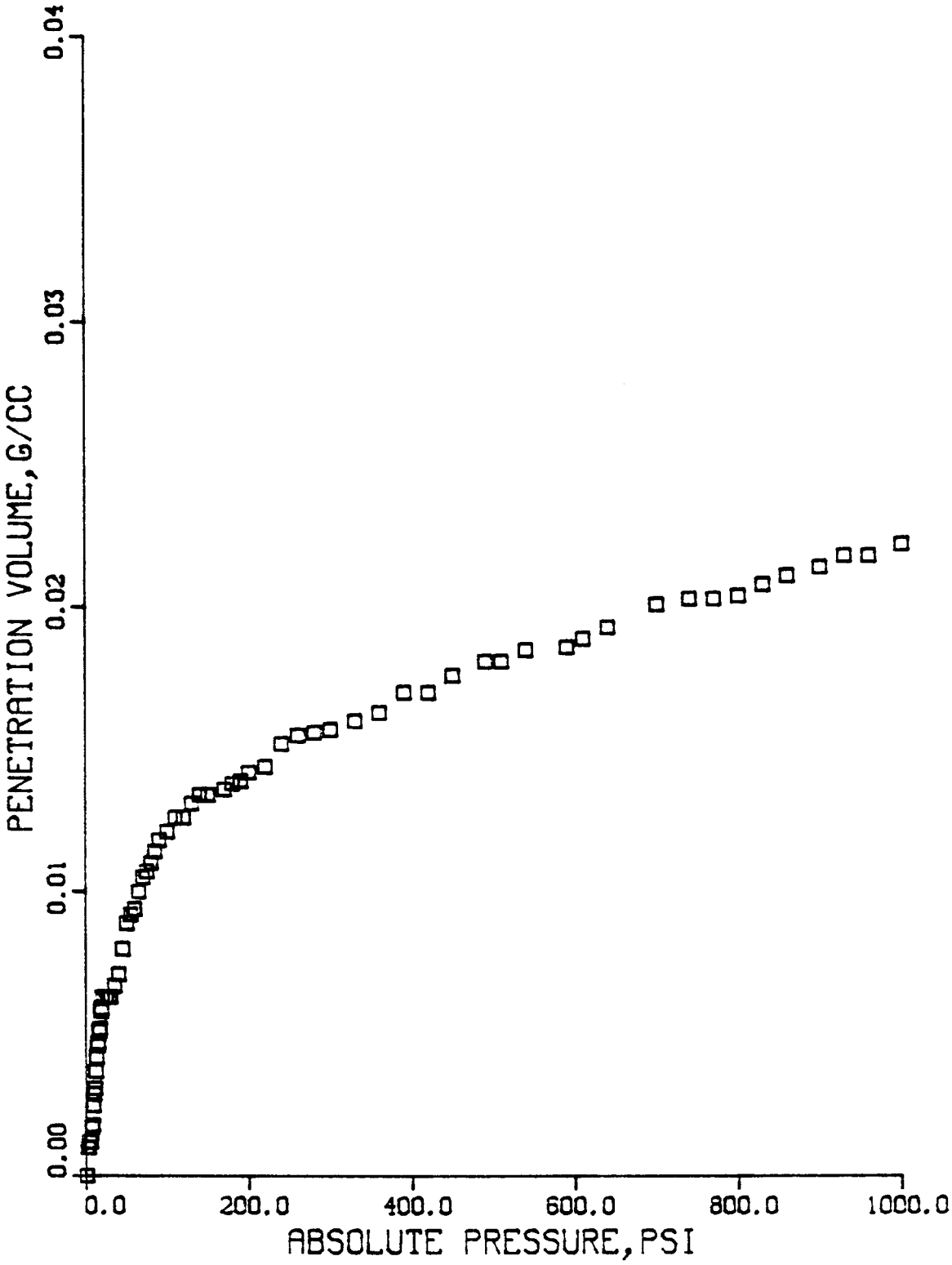
ABSOLUTE PRESSURE, PSI

K 41260.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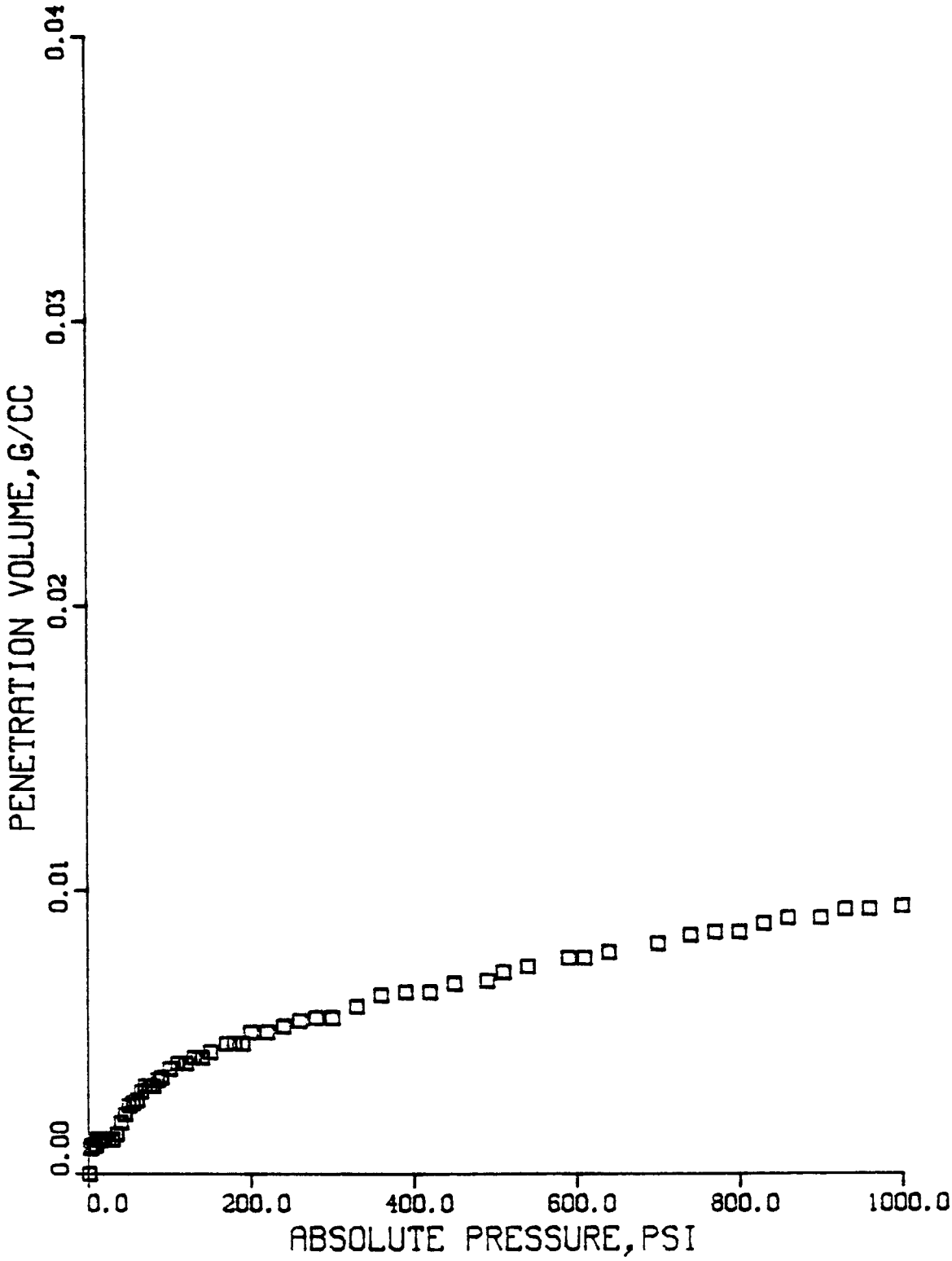
ABSOLUTE PRESSURE, PSI

K 41241.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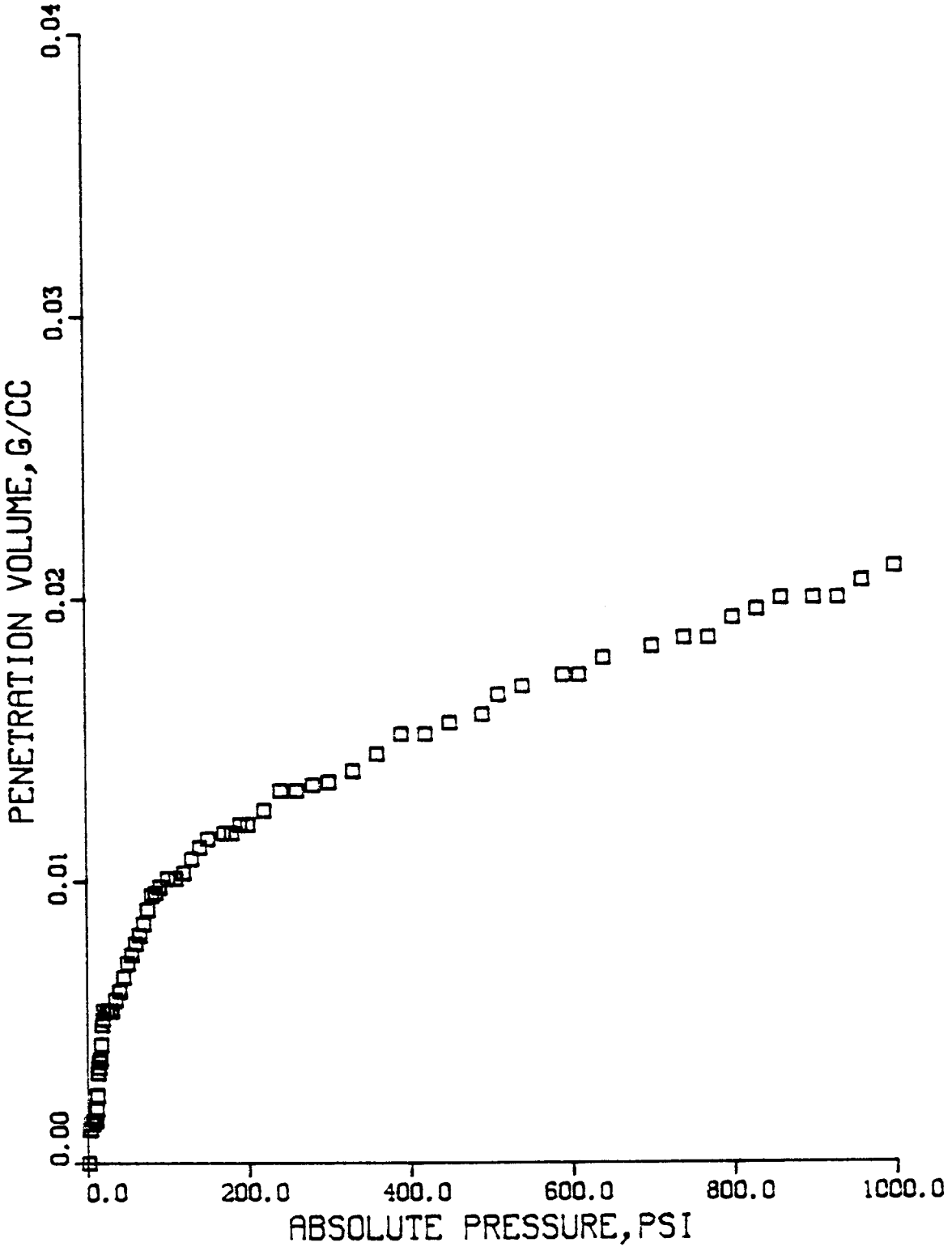
ABSOLUTE PRESSURE,PSI

K 41221.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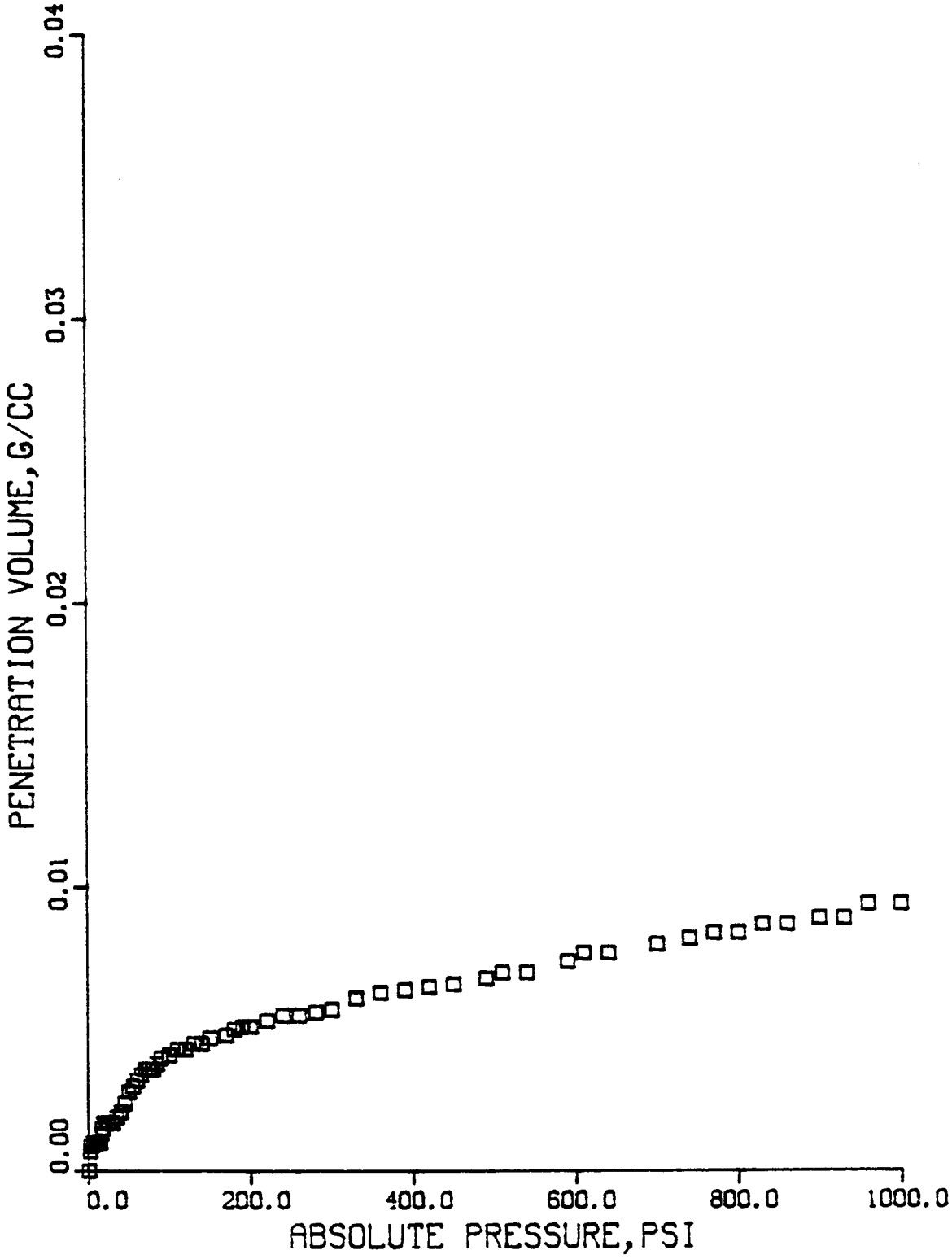
ABSOLUTE PRESSURE, PSI

K 41201.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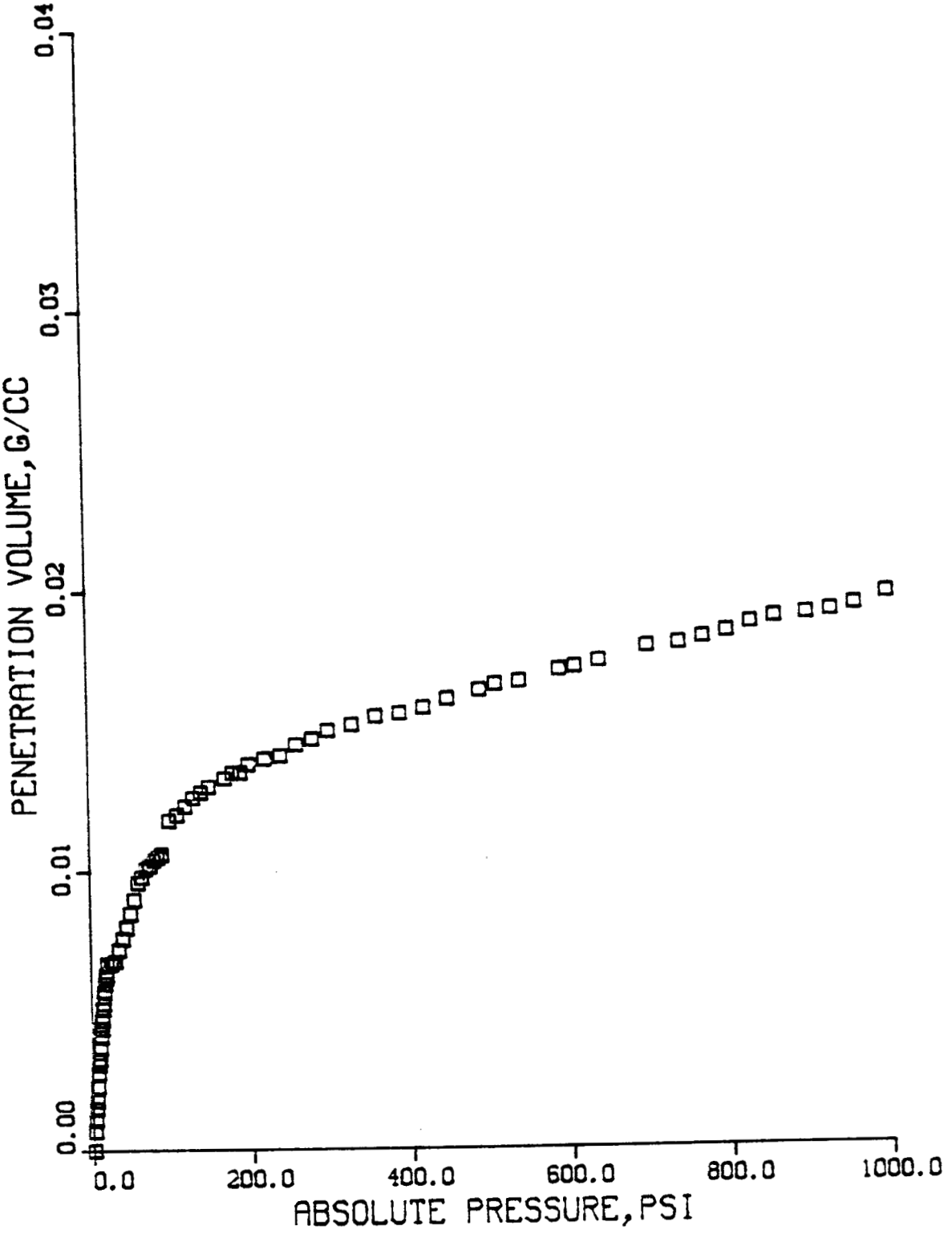
ABSOLUTE PRESSURE, PSI

K 41183.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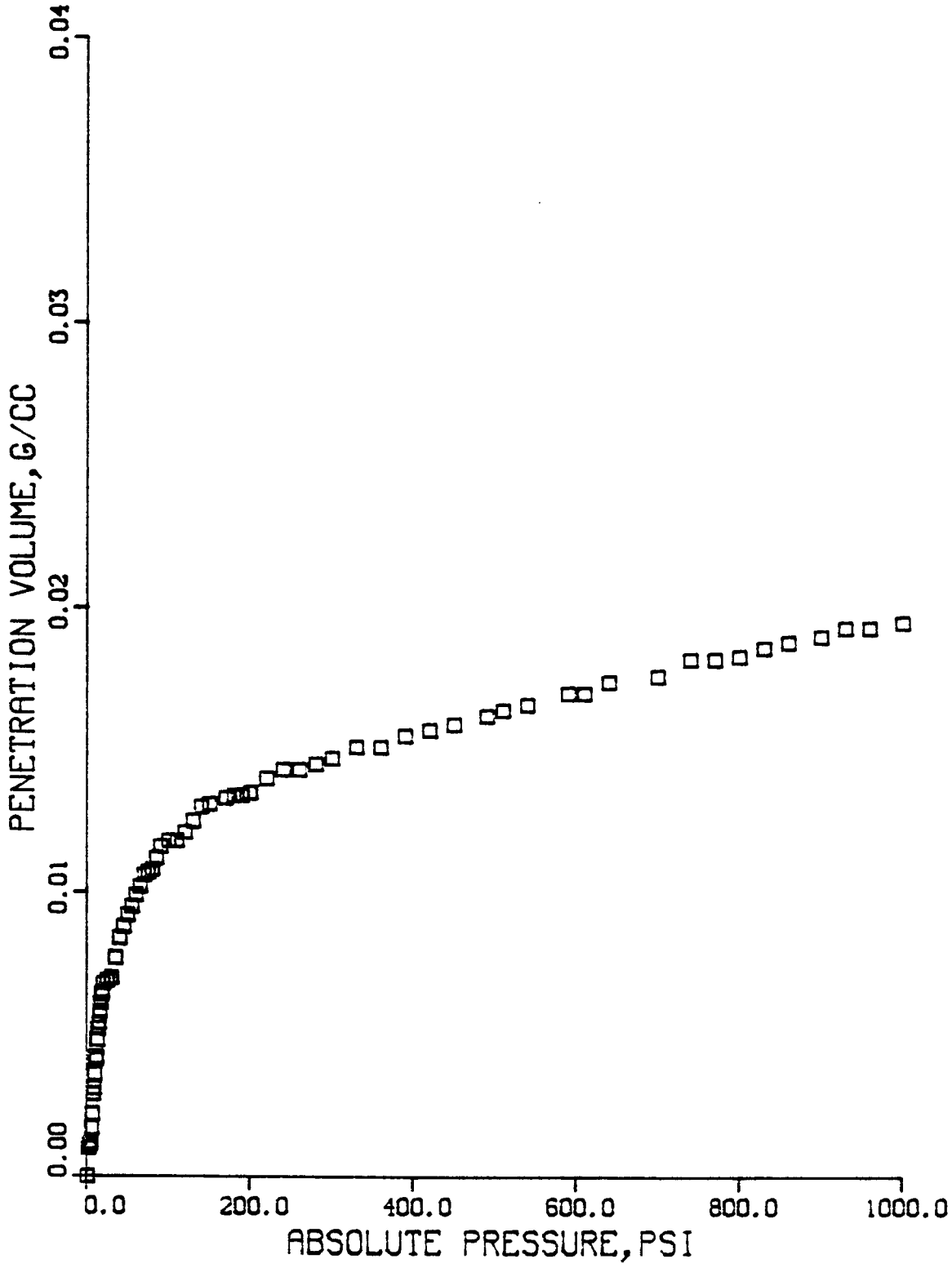
ABSOLUTE PRESSURE, PSI

K 41163.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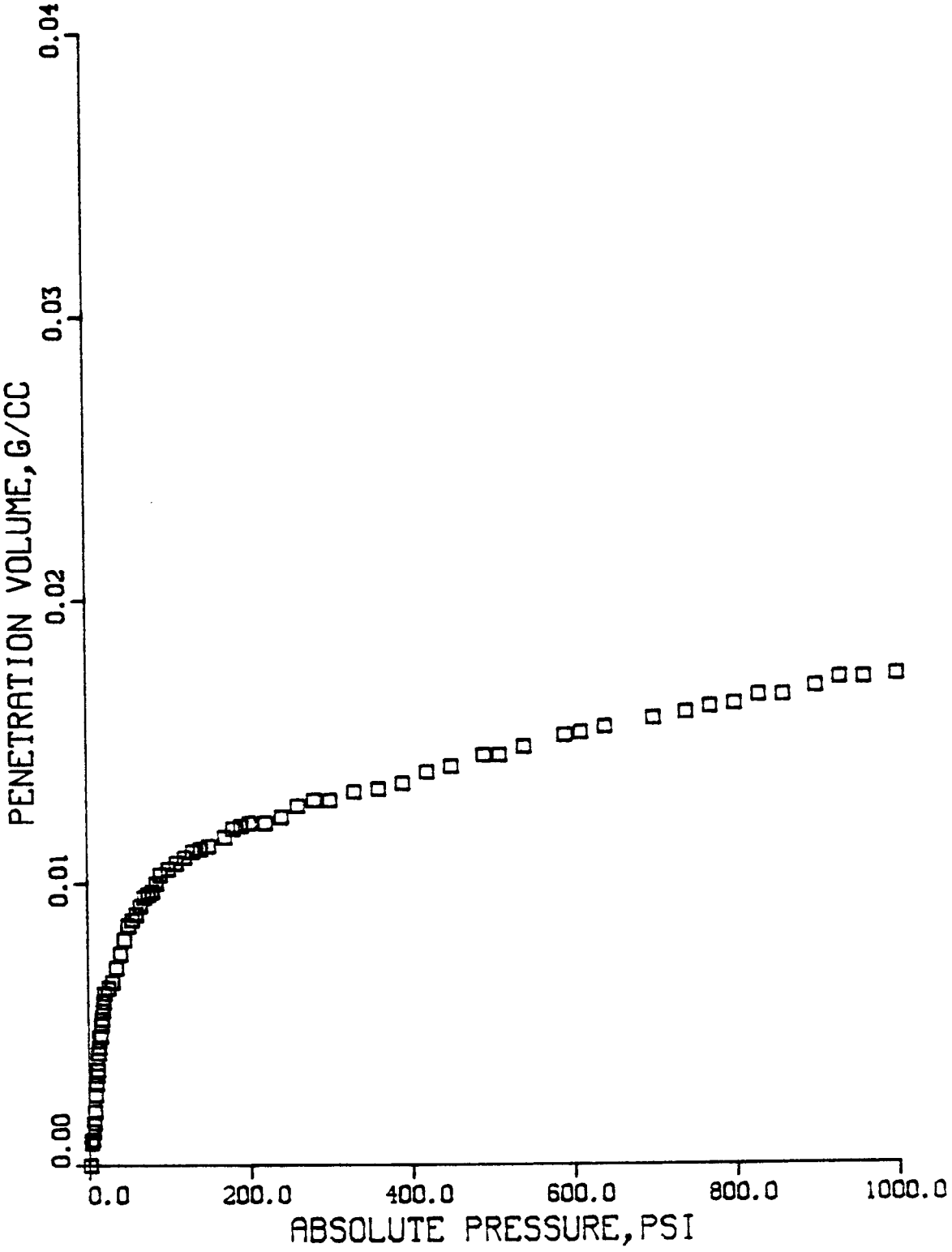
ABSOLUTE PRESSURE,PSI

K 41143.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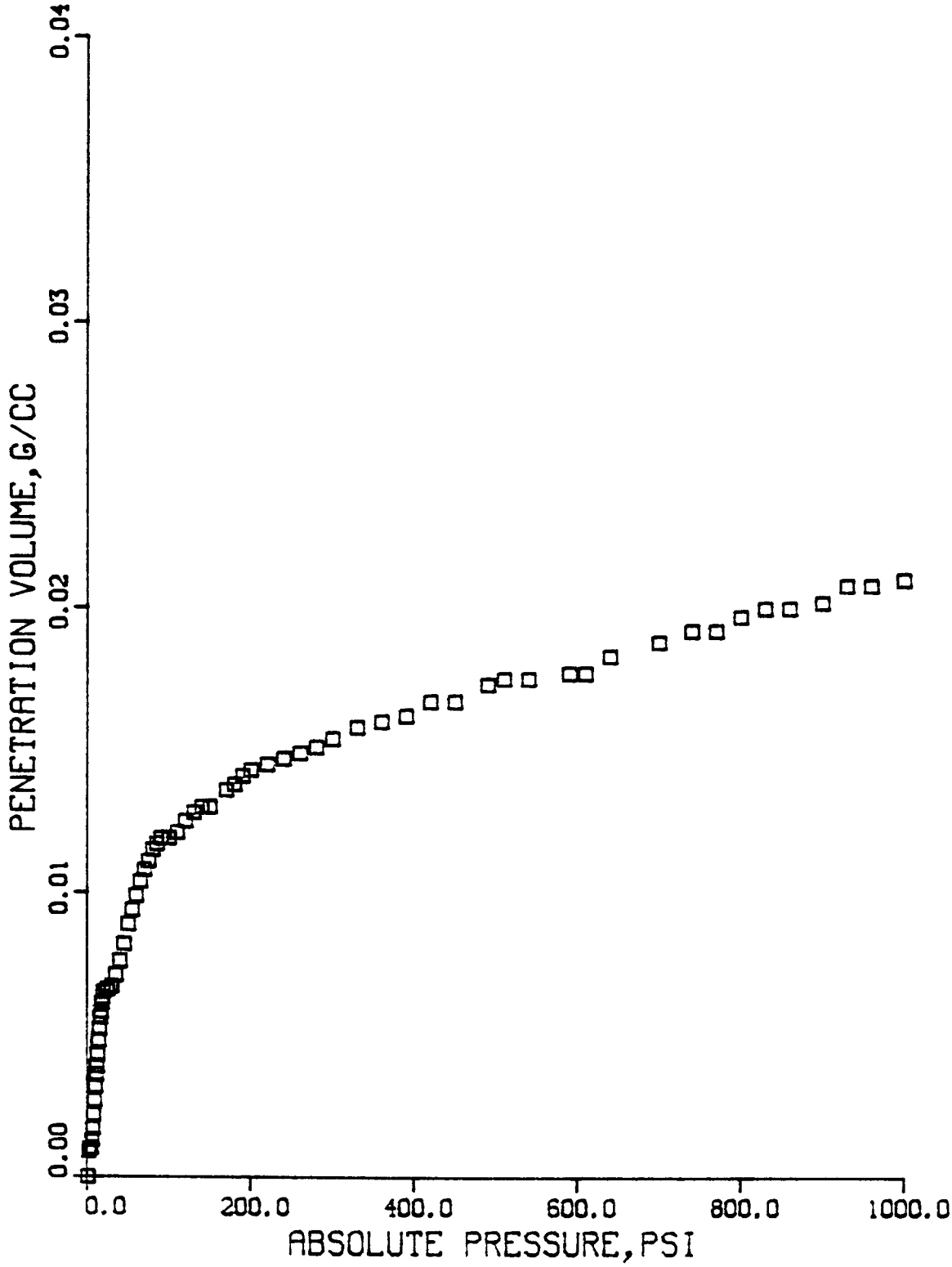
ABSOLUTE PRESSURE, PSI

K 41126.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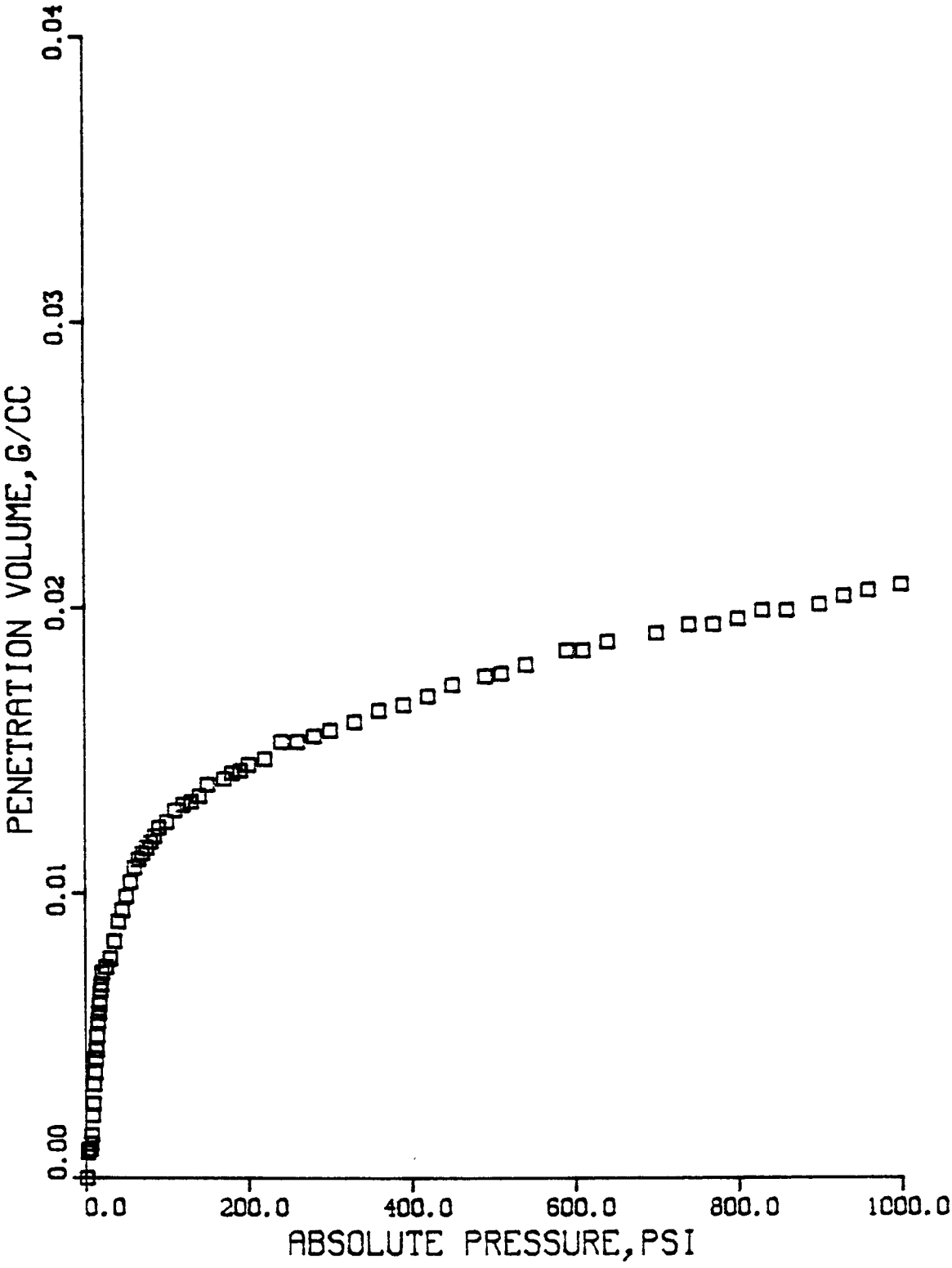
ABSOLUTE PRESSURE,PSI

K 41096.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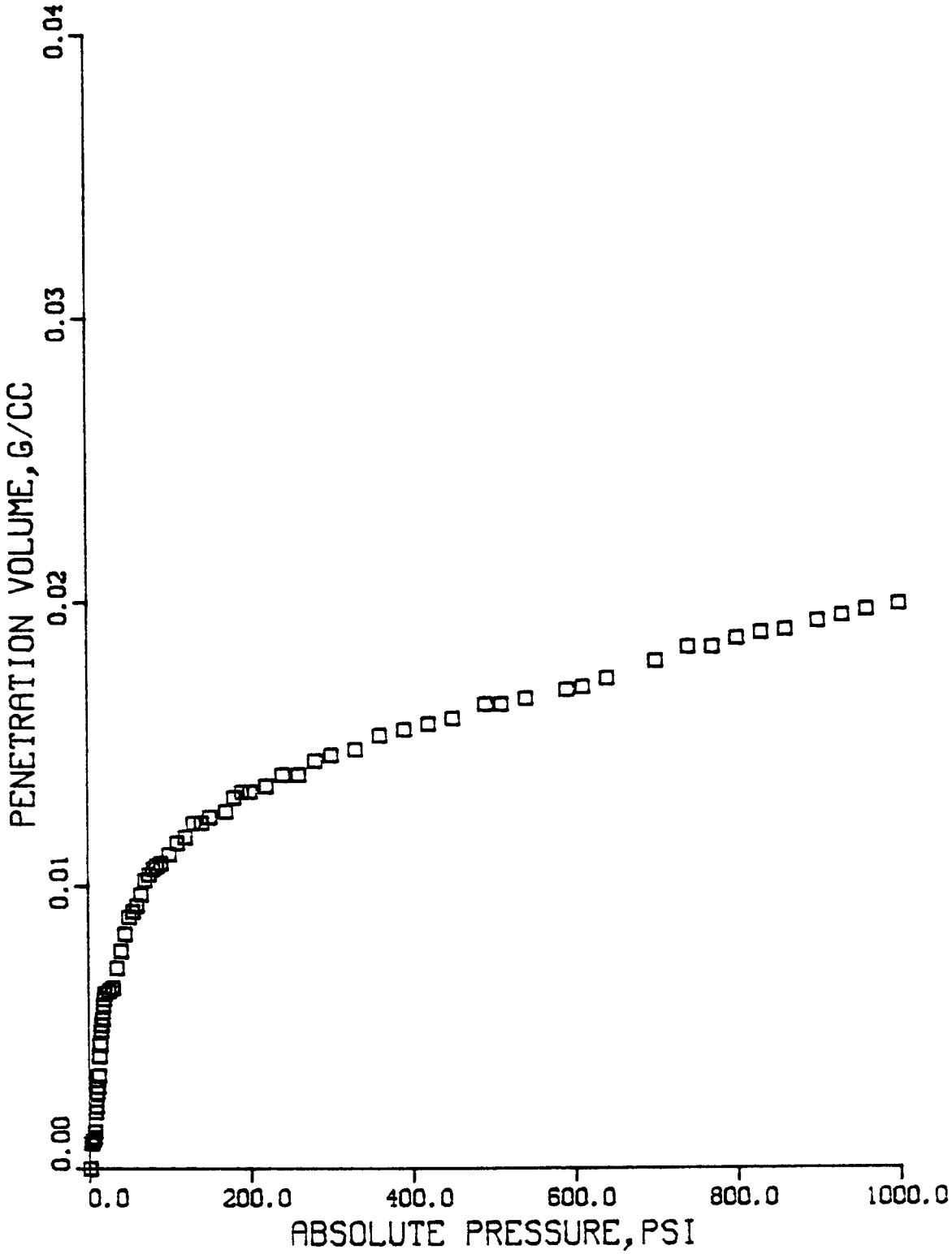
ABSOLUTE PRESSURE,PSI

K 41079.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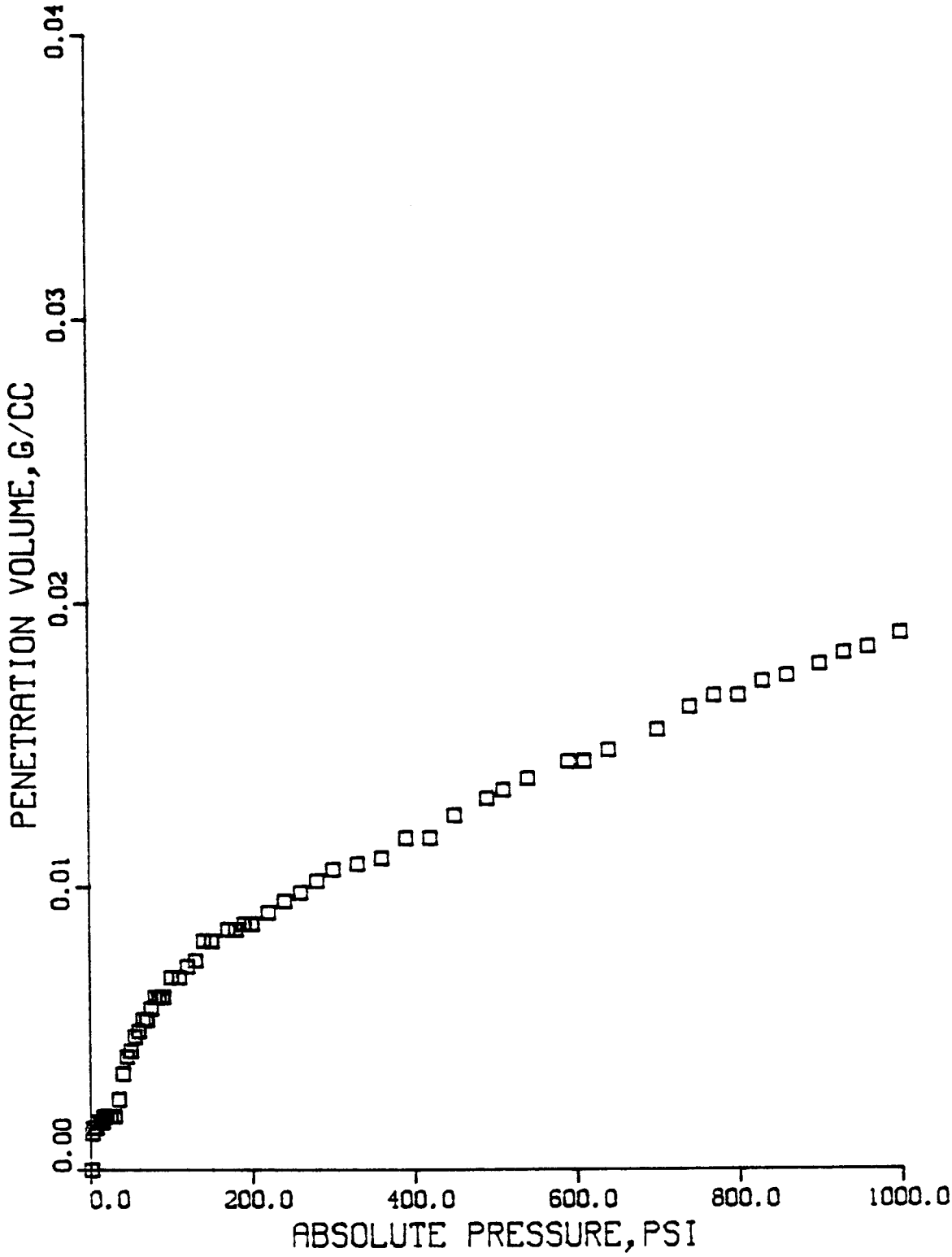
ABSOLUTE PRESSURE,PSI

K 41059.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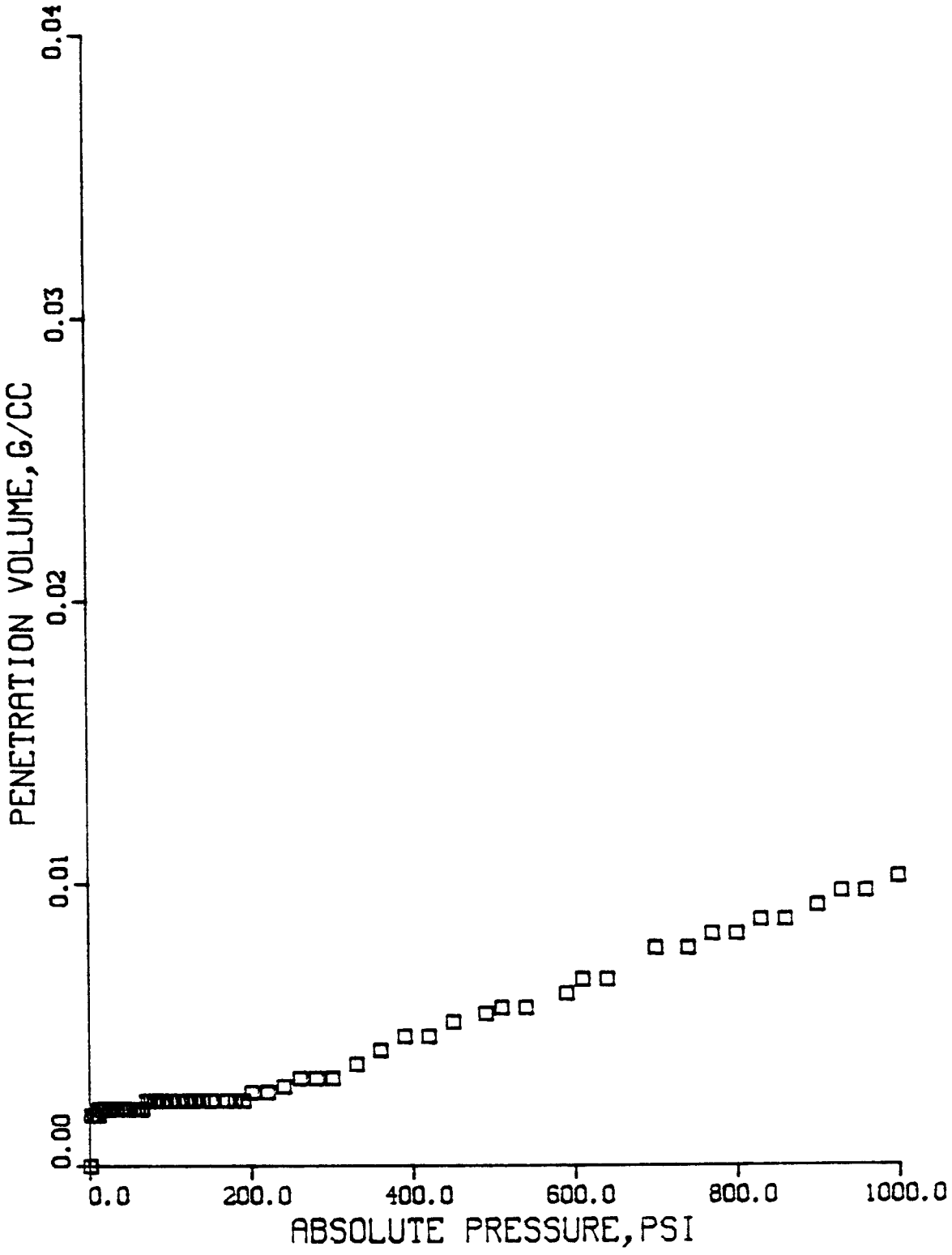
ABSOLUTE PRESSURE, PSI

K 41039.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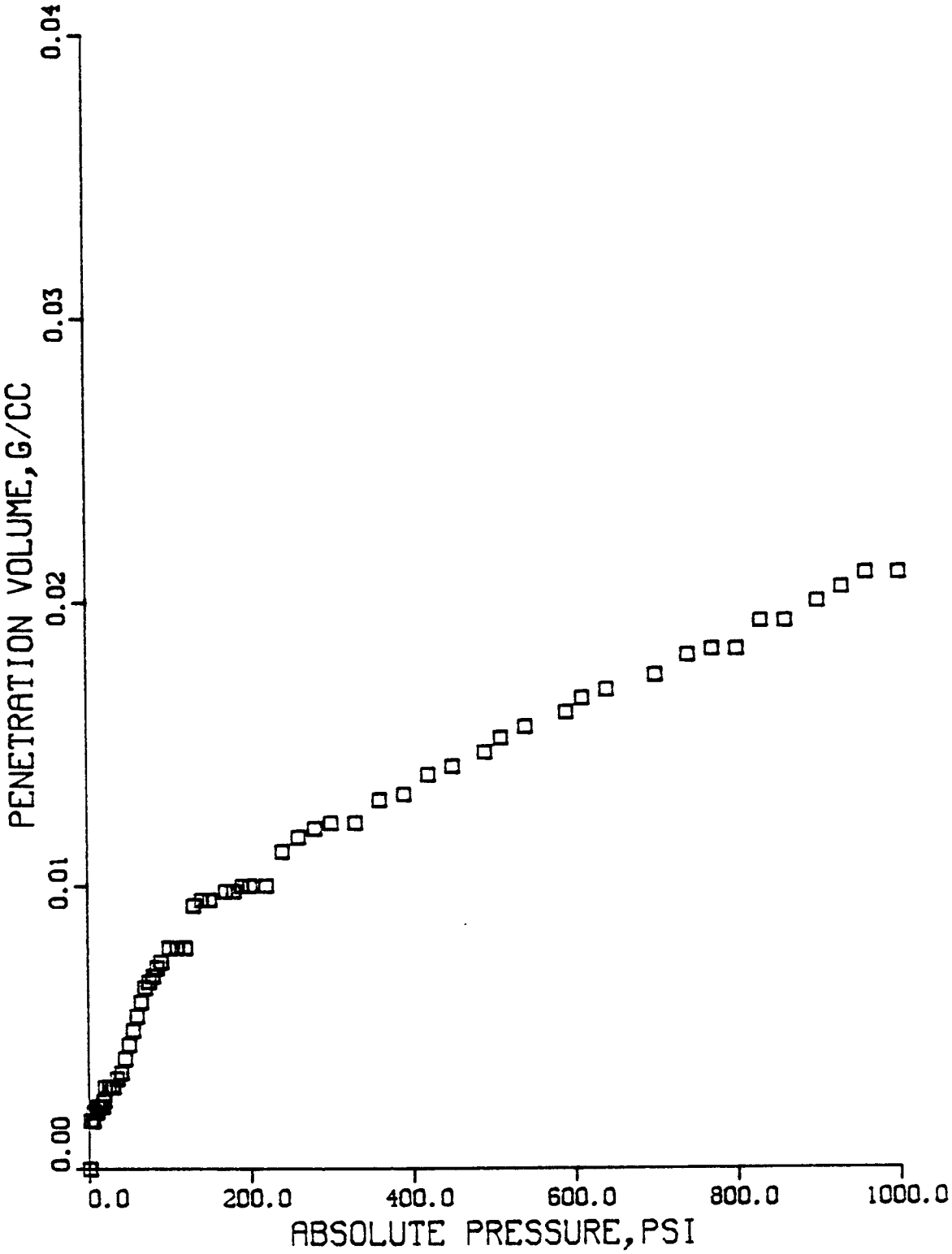
ABSOLUTE PRESSURE,PSI

K 41009.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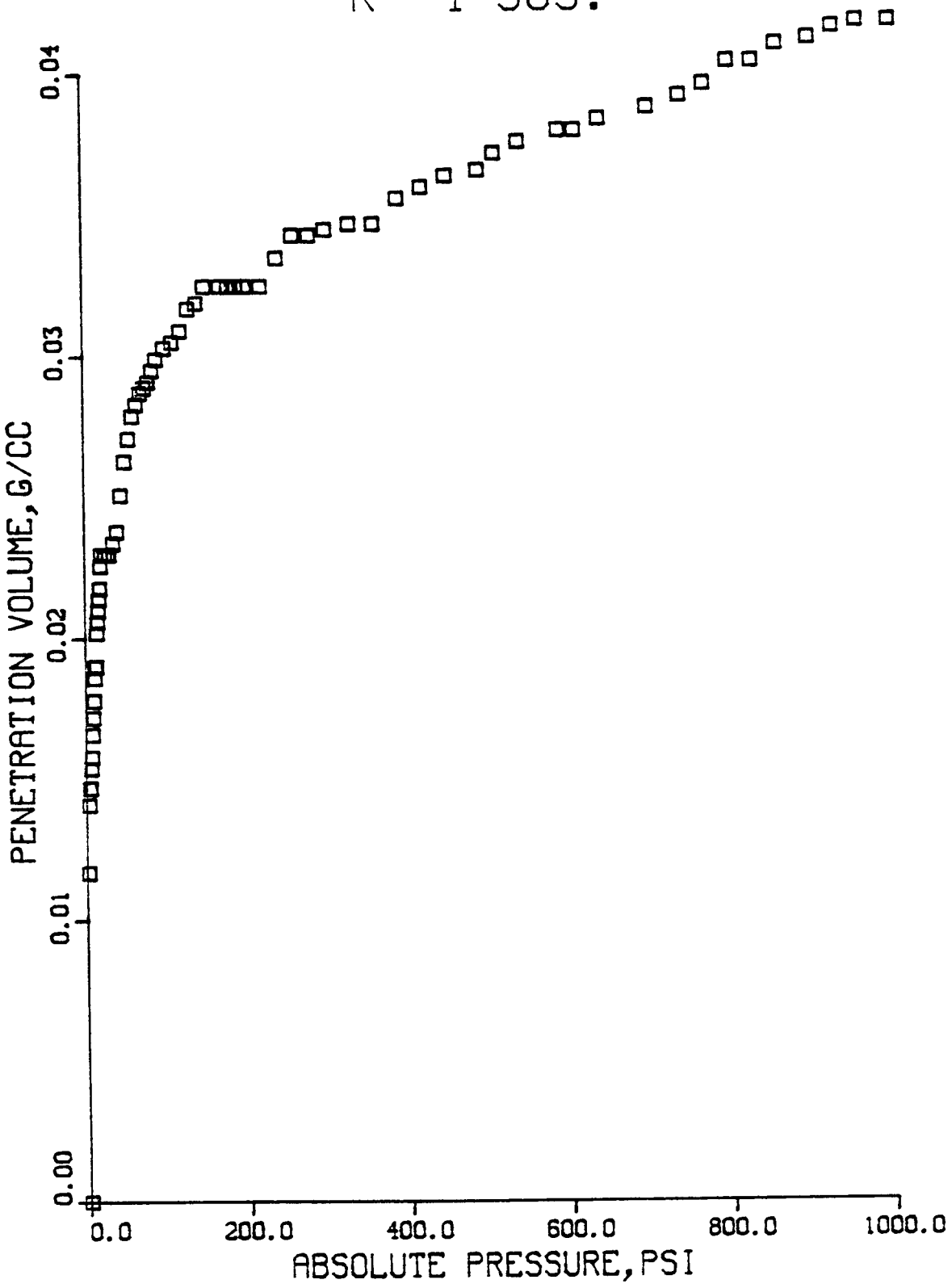
ABSOLUTE PRESSURE,PSI

K 4 989.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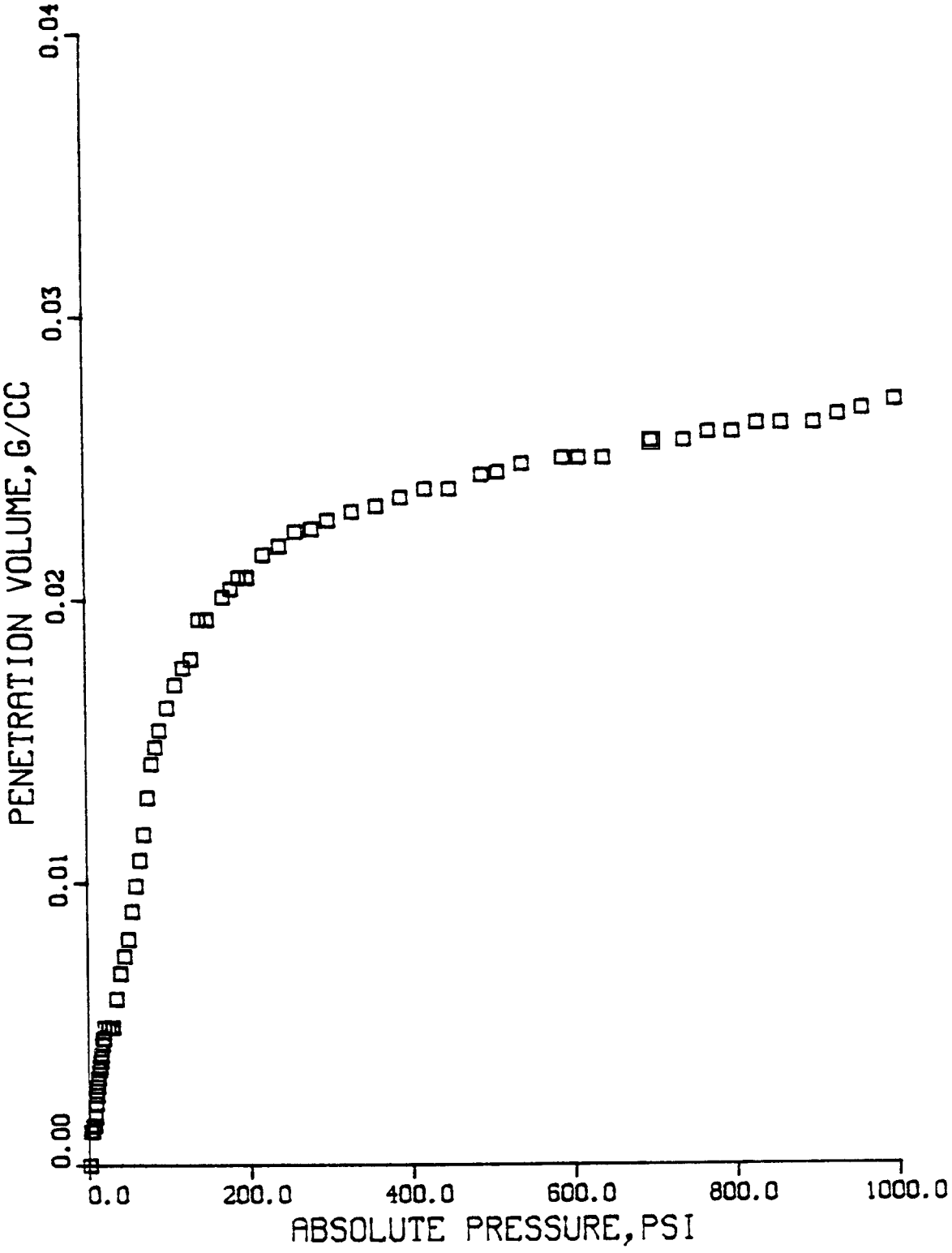
ABSOLUTE PRESSURE,PSI

K 4 969.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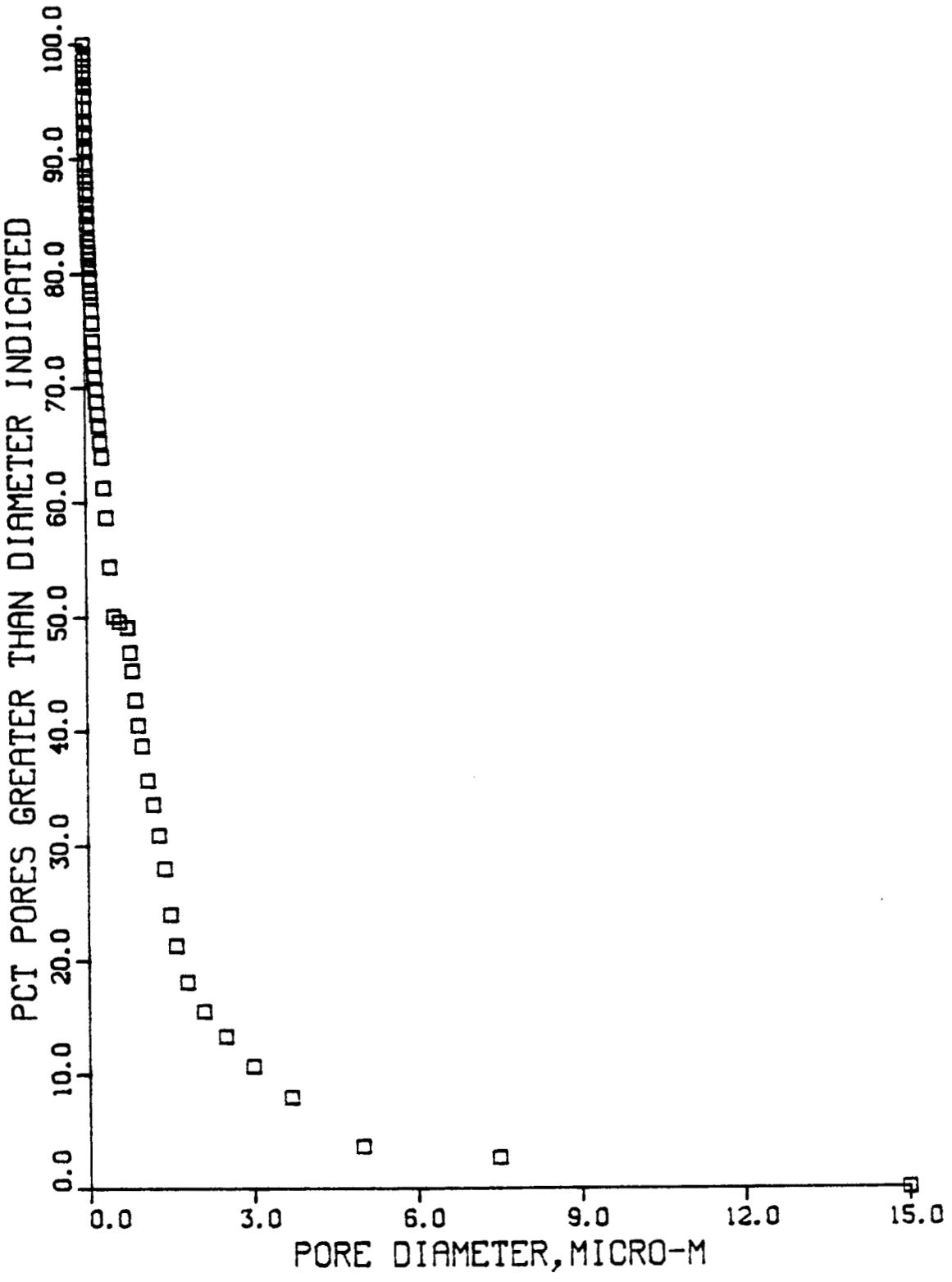
ABSOLUTE PRESSURE, PSI

K 41495.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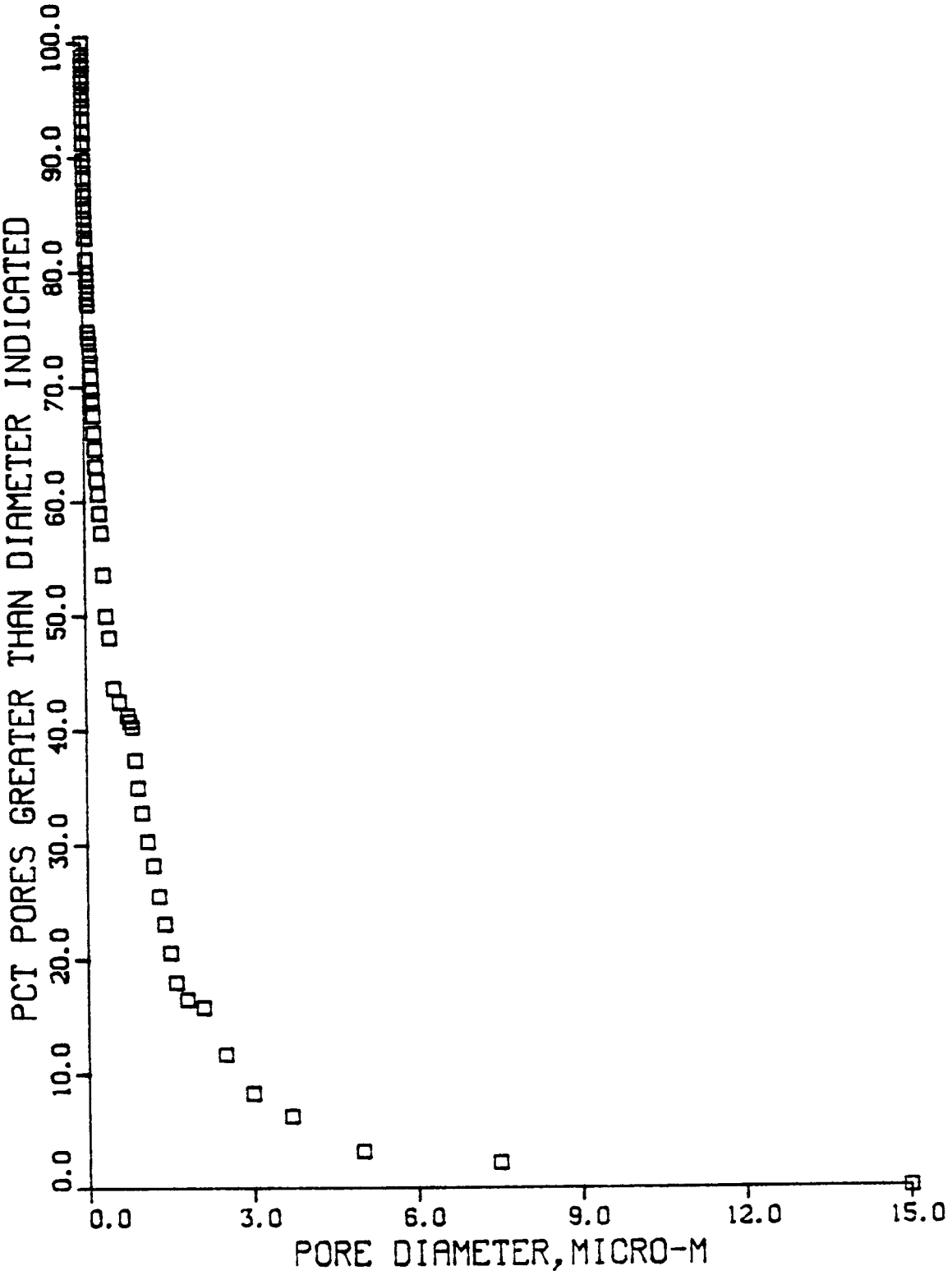
PORE DIAMETER,MICRO-M

K 41476.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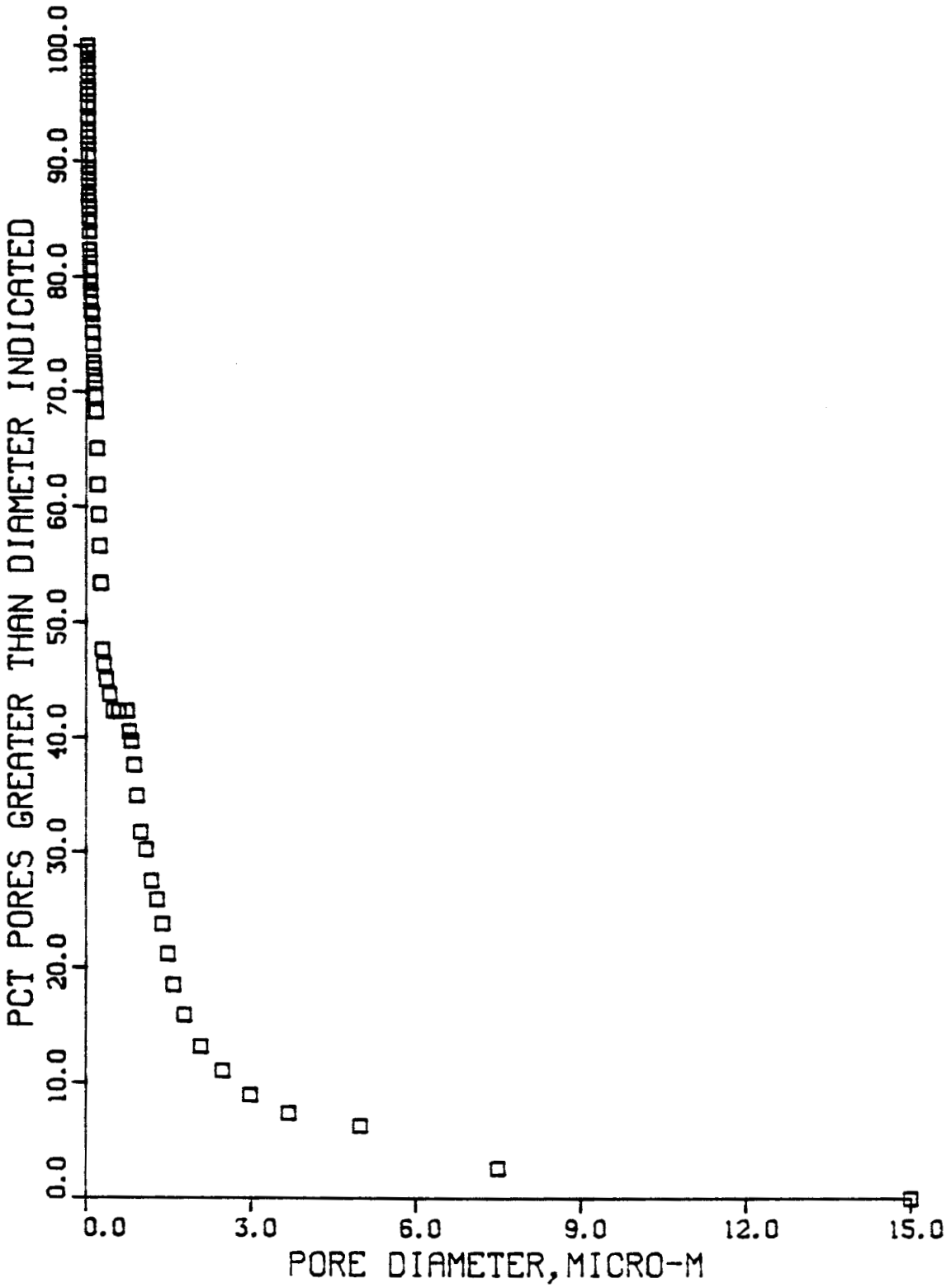
PORE DIAMETER, MICRO-M

K 41456.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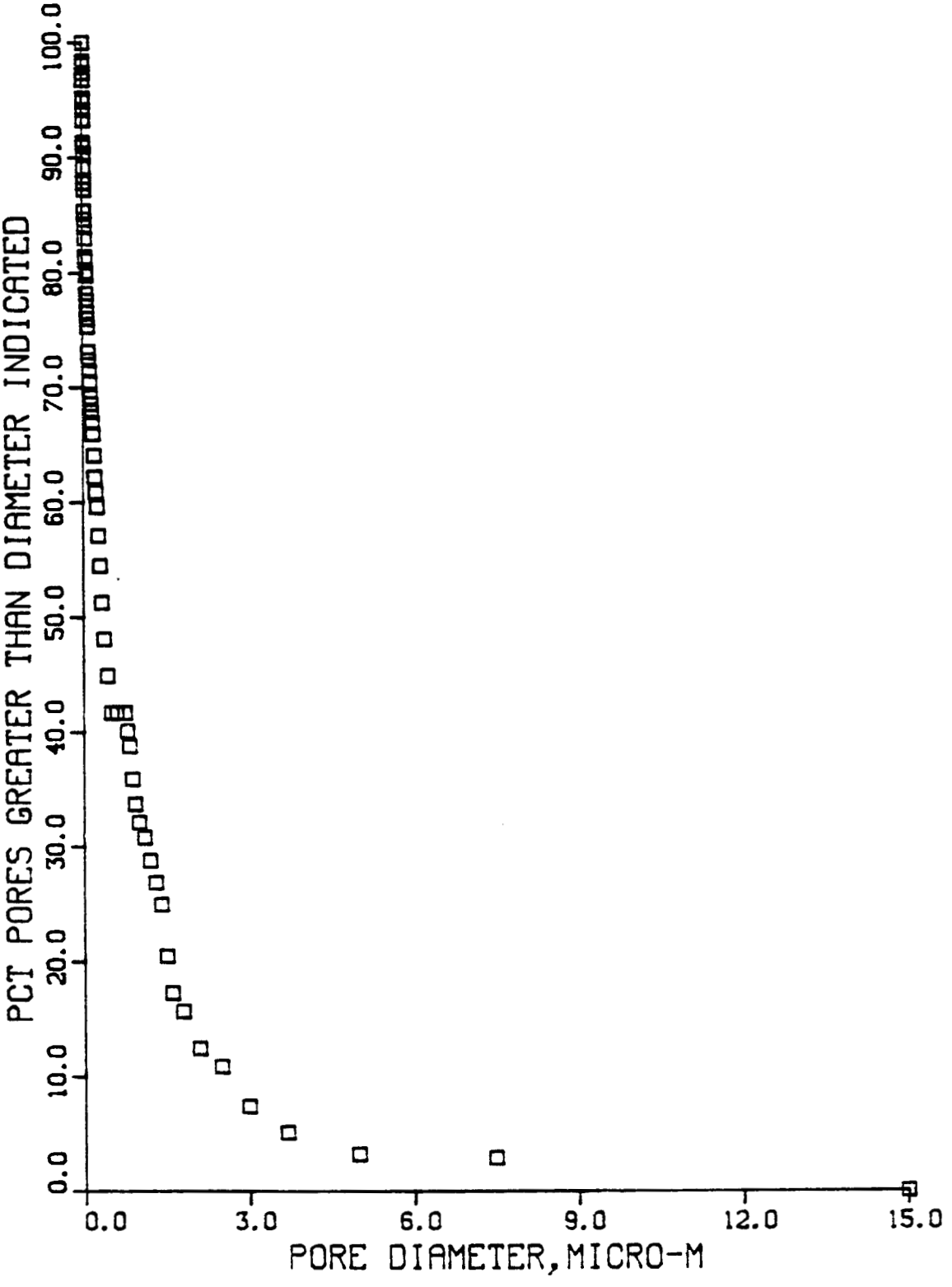
PORE DIAMETER, MICRO-M

K 41436.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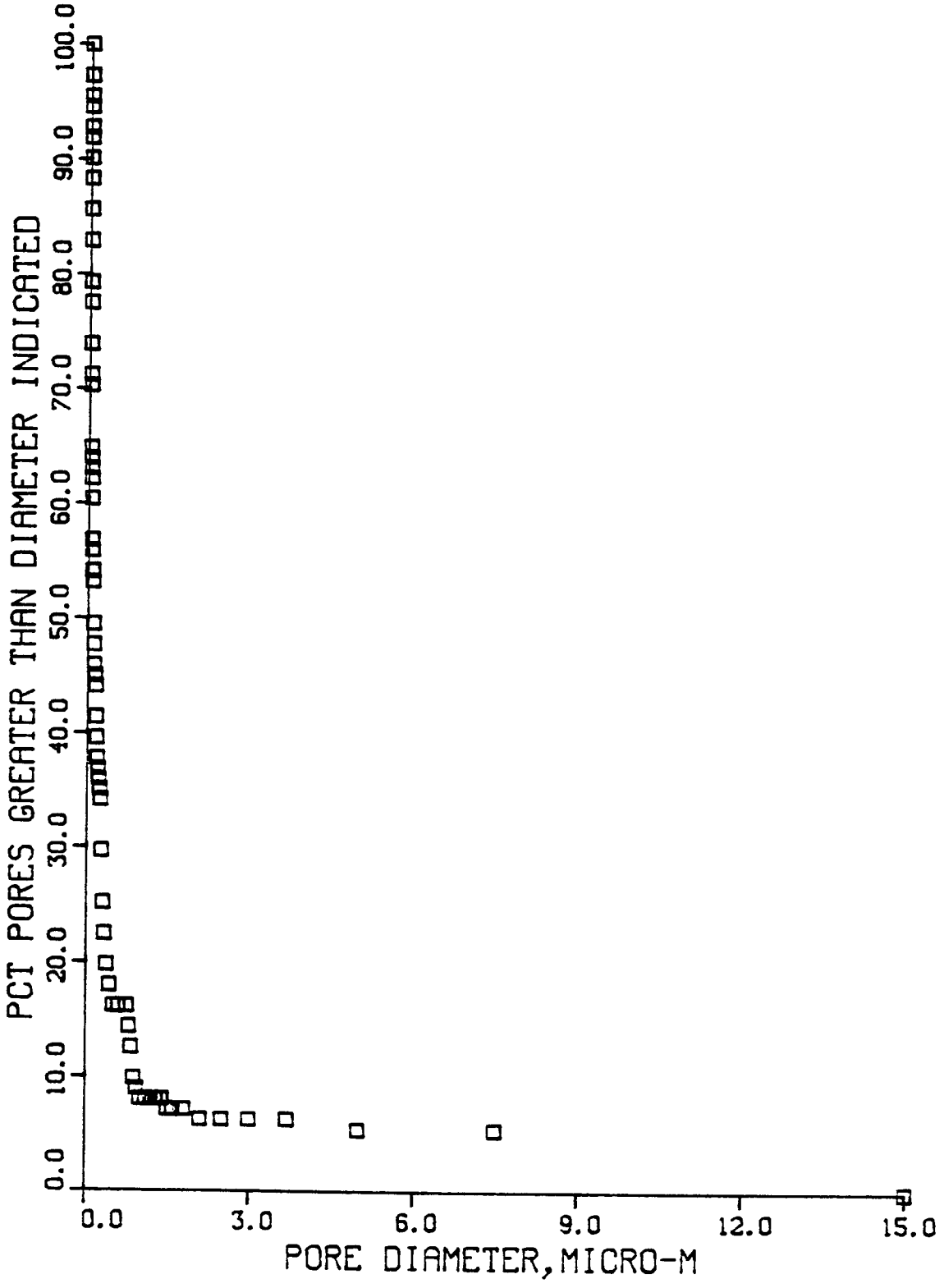
PORE DIAMETER, MICRO-M

K 41419.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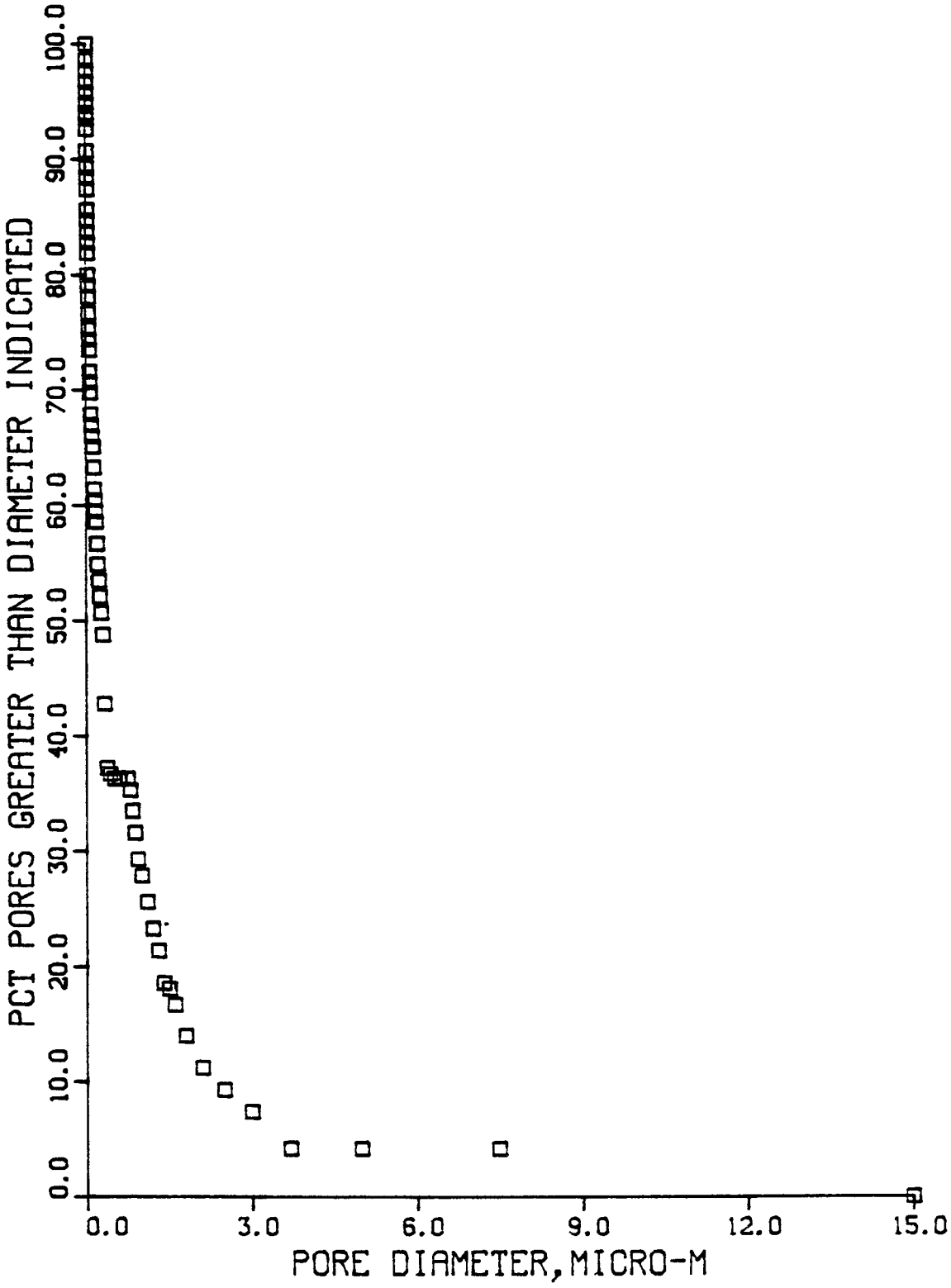
PORE DIAMETER, MICRO-M

K 41399.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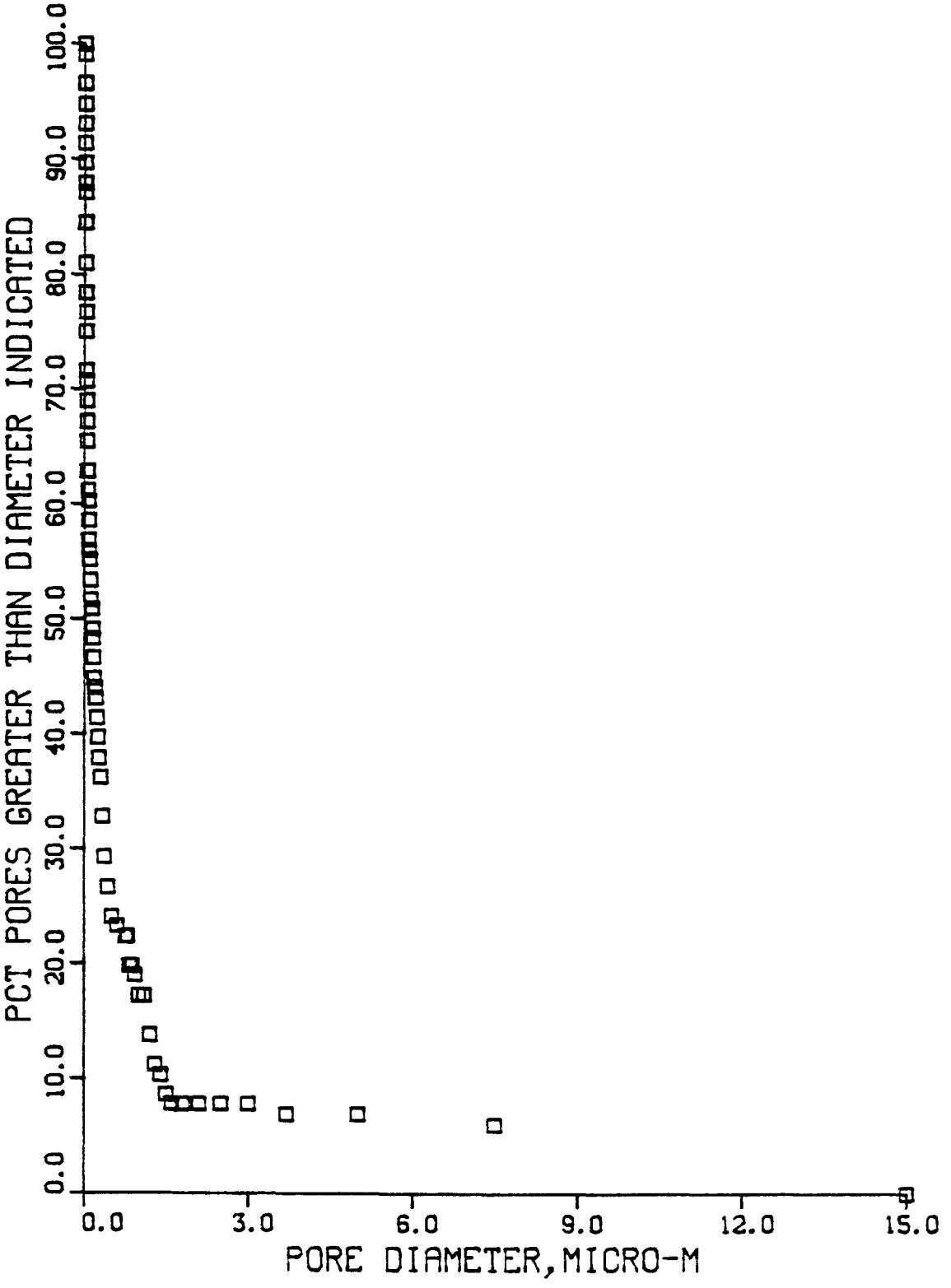
PORE DIAMETER,MICRO-M

K 41379.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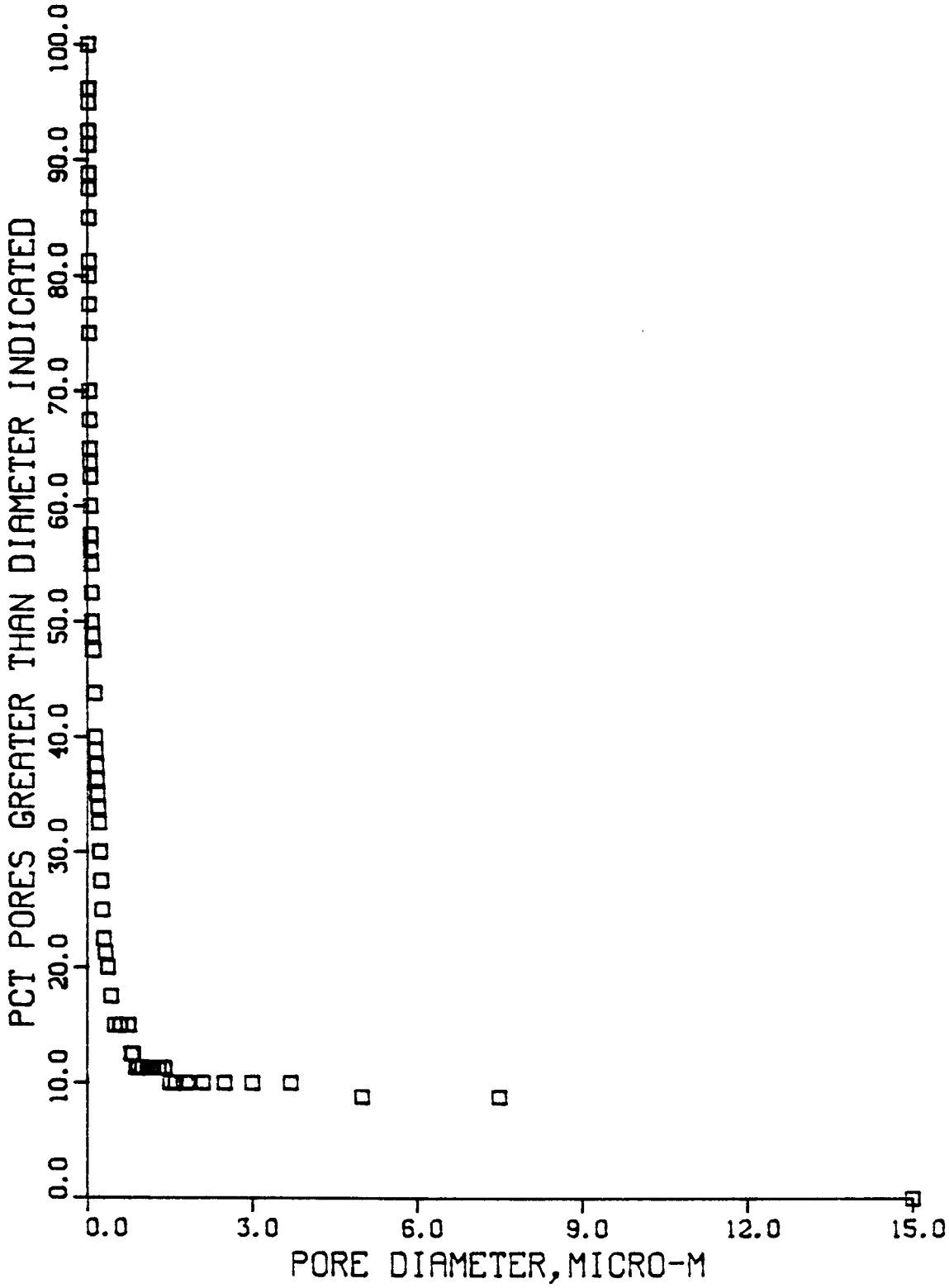
PORE DIAMETER,MICRO-M

K 41359.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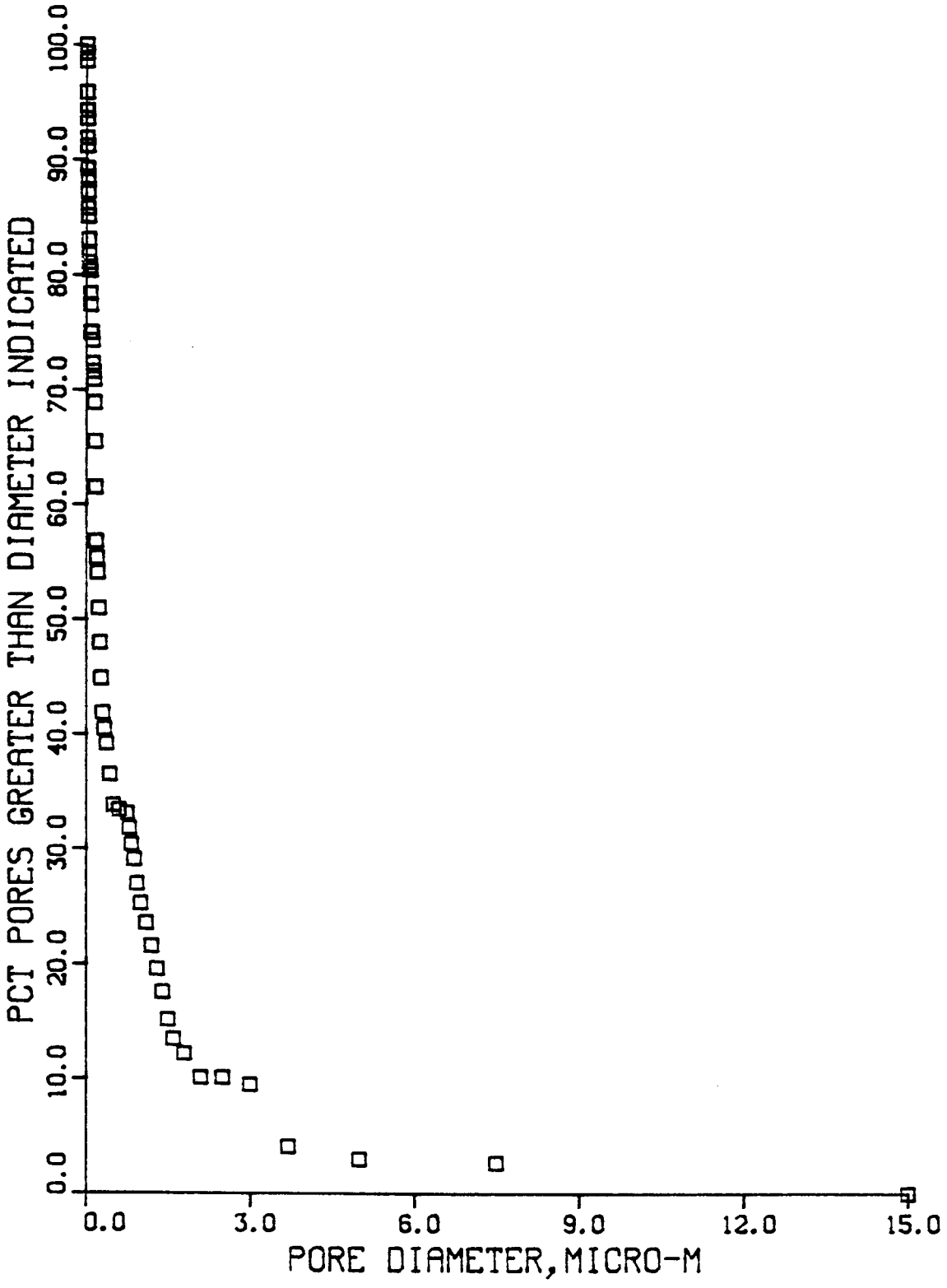
PORE DIAMETER, MICRO-M

K 41339.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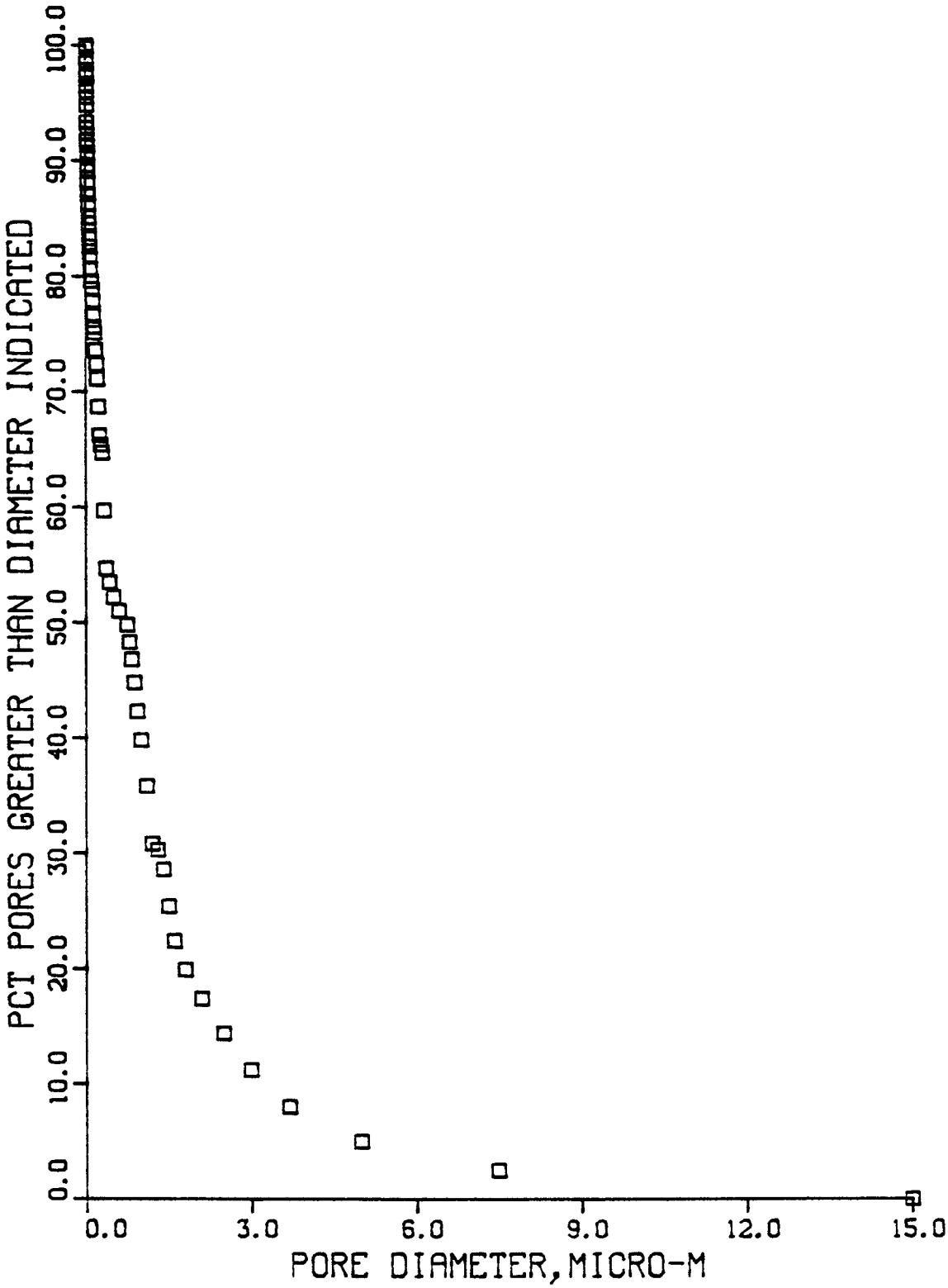
PORE DIAMETER, MICRO-M

K 41319.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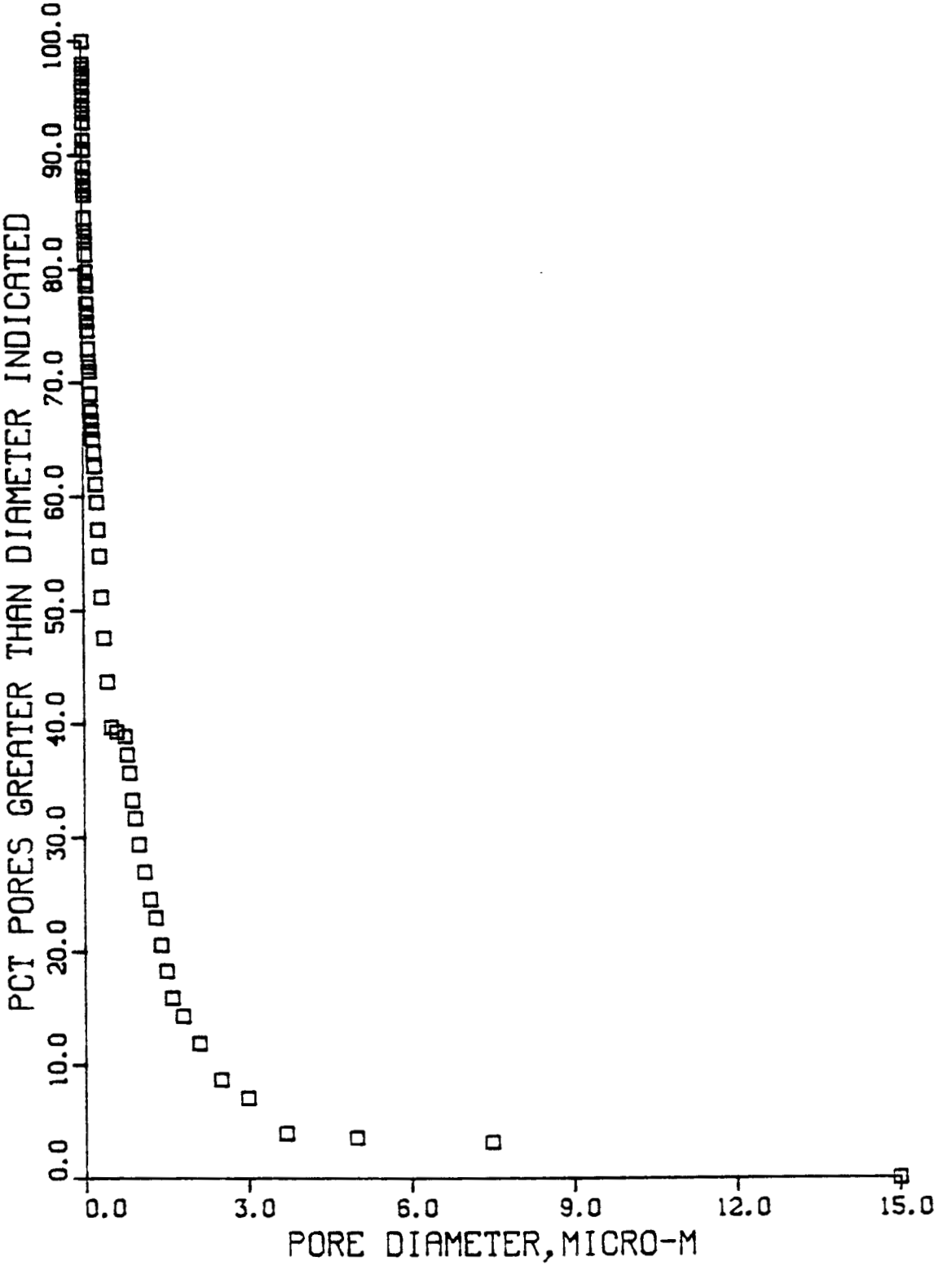
PORE DIAMETER,MICRO-M

K 41300.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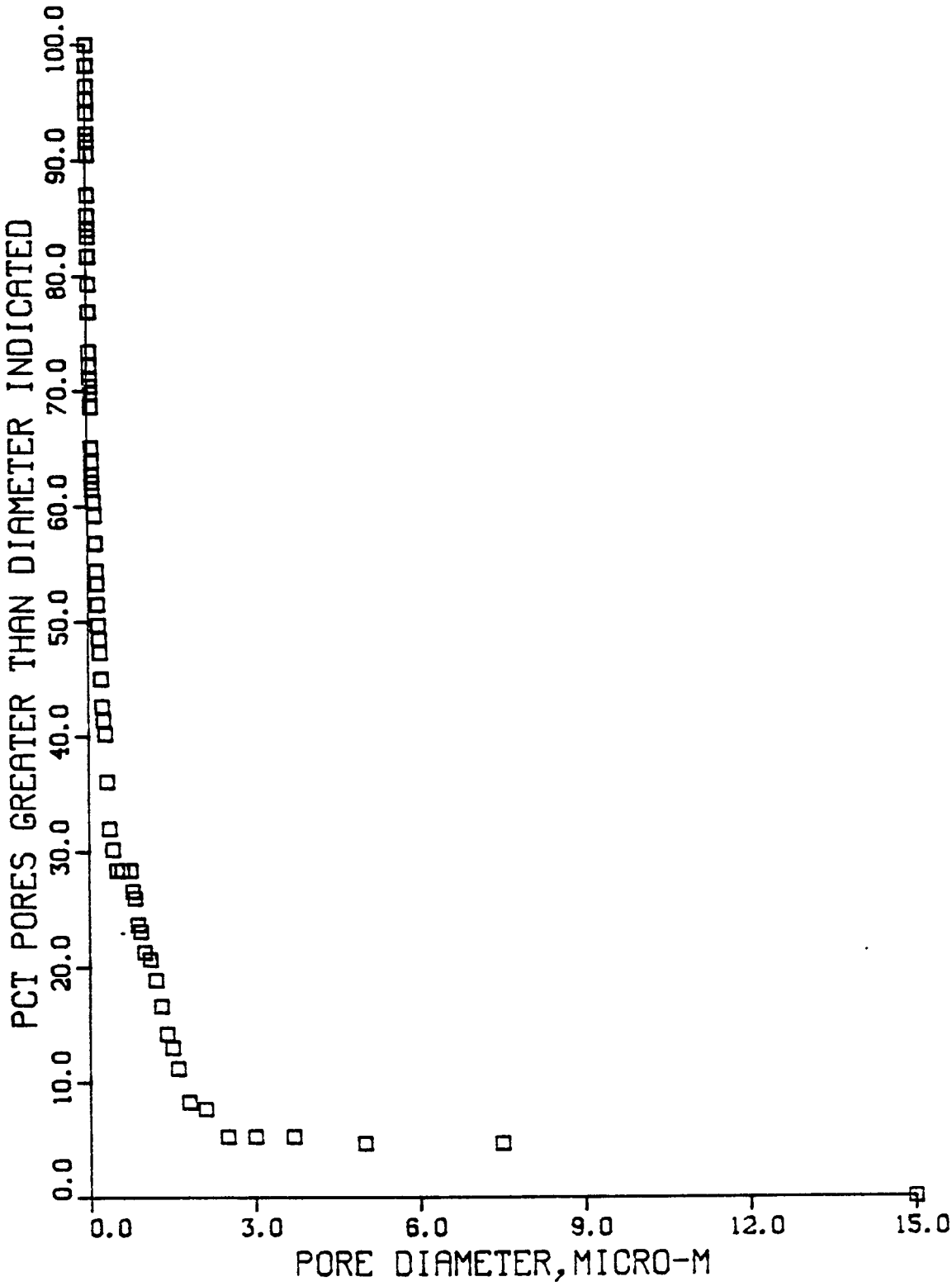
PORE DIAMETER, MICRO-M

K 41260.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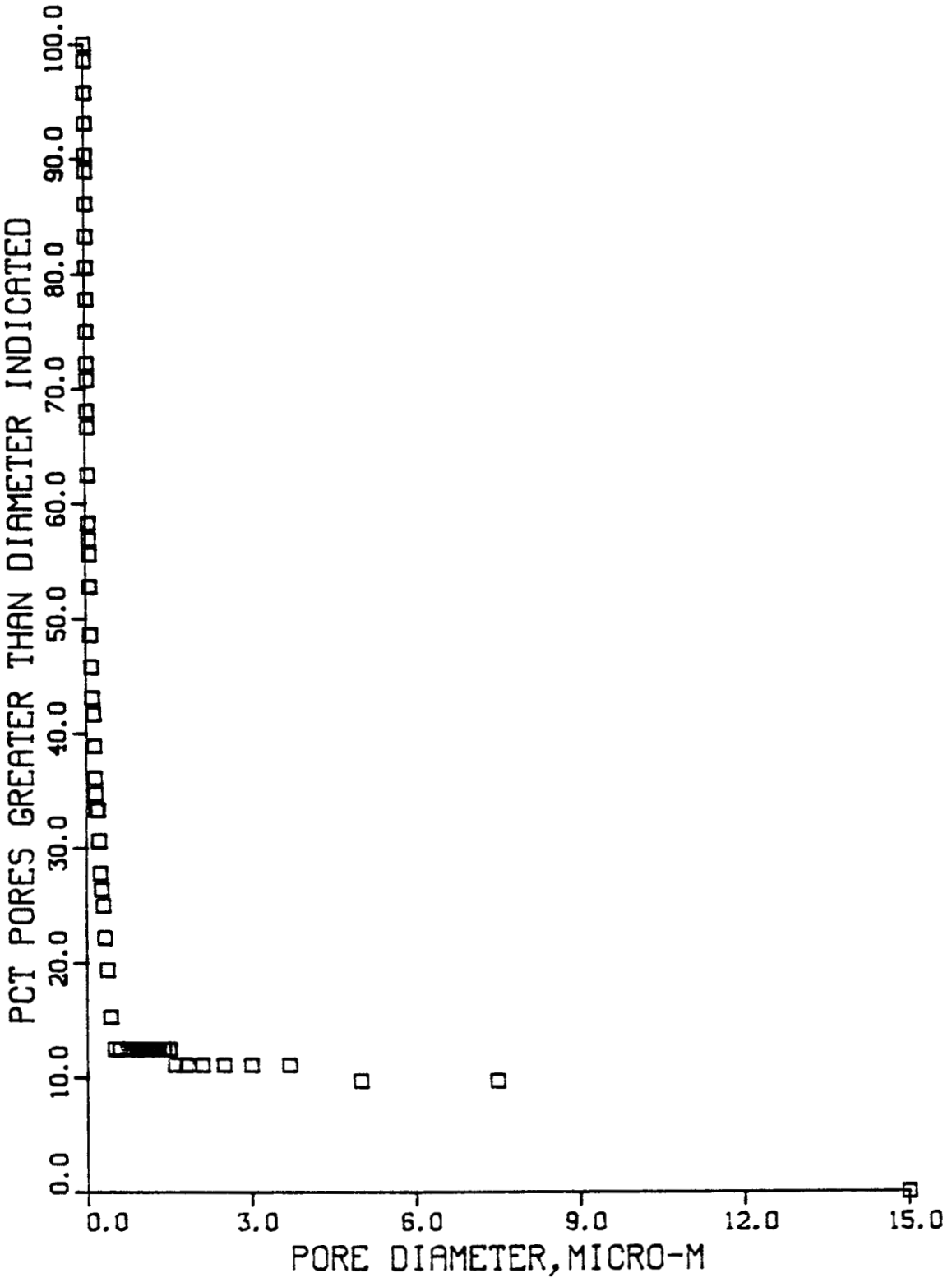
PORE DIAMETER,MICRO-M

K 41241.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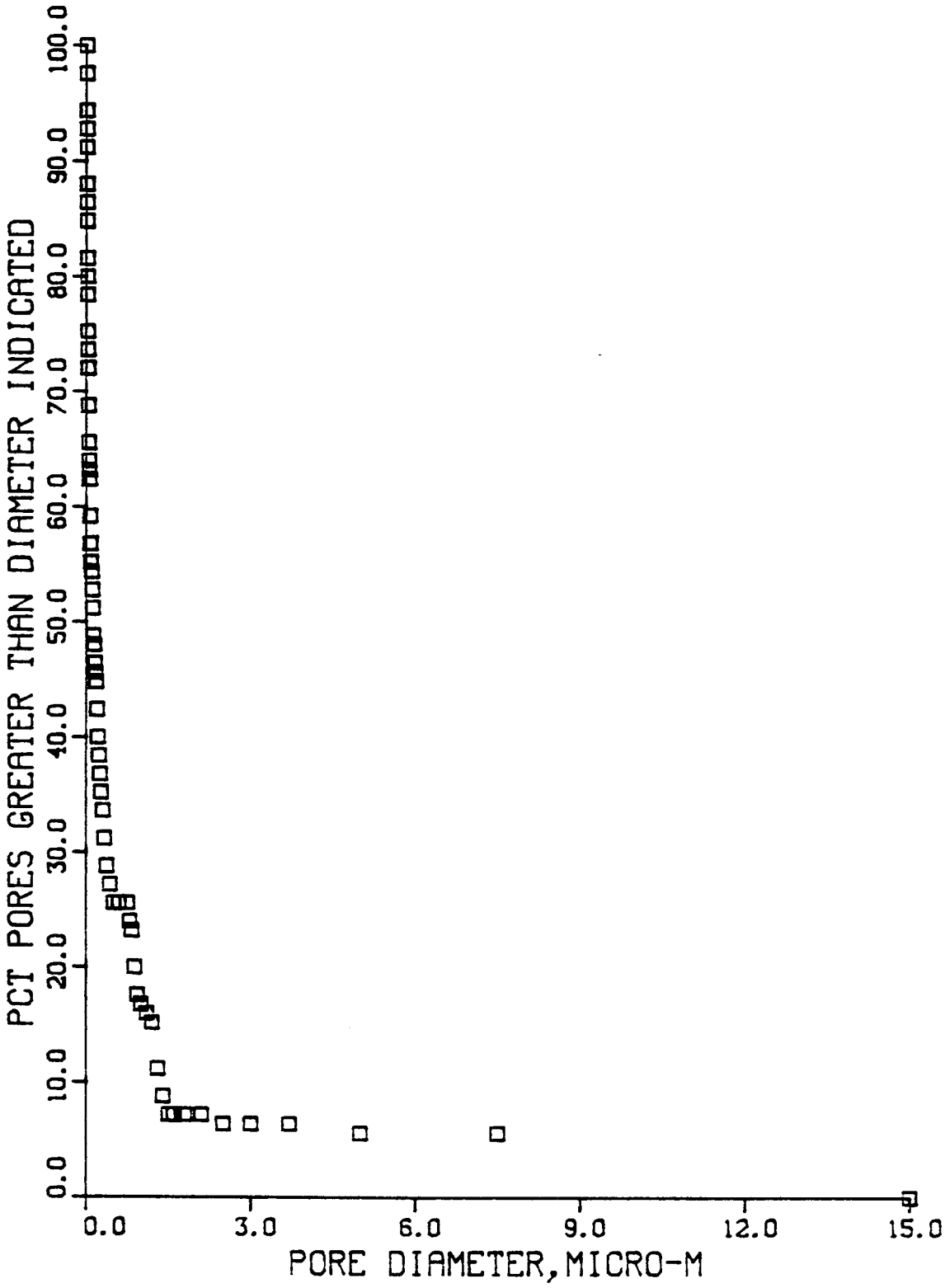
PORE DIAMETER,MICRO-M

K 41221.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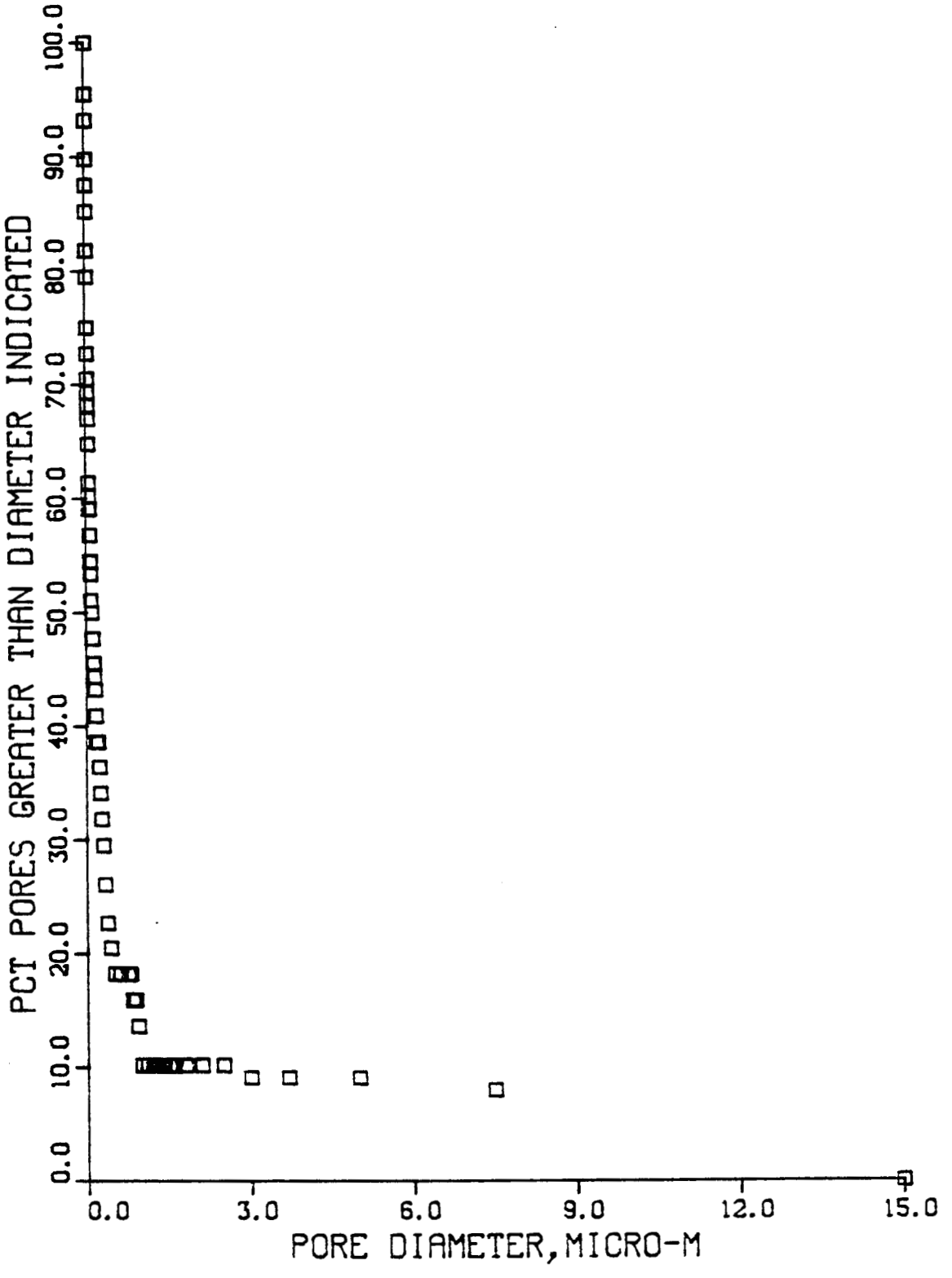
PORE DIAMETER, MICRO-M

K 41201.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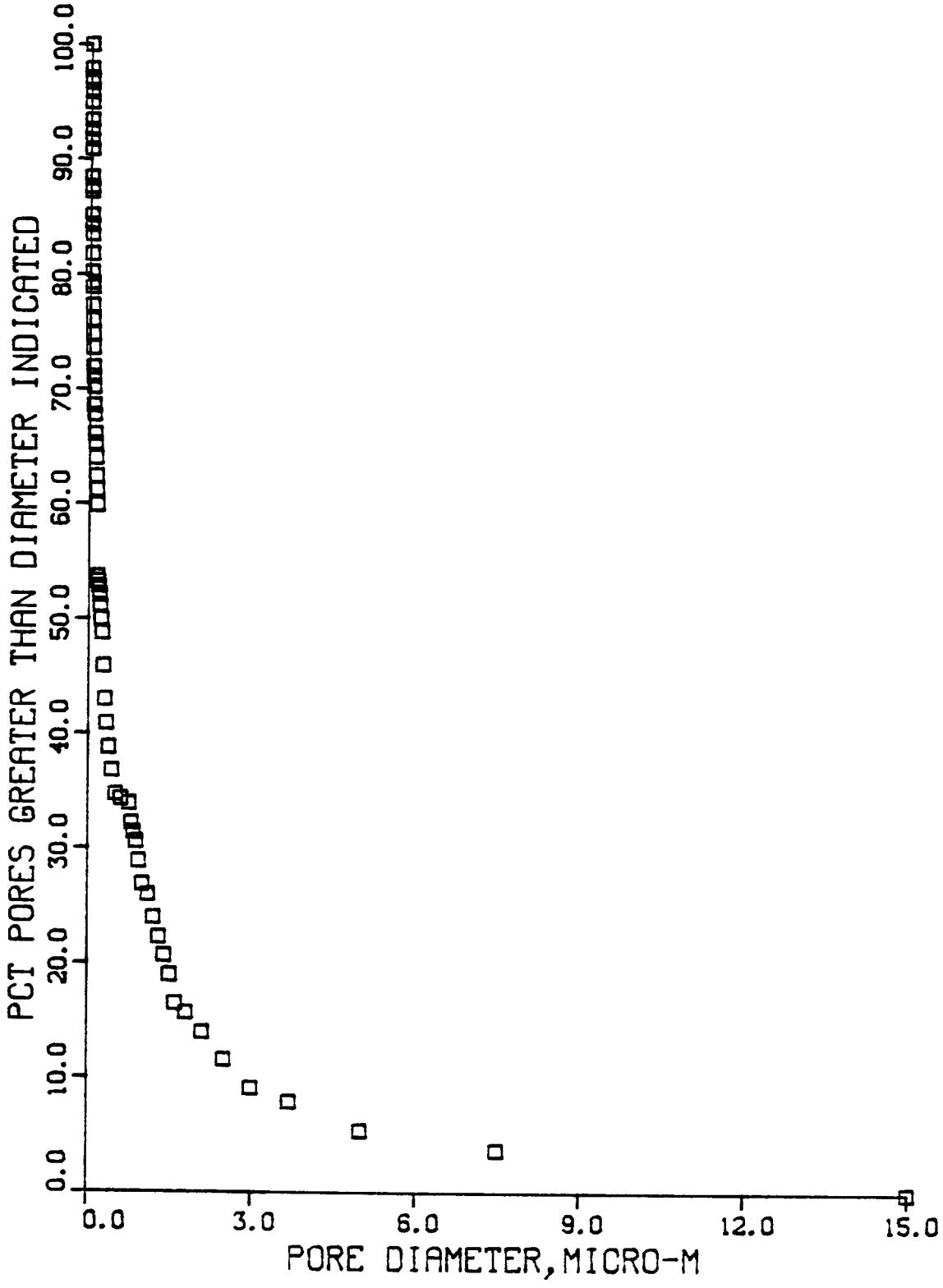
PORE DIAMETER,MICRO-M

K 41183.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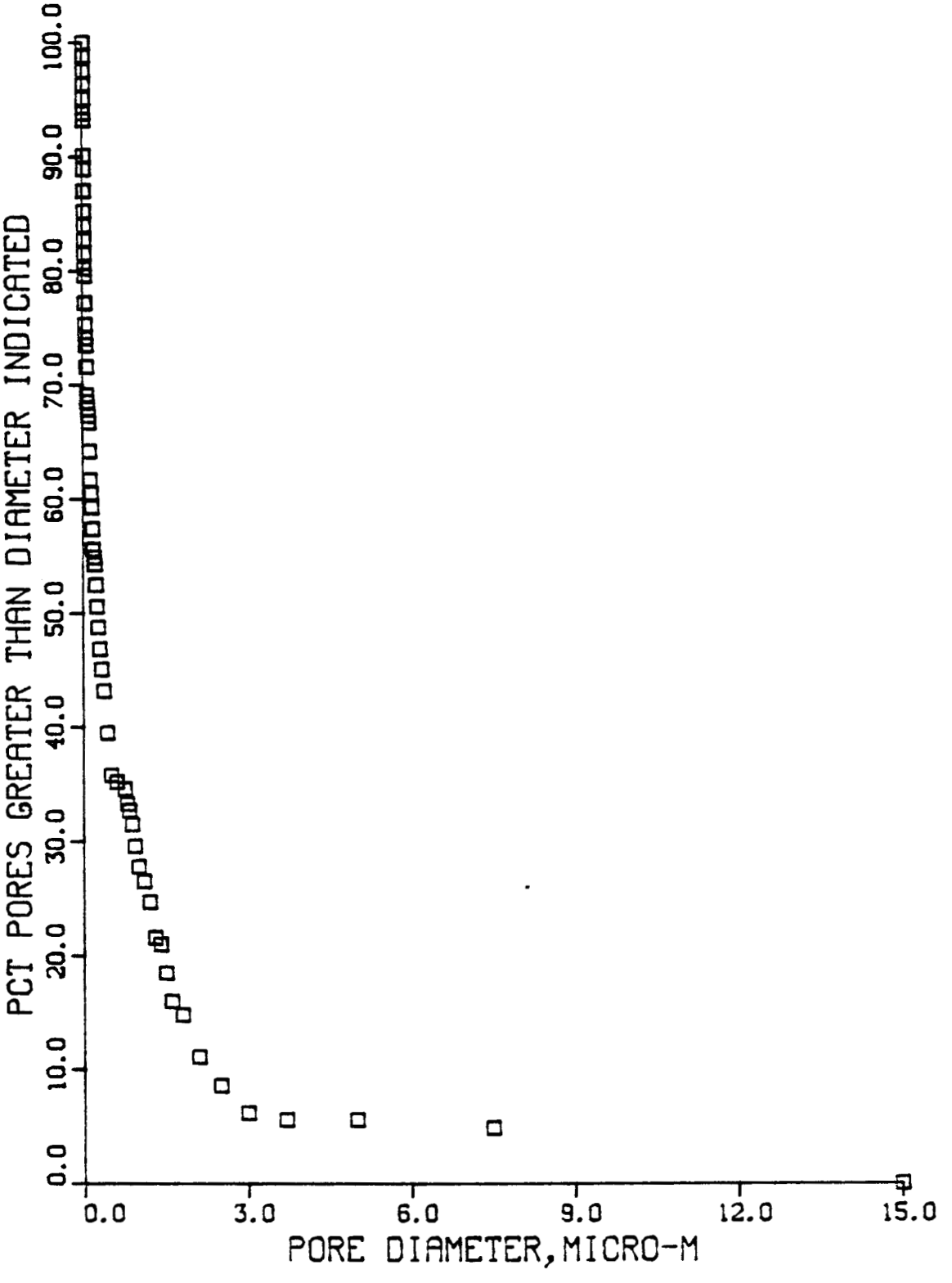
PORE DIAMETER, MICRO-M

K 41163.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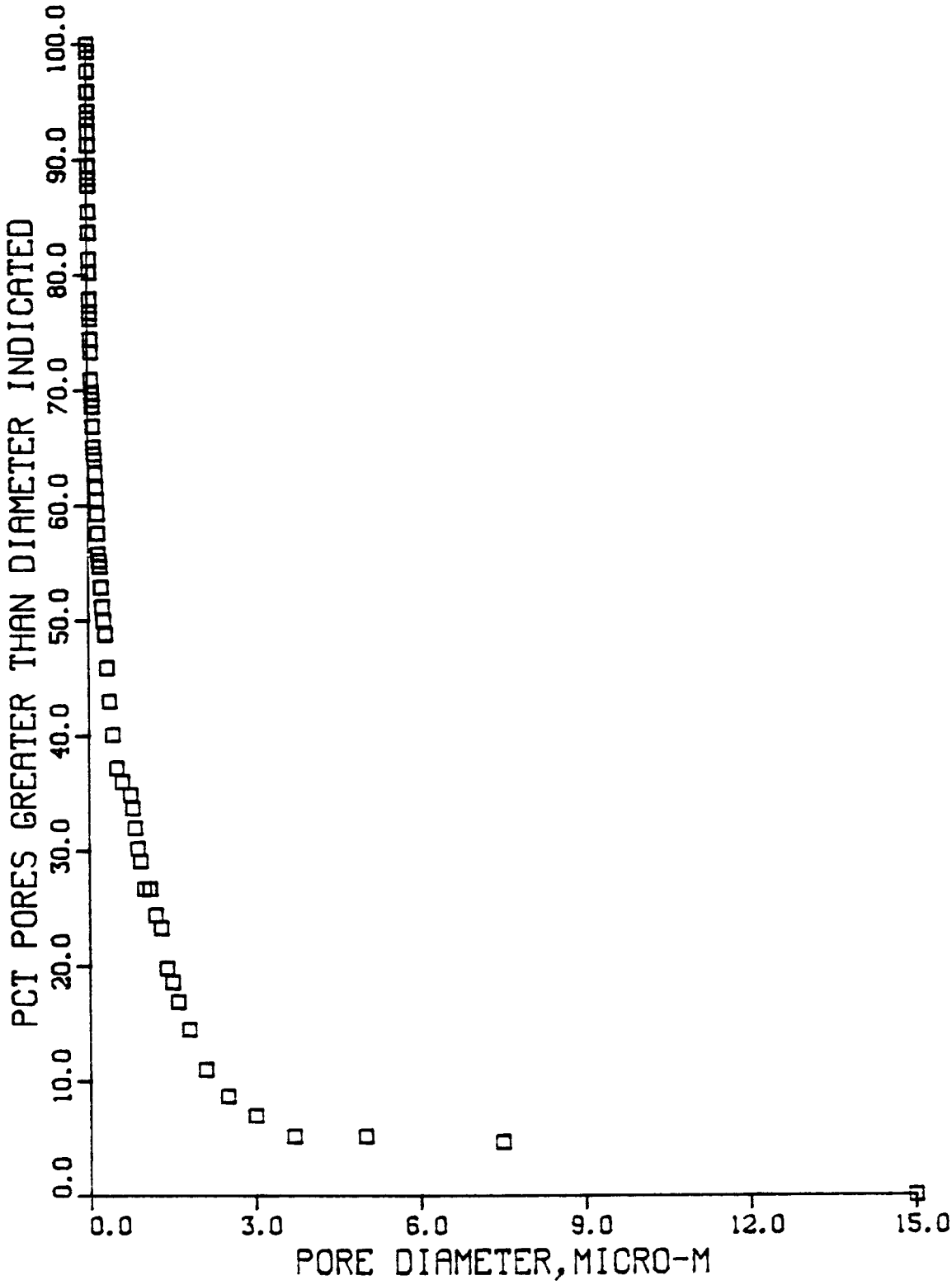
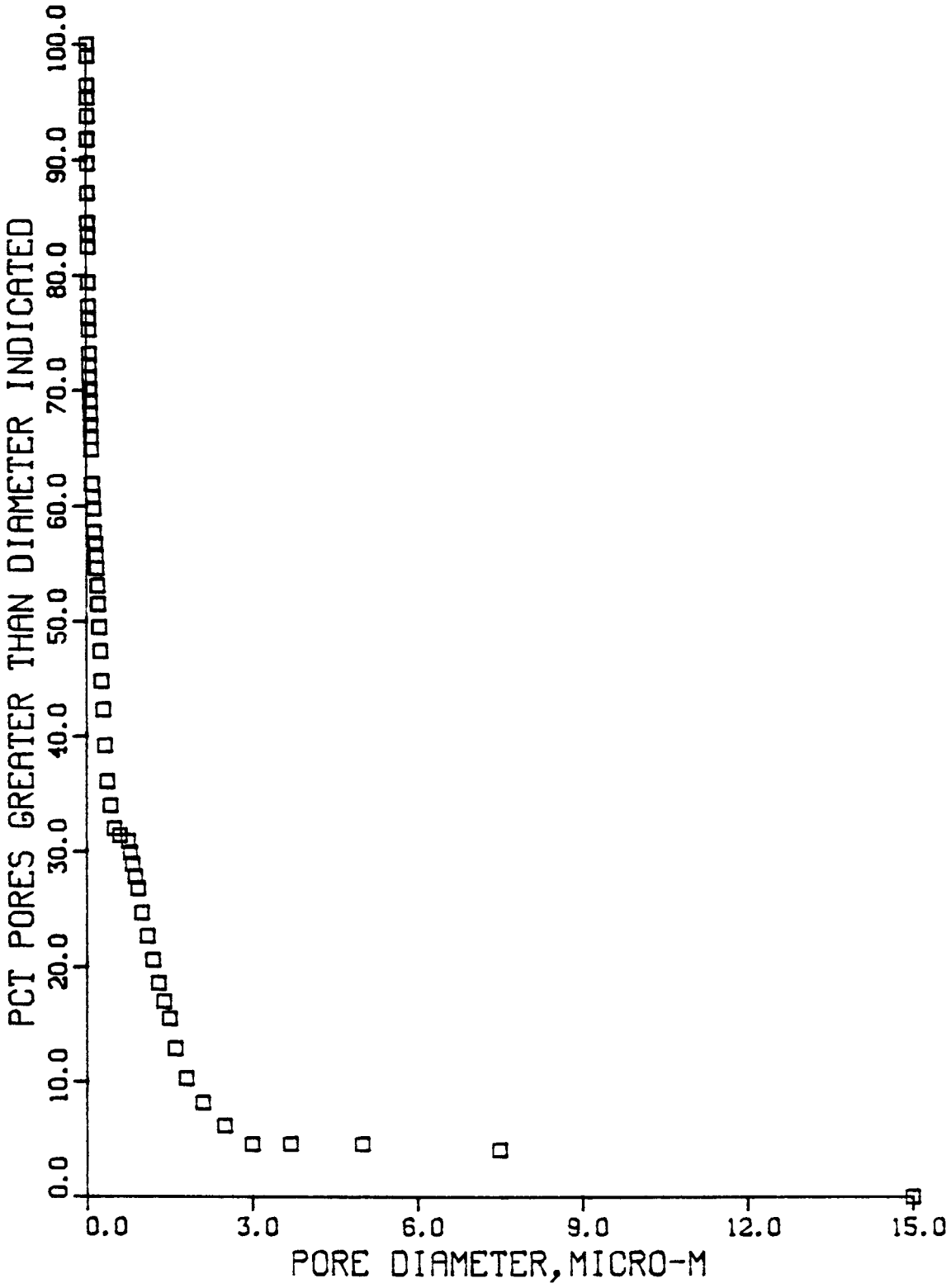
PORE DIAMETER, MICRO-M

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.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40.0
50.0
60.0
70.0
80.0
90.0
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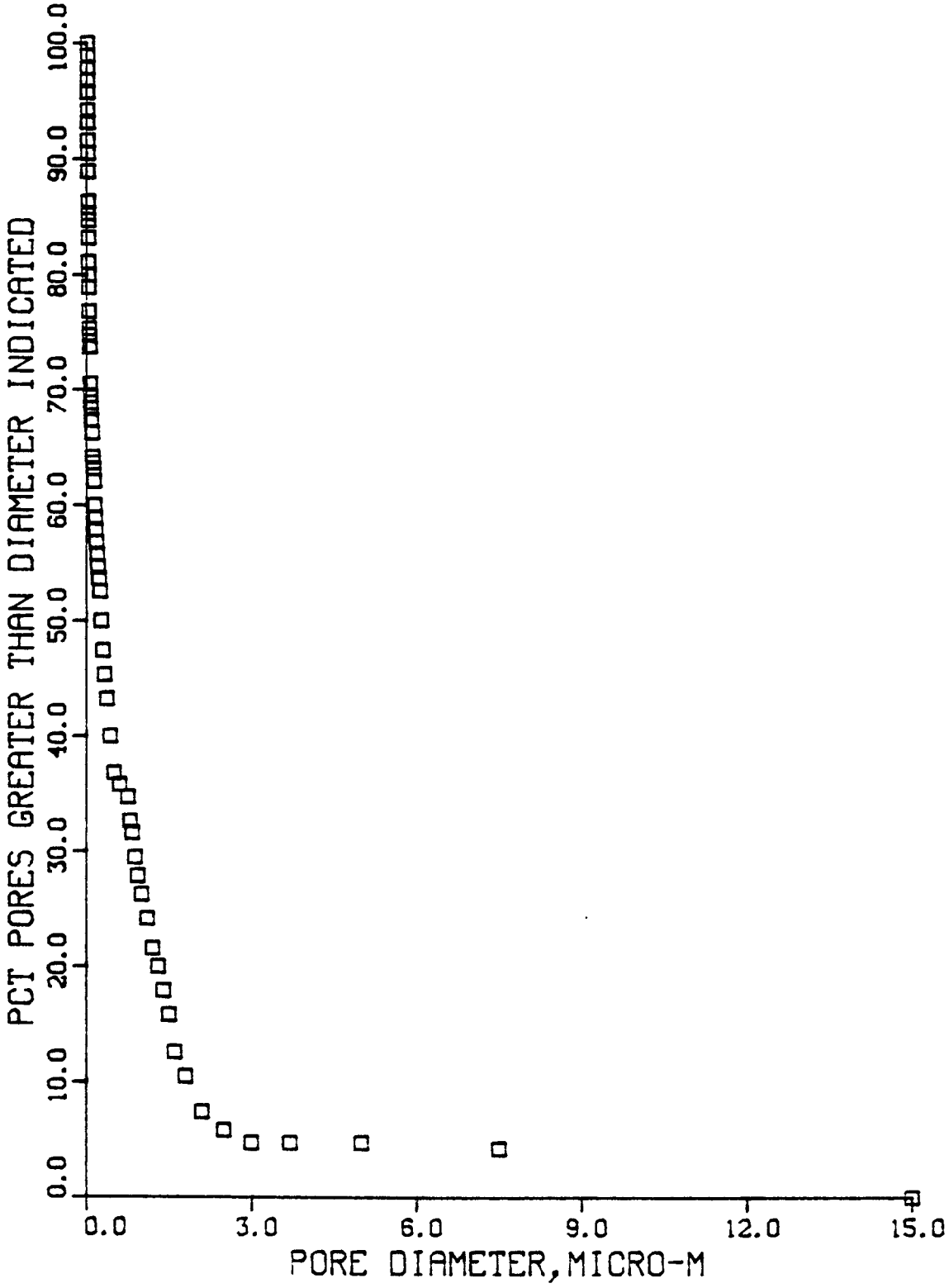
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

K 41096.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60.0
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80.0
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9.0
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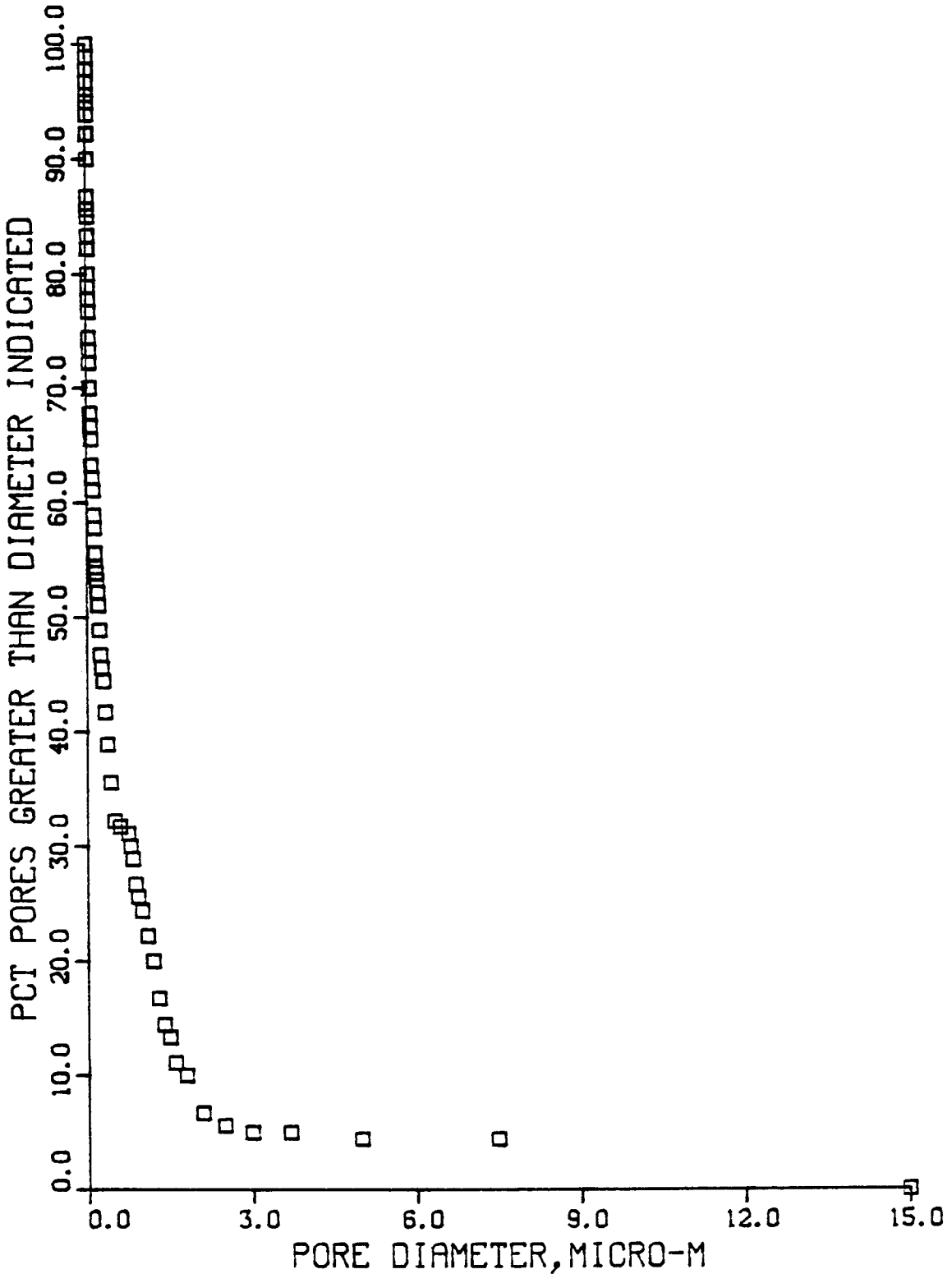
15.0
PORE DIAMETER, MICRO-M

K 41079.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9.0
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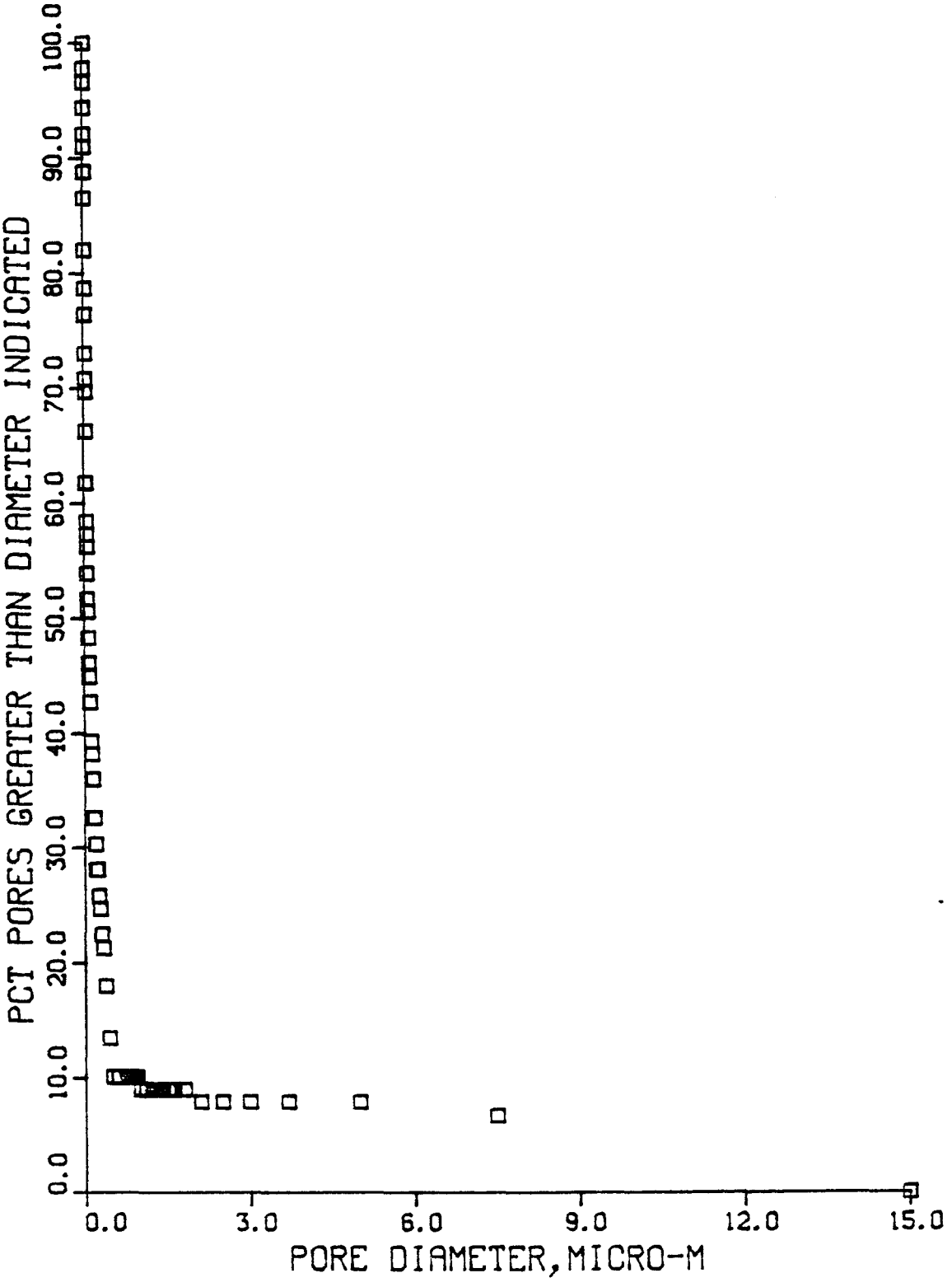
PORE DIAMETER,MICRO-M

K 41059.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80.0
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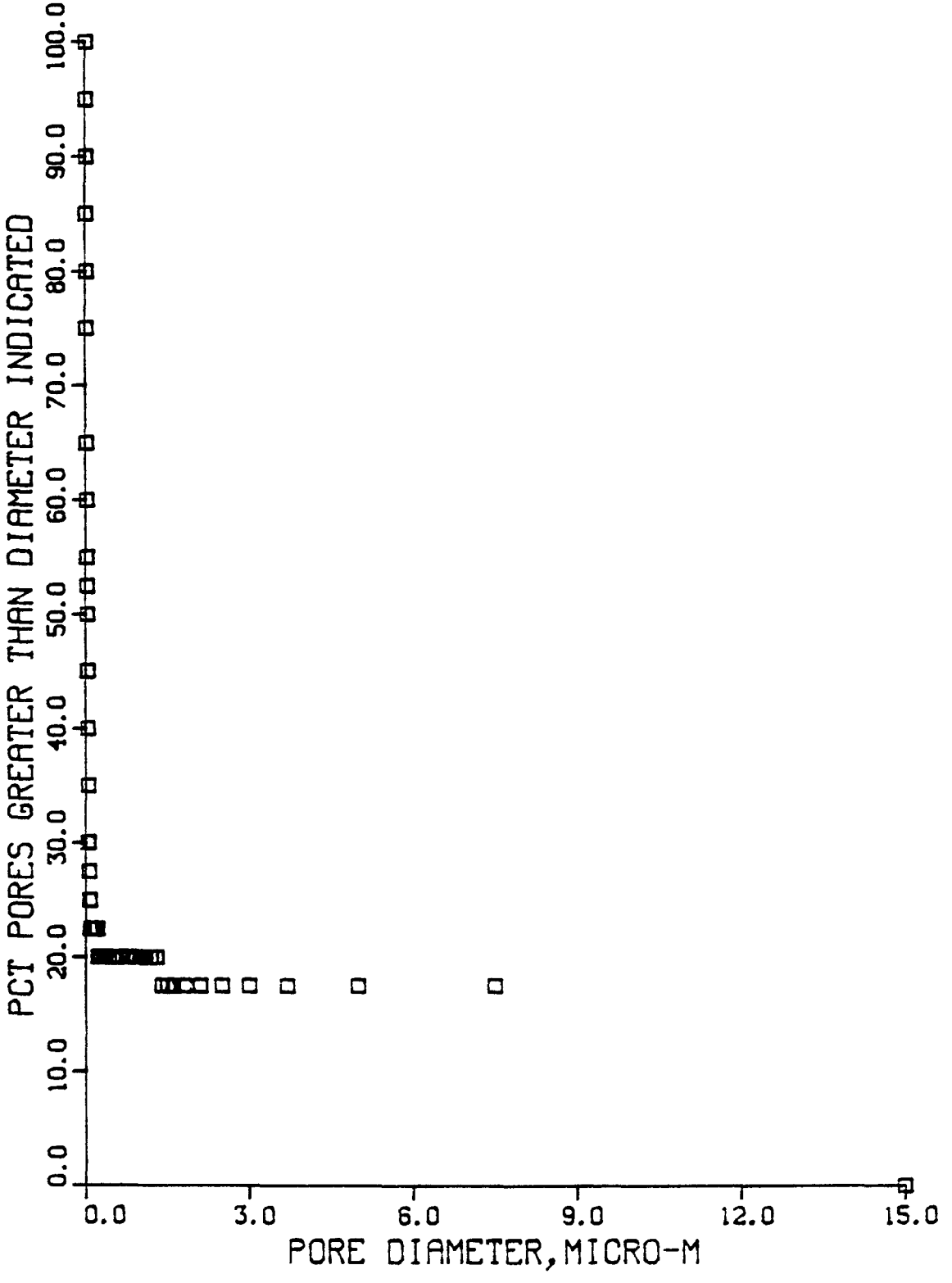
15.0
PORE DIAMETER,MICRO-M

K 41039.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60.0
70.0
80.0
90.0
100.0
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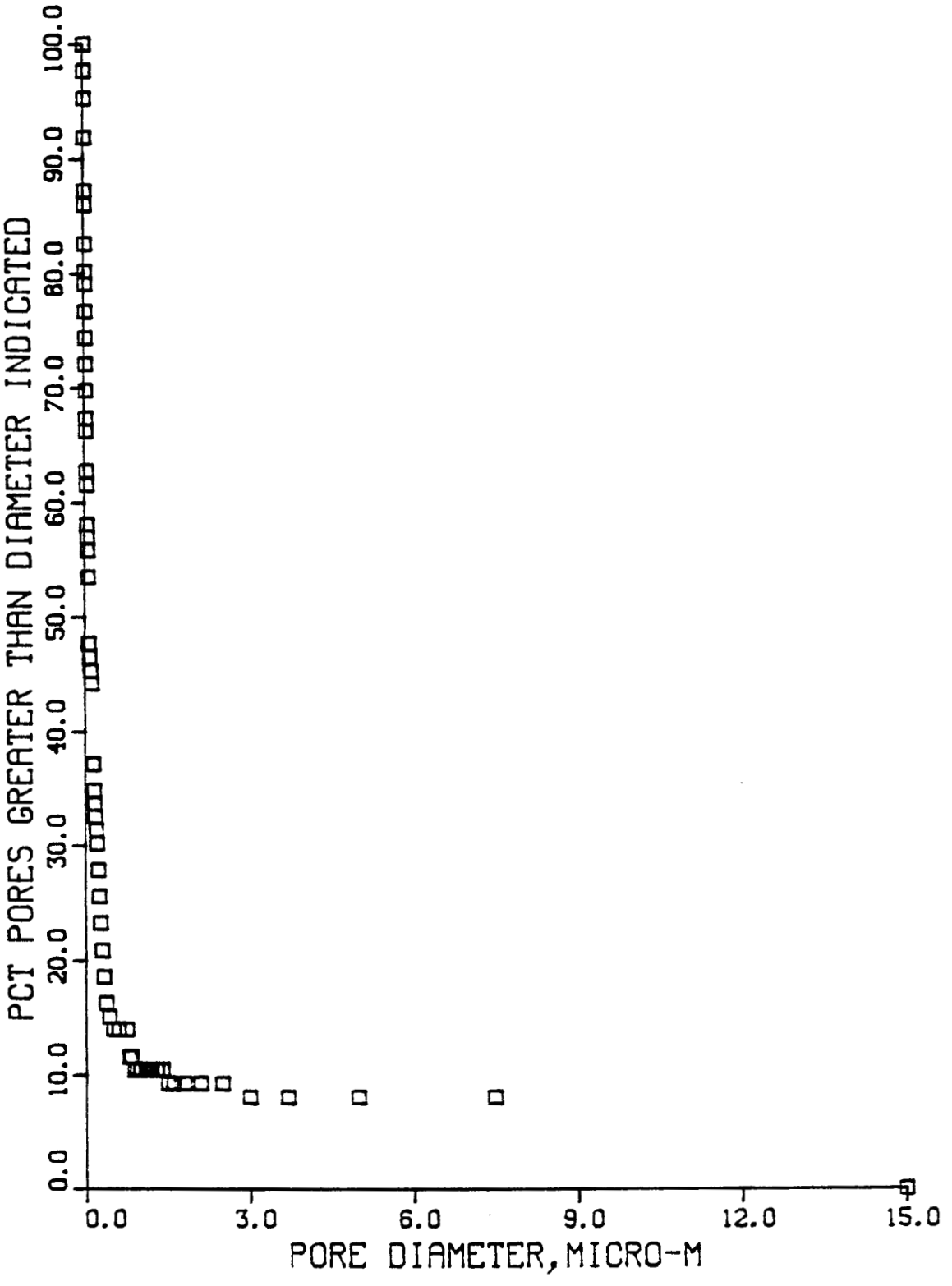
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

K 41009.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60.0
70.0
80.0
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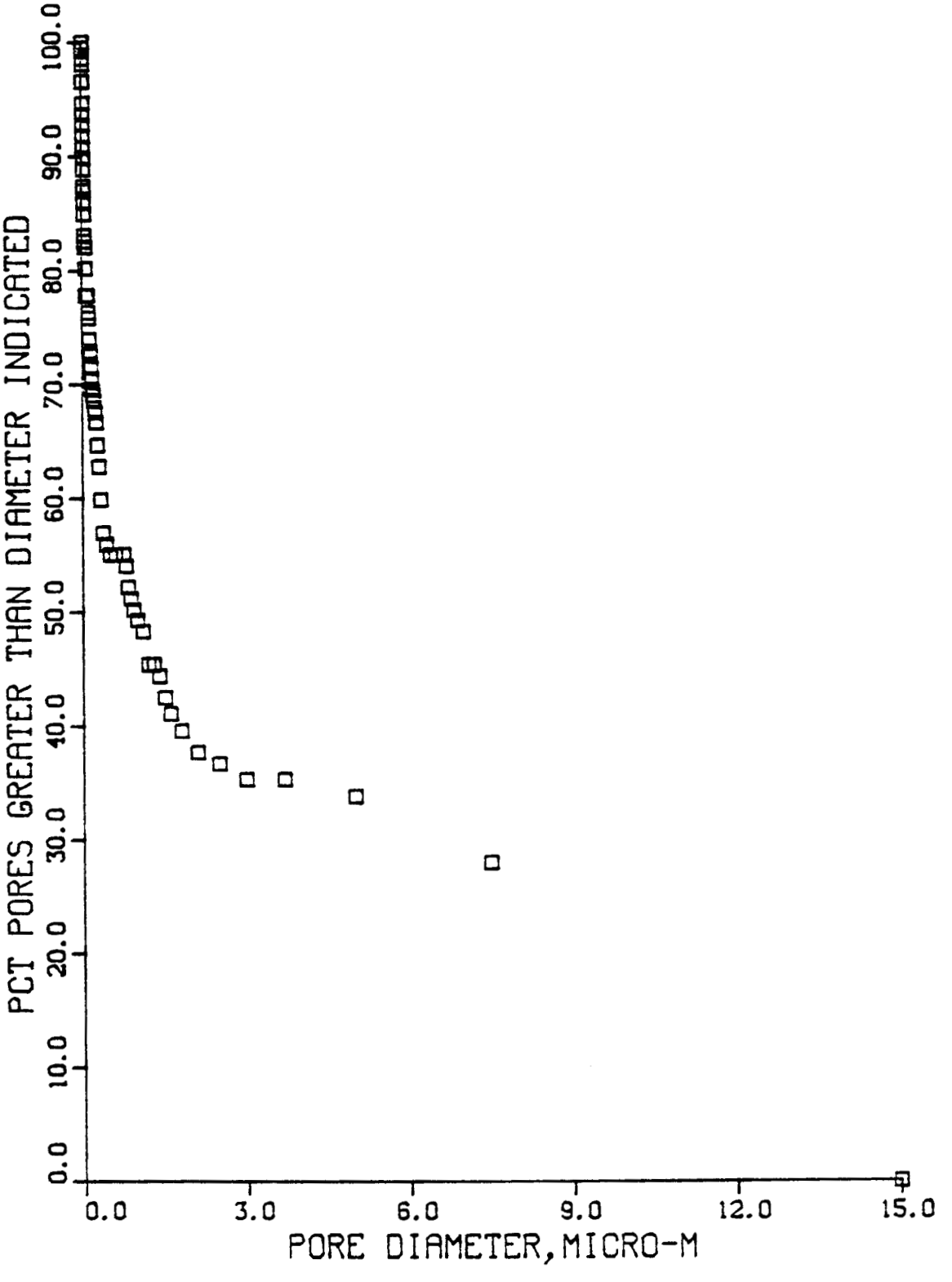
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER, MICRO-M

K 4 989.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40.0
50.0
60.0
70.0
80.0
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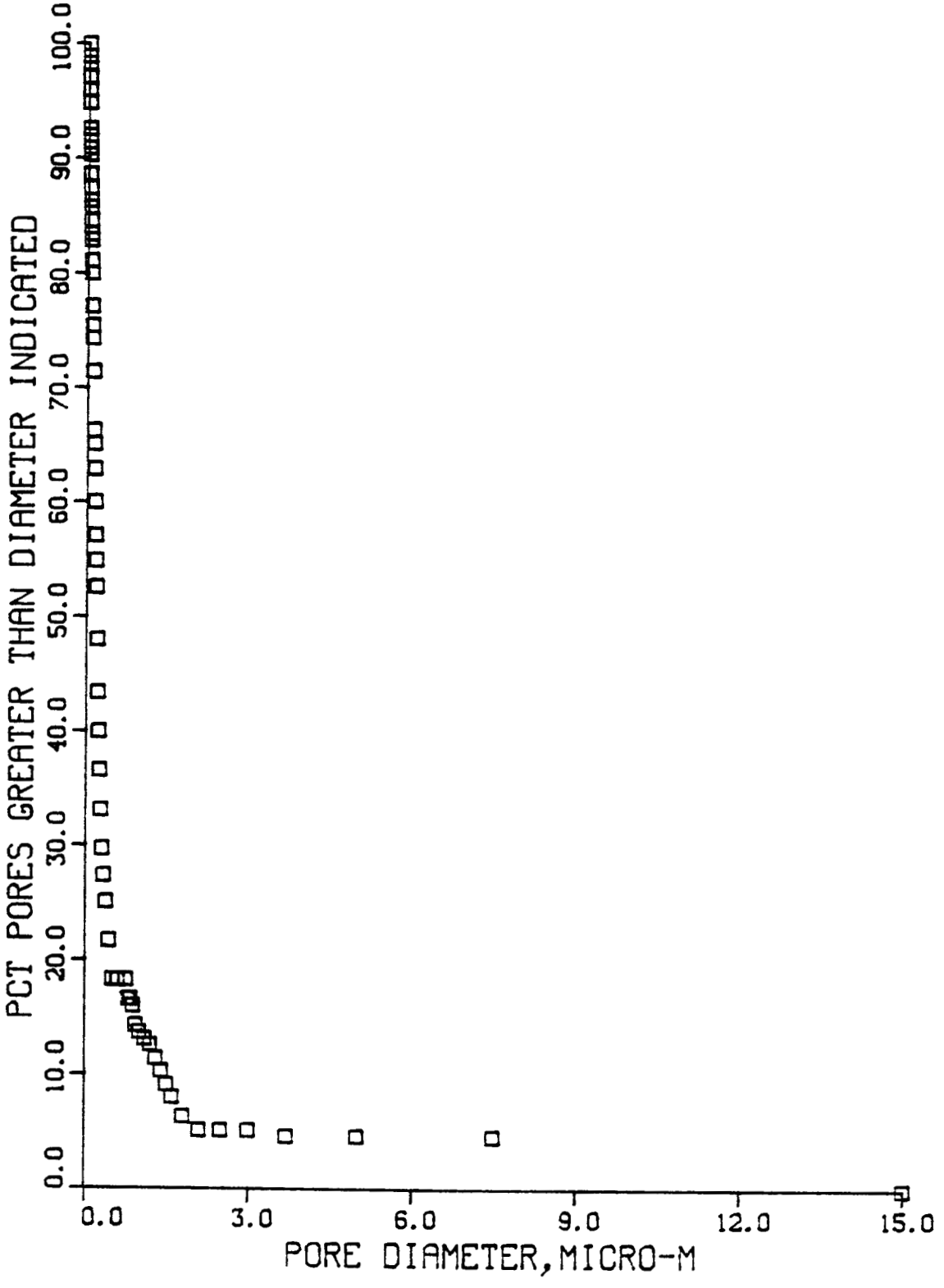
100.0
0.0
3.0
6.0
9.0
12.0
15.0
PORE DIAMETER,MICRO-M

K 4 969.


PCT PORES GREATER THAN DIAMETER INDICATED
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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