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

Well R-109, Washington County, Ohio

By
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June 20, 1979
Date Published

Work Performed Under Contract No. EY-76-C-05-5205

Battelle Columbus Laboratories
Columbus, Ohio

U. S. DEPARTMENT OF ENERGY

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INDIVIDUAL WELL REPORT
FROM THE PROGRAM ON

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DEVONIAN SHALES AS RELATED TO
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BATTELLE
Columbus Laboratories
505 King Avenue
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Date Published - June 20, 1979

PREPARED FOR THE UNITED STATES
DEPARTMENT OF ENERGY

Under Contract No. DE-AC21-76MC05205

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INTRODUCTION AND SUMMARY

Coring of Well R-109 (Washington County, Ohio) was accomplished in August 1976. A total of 25 samples were collected, all for Battelle.

Hydrocarbon gas analyses indicate that higher chain hydrocarbon gases (C_2-C_5) make up a significant portion of total hydrocarbons in the shales, but methane is still the dominant single gas.

Distinct relationships exist between the carbon and hydrocarbon gas contents, showing increase in hydrocarbon gas contents with increasing carbon. Similar relationships between hydrogen and hydrocarbon gas contents exist, though they are not as pronounced. Gas contents appear not to be related to the bulk densities in any quantitative manner, though organic contents (carbon and hydrogen) seem to be related to bulk density values much more clearly.

R-109 shales are virtually impermeable to gases and other fluids, as attempted helium gas permeability measurements indicated extremely small ($<10^{-12}$ Darcy) permeability values.

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:

<u>Task</u>	<u>Descriptive Title</u>
1	Core Sampling
2	Gas Content and Gas Release Kinetics
3	Chemical Characterization of Shale
4	Physical Characterization of Shale
5	Lithology of Shale
6	Data Interpretation and Correlation

ANALYSIS AND DISCUSSION OF THE CHARACTERIZATION DATA

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

Task 1. Core Sampling

The coring of R-109 shales was performed in August 1976. A total of 25 samples was collected, all for Battelle. Total coring was accomplished in four barrels. Pertinent well and field sampling data are presented in Tables 1 and 2, respectively. Figure 1 depicts the on-surface time of R-109 shales.

Task 2. Gas Content and Gas Release Kinetics

"Free" gas analysis results on Well R-109 are tabulated in Table 3. Higher chain hydrocarbons make up a significant portion of the total hydrocarbon gas in these shales, but methane is still the dominant single hydrocarbon gas in the system.

Statistical parameters for the hydrocarbon gas data are given in Table 4. Total hydrocarbon contents show a mean value of 60 percent with upper and lower limits of 70.5 and 49.6 percent, respectively. No discernable relationship is seen between the hydrocarbon gas values and sample depth, illustrated in Figure 2.

Task 3. Chemical Characterization Data

Total carbon, hydrogen, and nitrogen values are reported in Table 5. Carbon values vary between 0.4 and 5.0 percent by weight of shale, whereas the hydrogen values show less scatter from 0.5 to 0.7 percent by weight of shale. In Figures 3 through 5, variation in chemical characterization data with sample depth are plotted. As seen in Figure 3,

carbon contents tend to increase with increasing sample depth. Similar relationships between the hydrogen and depth (Figure 4) is not as distinct. H/C atomic ratios almost remain constant with sample depth.

Figures 6 and 7 relate the carbon and hydrogen contents to natural gas contents, respectively. A general increase in natural gas contents with carbon is apparent, though the data are somewhat scattered in Figure 6. Such a relationship between the hydrogen and natural gas contents is less apparent (Figure 7).

Task 4. Summary of Physical Characterization Data

Among the physical characteristics of R-109 shales, density, porosity (from the density data), and surface area values are tabulated in Table 6. These shales exhibit particularly high bulk densities as reflected in the low porosity values calculated. Surface area values are also somewhat higher than those shales from other locations. Higher density and surface area values would indicate low organic content and high clay mineral contents in these shales. Some of the statistical parameters on density, porosity, and surface area data are given in Table 7. These shales exhibit a mean bulk density value of 2.68 and true density of 2.71, which would translate into average porosity value of 2.3 percent.

Relationships between the bulk density and natural gas, carbon and hydrogen contents are illustrated in Figures 8 through 10. Natural gas contents appear to be independent of bulk density values, though, on an expanded density scale, a somewhat inverse relationship might be noticeable (Figure 8). Such inverse relationship is much more pronounced between the bulk density and carbon and hydrogen contents as evidenced in Figures 9 and 10.

Porosities on all R-109 samples were also determined with the mercury intrusion method. These values are depicted in Table 8.

Five R-109 shale samples were used in the determination of gas permeabilities. No measurable permeabilities were found in the direction perpendicular to the bedding planes in these shales.

Task 5. Lithology of R-109 Shales

X-ray diffraction, SEM/EDAX and the petrographic microscope were employed in the study of the shale lithology. XRD patterns of about half the R-109 shales were obtained. As evidenced in the XRD patterns, these shales seem to be rich in illite. Kaolin minerals and chlorite are also detectable as other clay minerals. Quartz is still the major single mineral phase, but in somewhat lesser quantities than shales from other locations. Carbonate minerals, such as nahcolite, shortite, and calcite have been observed in moderate quantities. Albite is the representative feldspar mineral. Some pyrite is also present. XRD data are presented in Table 9.

Three R-109 shale samples were studied by SEM/EDAX and the petrographic microscope. Of the three samples examined, the high degree of opacity of one sample, due to staining, prevented microscopic identification and quantity estimation of its mineral constituents. All the minerals identified by X-rays were found to be present in the others. Figures 12 through 14 are SEM microphotographs of three R-109 samples.

Task 6. Data Interpretation and Correlation

Effective use of the Automatic Interaction Detection (AID) program was hampered by both the paucity of wirelog data and the small number of samples. The data available were used to evaluate the usefulness of the wirelog information in explaining the observed variability in the laboratory data. The results of these analyses are summarized in Figure 15.

As Figure 15 shows, the twenty samples are sufficient to split twice (three final groups). Each split is shown and the effectiveness of each potential predictor is listed. The results show very good comparison between the wirelog porosity and the laboratory bulk and apparent densities. That this correlation does not hold true for the true density is somewhat surprising. The results also indicate a moderately good correlation between the electrical wirelog data and the hydrocarbon gas contents,

the bulk density/porosity and gas/volume of shale. It is also apparent from these results that the gamma ray is not a good predictor and that the classical correlation with depth is not strong in this well.

TABLE 1. WELL DATA FOR R-109

LOCATION: WASHINGTON COUNTY, OH

ALTITUDE: 816 FEET

COORDINATES: 39.23 (DEGREES.MINUTES) LATITUDE
81.33 (DEGREES.MINUTES) LONGITUDE

CORING BEGAN AT 3490 FEET AND STOPPED AT 3714 FEET. IT TOOK 4 BARRELS TO COMPLETE.

SAMPLES WERE RETURNED TO BATTELLE ON 8/1/76.

THERE WERE 25 SAMPLES COLLECTED FOR BATTELLE AND 0 SAMPLES COLLECTED FOR OTHERS.

RUN INFORMATION FROM WELL R-109

RUN NO. 1 CORING BEGAN AT 3490 FEET AND CORING STOPPED AT 3548 FEET. THE AVERAGE CORING RATE IS 7.09 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 2.05 HOURS

RUN NO. 2 CORING BEGAN AT 3548 FEET AND CORING STOPPED AT 3606 FEET. THE AVERAGE CORING RATE IS 6.86 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 2.00 HOURS

RUN NO. 3 CORING BEGAN AT 3606 FEET AND CORING STOPPED AT 3656 FEET. THE AVERAGE CORING RATE IS 8.20 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 2.30 HOURS

RUN NO. 4 CORING BEGAN AT 3656 FEET AND CORING STOPPED AT 3714 FEET. THE AVERAGE CORING RATE IS 6.29 MINUTES PER FOOT. THE SAMPLES WERE ON THE SURFACE IN 2.08 HOURS

TABLE 2. FIELD SAMPLING DATA FOR WELL R109

SAMPLE ID.	COLOR	ON SURFACE TIME	BARREL NO	SEQ NO.
R109-3494.		.50	0	1
R109-3506.		.75	0	2
R109-3516.		.92	0	3
R109-3526.		1.08	0	4
R109-3536.		1.17	0	5
R109-3545.		1.33	0	6
R109-3555.		1.00	0	7
R109-3564.		1.17	0	8
R109-3575.		1.33	0	9
R109-3585.		1.50	0	10
R109-3593.		1.58	0	11
R109-3605.		1.75	0	12
R109-3606.		1.50	0	13
R109-3606.		1.50	0	14
R109-3616.		1.75	0	15
R109-3620.		1.91	0	16
R109-3634.		2.08	0	17
R109-3644.		2.14	0	18
R109-3644.		2.15	0	19
R109-3665.		1.00	0	20
R109-3675.		1.08	0	21
R109-3685.		1.17	0	22
R109-3695.		1.30	0	23
R109-3705.		1.45	0	24
R109-3711.		1.60	0	25
		MEAN EXPOSURE TIME	1.39	
		STANDARD DEVIATION OF EXPOSURE TIME	.43	

TABLE 3. INITIAL GAS RELEASE DATA: WELL R-109

SAMPLE ID	PRESSURE TORR	FREE	CORE	OPEN	GAS COMPOSITION, VOLUME PERCENT									GAS RELEASED/	
		VOLUME CC	VOLUME CC	POROSIY FCT.	METHANE	ETHANE	PROPANE	BUTANE	PENTANE	TOTAL HYDROC.	NITROGEN	OXYGEN	CARBON DIOXIDE	UNIT VOLUME OF SHALE	SEQ NO.
R109-3494.	860.	508.	942.	1.67	30.81	10.10	7.04	2.26	.52	50.73	47.92	.86	.51	.31	1
R109-3506.	925.	339.	1111.	.74	61.86	11.38	5.63	1.29	.45	80.61	5.81	.38	.48	.30	2
R109-3516.	775.	444.	1006.	.89	61.81	12.82	7.48	2.05	.46	84.62	14.49	.71	.53	.38	3
R109-3526.	740.	392.	1058.	2.52	68.73	12.52	6.59	2.12	.45	90.41	8.56	.54	.48	.33	4
R109-3536.	750.	238.	1212.	.78	32.81	6.56	2.79	.68	.29	43.13	50.30	5.72	.84	.08	5
R109-3545.	750.	307.	1143.	.66	37.65	7.03	3.05	.91	.32	48.96	42.63	3.64	.72	.13	6
R109-3555.	780.	481.	969.	1.04	50.15	13.72	8.71	2.16	.53	75.27	22.49	1.94	.30	.38	7
R109-3564.	740.	260.	1190.	.62	65.28	14.55	7.65	2.16	.46	90.10	8.38	1.53	0.00	.19	8
R109-3575.	875.	321.	1129.	.57	68.40	10.33	3.45	1.11	.33	83.65	15.80	.11	.43	.27	9
R109-3585.	745.	702.	748.	.65	35.54	8.40	3.60	1.70	.47	49.71	45.93	4.11	.71	.46	10
R109-3593.	950.	796.	654.	.57	37.65	6.60	2.51	.82	.39	47.97	46.53	4.47	1.02	.73	11
R109-3605.	750.	543.	907.	.52	62.31	13.54	7.57	2.13	.55	86.10	12.75	.77	.38	.51	12
R109-3606.A	740.	594.	856.	.61	49.47	12.97	7.05	2.52	.50	72.51	24.04	2.85	.62	.49	13
R109-3606.B	930.	1123.	327.	.55	26.16	6.66	4.25	1.19	.30	38.56	55.13	3.78	2.54	1.62	14
R109-3616.	1050.	707.	743.	.65	40.65	6.57	2.95	.85	.23	51.25	45.93	.85	2.01	.67	15
R109-3626.	775.	609.	841.	.94	48.14	8.18	3.08	.86	.20	60.36	38.00	.57	1.07	.45	16
R109-3634.	750.	412.	1038.	.53	53.84	7.37	2.43	.70	.19	64.53	32.97	1.44	1.07	.25	17
R109-3644.A	1120.	870.	580.	1.26	34.19	6.20	2.36	.68	.27	43.70	51.37	3.42	1.51	.97	18
R109-3644.B	825.	131.3	147.	.42	14.27	3.57	1.98	.50	.16	20.48	69.69	7.57	2.25	1.97	19
R109-3665.	2165.	312.	1138.	.79	60.51	13.65	6.98	1.88	.36	83.38	15.85	.17	.57	.65	20
R109-3675.	760.	470.	980.	.88	66.65	14.98	6.55	1.90	.74	90.82	8.83	.11	.25	.44	21
R109-3685.	1300.	236.	1214.	1.00	60.95	10.76	4.86	1.52	.43	78.52	20.25	.71	.53	.26	22
R109-3695.	1745.	630.	820.	.40	47.53	8.49	7.41	1.04	.26	64.73	32.56	1.70	1.02	1.14	23
R109-3705.	730.	490.	960.	1.28	18.11	3.60	1.99	.49	.18	24.37	50.63	7.61	.56	.12	24
R109-3711.	860.	1026.	424.	1.46	19.12	4.60	2.02	.65	.17	26.46	68.06	4.29	1.19	.73	25

TABLE 4. STATISTICAL ANALYSES OF OFF GAS DATA

WELL R109							
	MEAN	STANDARD DEVIATION	VARIANCE	COEFFICIENT OF DEVIATION	95 PCT. CONFIDENCE INTERVAL LOWER LIMIT	UPPER LIMIT	NO OF SAMPLES
METHANE, PERCENT	46.093	16.89	285.24	.37	39.126	53.070	25
ETHANE, PERCENT	9.405	1.52	12.42	.37	7.958	10.960	25
PROPANE, PERCENT	4.799	2.28	5.18	.47	3.860	5.739	25
BUTANE, PERCENT	1.367	.66	.43	.48	1.096	1.638	25
PENTANE, PERCENT	.363	.15	.02	.40	.308	.429	25
TOTAL HYDROCARBONS, PCI	68.003	25.32	641.24	.42	49.555	70.461	25
NITROGEN, PERCENT	33.403	19.47	378.99	.58	25.167	41.439	25
OXYGEN, PERCENT	2.394	2.26	5.09	.94	1.462	3.326	25
CARBON DIOXIDE, PERCENT	.864	.63	.40	.73	.604	1.123	25
GAS VOLUME/SHALE VOLUME	.553	.46	.21	.83	.0900	.742	25

5 0 0

TABLE 5. CHEMICAL CHARACTERIZATION DATA, 3/78

SAMPLE ID	CARBON	TOTAL, PERCENT		LOW TEMPERATURE ASH, %	CARD	SEQ
		HYDROGEN	NITROGEN	200 C	CODE	NO.
P109-3494.	.4	.5	.1		5	1
P109-3506.	1.5	.5	.1		5	2
P109-3516.	1.6	.6	.1		5	3
P109-3526.	3.2	.7	.1		5	4
P109-3536.	2.2	.6	.1		5	5
P109-3545.	1.3	.6	.1		5	6
P109-3555.	1.3	.6	.1		5	7
P109-3585.	2.2	.6	.1		5	10
P109-3593.	2.8	.6	.1		5	11
P109-3605.	3.1	.7	.1		5	12
P109-3606.A	5.0	.8	.1	3.90	5	13
P109-3606.9	3.9	.7	.1		5	14
P109-3626.	.9	.6	.1		5	16
P109-3634.	2.3	.6	.1		5	17
P109-3665.	2.4	.5	.1		5	20
P109-3675.	1.8	.6	.1		5	21
P109-3685.	1.7	.5	.1		5	22
P109-3695.	3.5	.7	.2		5	23
P109-3705.	.5	.5	.2		5	24
P109-3711.	.5	.5	.1		5	25

TABLE 6. SUMMARY OF PHYSICAL CHARACTERIZATION DATA FOR WELL R-109

	BULK DENSITY G/CC	OPEN POROSITY PCT	CLOSED POROSITY PCT	TOTAL POROSITY PCT	SURFACE AREA M ² /G	SEQ
R109-3494.	2.747	1.669	.374	2.043	3.800	1
R109-3506.	2.697	.736	0.000	.736	2.380	2
R109-3516.	2.692	.894	1.082	1.976	3.870	3
R109-3526.	2.611	2.524	3.807	6.331	4.300	4
R109-3536.	2.750	.775	2.094	2.869	3.050	5
R109-3545.	2.746	.657	6.836	7.493	3.250	6
R109-3555.	2.698	1.035	.627	1.662	3.150	7
R109-3564.	2.655	.623	5.039	5.662	3.500	8
R109-3575.	2.705	.570	0.000	.570	3.320	9
R109-3585.	2.651	.650	1.005	1.656	3.700	10
R109-3593.	2.638	.567	3.121	3.688	4.310	11
R109-3605.	2.593	.519	.024	.543	4.000	12
R109-3606.A	2.550	.609	0.000	.609	3.520	13
R109-3606.B	2.606	.550	1.495	2.045	4.540	14
R109-3616.	2.634	.649	1.254	1.903	4.140	15
R109-3626.	2.743	.937	2.731	3.668	3.210	16
R109-3634.	2.699	.527	0.000	.527	3.390	17
R109-3644.A	2.659	1.260	.371	1.631	3.320	18
R109-3644.B	2.671	.423	1.025	1.448	3.480	19
R109-3665.	2.722	.790	.745	1.536	3.090	20
R109-3675.	2.694	.876	0.000	.876	4.760	21
R109-3685.	2.754	1.001	0.000	1.001	3.470	22
R109-3695.	2.583	.403	4.807	4.409	3.450	23
R109-3705.	2.703	1.283	0.000	1.283	2.500	24
R109-3711.	2.747	1.456	0.000	1.456	4.540	25

TABLE 7. STATISTICAL ANALYSES OF PHYSICAL CHARACTERIZATION DATA

WELL R-109

	MEAN	STANDARD DEVIATION	VARIANCE	COEFFICIENT OF DEVIATION	95 PCT. CONFIDENCE INTERVAL		NO OF SAMPLES
					LOWER LIMIT	UPPER LIMIT	
BULK DENSITY, G/CC	2.678	.06	.00	.02	2.654	2.702	25
APPARENT DENSITY, G/CC	2.702	.06	.00	.02	2.676	2.728	25
TRUE DENSITY, G/CC	2.711	.09	.01	.03	2.674	2.748	25
OPEN POROSITY, PCT	.879	.47	.22	.54	.685	1.074	25
CLOSED POROSITY, PCT	1.425	1.05	3.41	1.29	.664	2.187	25
TOTAL POROSITY, PCT	2.305	1.89	3.59	.82	1.523	3.086	25
WEIGHT LOSS INITIAL, G/KG	7.824	1.90	3.63	.24	7.038	8.610	25
WEIGHT LOSS FINAL, G/KG	.021	1.28	1.63	59.66	0.000	.548	25
TOTAL WEIGHT LOSS, G/KG	7.845	1.37	1.86	.17	7.282	8.409	25

TABLE 8. MERCURY INTRUSION POROSIMETRY RESULTS
FOR WELL R-109

SEQUENCE NO.	SAMPLE I.D.	POROSITY, Vol. %
1	R-109-3494	5.04
2	R-109-3506	5.04
3	R-109-3516	4.51
4	R-109-3526	4.51
5	R-109-3536	5.30
6	R-109-3545	5.04
7	R-109-3555	5.30
8	R-109-3564	6.10
9	R-109-3575	4.24
10	R-109-3585	3.71
11	R-109-3593	4.24
12	R-109-3605	2.92
13	R-109-3606A	4.51
14	R-109-3606B	2.92
15	R-109-3616	5.30
16	R-109-3626	5.57
17	R-109-3634	5.63
18	R-109-3644A	3.98
19	R-109-3644	6.10
20	R-109-3665	3.98
21	R-109-3675	6.10
22	R-109-3685	4.51
23	R-109-3698	5.04
24	R-109-3705	5.30
25	R-109-3711	5.04

TABLE 9. XRD DATA ON WELL R-109

Sample No.	Quartz	Illite	Kaolin	Pyrite	Nahcolite	Shortite	Siderite	Calcite	Mica	Others
R-109-3494	M	M	m	-	m	M	m	m	-	Chlorite, Albite
R-109-3564	M	m	m	d	d	m	m	m	-	-
R-109-3575	M	m	d	m	m	m	d	m	-	-
R-109-3585	M	m	d	m	m	m	d	m	-	-
R-109-3616	M	m	m	m	m	m	d	m	-	-
R-109-3626	M	m	m	m	m	m	d	m	-	-
R-109-3634	M	-	m	m	m	m	d	m	-	-
R-109-3644A	M	M	M	M	M	M	d	d	-	-
R-109-3644B	M	-	m	m	m	M	m	m	-	-
R-109-3545	M	m	m	d	d	m	-	m	-	-
R-109-3675	M	-	m	m	m	m	m	-	d	Phlogopite

15

LEGEND

M - Major

m - Minor

d - Detectable

D - Minor - Detectable

FIGURE 1. ON-SURFACE TIME VERSUS DEPTH FOR WELL R-109

FIGURE 2. GAS CONTENT AS A FUNCTION OF SAMPLE DEPTH FOR WELL R-109

FIGURE 3. CARBON CONTENT AS A FUNCTION OF SAMPLE DEPTH FOR WELL R-109

FIGURE 4. HYDROGEN CONTENT AS A FUNCTION OF SAMPLE DEPTH FOR WELL R-109

FIGURE 5. H/C ATOMIC RATIO AS A FUNCTION OF
SAMPLE DEPTH FOR WELL R-109

FIGURE 6. GAS CONTENT AS A FUNCTION OF CARBON CONTENT FOR WELL R-109

FIGURE 7. GAS CONTENT AS A FUNCTION OF
HYDROGEN CONTENT FOR WELL R-109

FIGURE 8. GAS CONTENT AS A FUNCTION OF BULK DENSITY FOR WELL R-109

FIGURE 9. CARBON CONTENT AS A FUNCTION OF BULK DENSITY FOR WELL R-109

FIGURE 10. HYDROGEN CONTENT AS A FUNCTION OF BULK DENSITY FOR WELL R-109

FIGURE 11. GAS CONTENT AS A FUNCTION OF
POROSITY FOR WELL R-109

700X

FIGURE 12. SEM MICROGRAPH OF R-109-3536

700X

FIGURE 13. SEM MICROGRAPH OF R-109-3606

670X

FIGURE 14. SEM MICROGRAPH OF R-109-3665

LABORATORY PHYSICAL DATA	WIRELOG DATA						WIRELOG DATA							
	DEPTH	BULK DENSITY	POROSITY	GAMMA RAY	RESISTIVITY	CONDUCTIVITY	DEPTH	BULK DENSITY	POROSITY	GAMMA RAY	RESISTIVITY	CONDUCTIVITY		
Hydrocarbon Gas N=20 M=36.6	4	8	3	1	36	36	N=15 M=43.3 → N= 5 M=16.6	6	24	24	11	22	15	N=9 M=49.8 N=6 M=33.7
Gas/Vol Shale N=20 M=16.7	21	40	40	11	22	25	N= 6 M=30.7 N=14 M=10.7 →	19	31	1	11	11	11	N=5 M=16.2 N=9 M= 7.7
Av. Bulk Density N=20 M=40.6	10	67	67	32	47	39	N=14 M=51.0 → N= 6 M=16.3	10	23	3	18	10	10	N=6 M=57.3 N=8 M=46.2
Av. Apparent Density N=20 M=39.0	12	75	75	38	53	46	N=14 M=49.6 → N= 6 M=14.3	5	21	7	13	13	16	N=6 M=54.3 N=8 M=46.0
Av. True Density N=20 M=25.7	26	19	24	21	34	25	N= 9 M=34.7 N=11 M=18.4 →	5	6	20	0	16	4	N=6 M=22.2 N=5 M=14.0
Open Porosity N=20 M=15.4	23	29	26	33	26	33	N= 7 M=29.6 N=13 M= 9.3 →	12	68	63	9	34	35	N=7 M=13.7 N=6 M= 4.2
Total Porosity N=20 M=16.1	20	20	12	8	13	9	N= 6 M=27.5 N=14 M=11.3 →	3	15	25	2	3	3	N=7 M=16.7 N=7 M= 5.9

FIGURE 15. COMPARISON OF VARIABILITY REDUCTION OF LAB DATA BY WIRELOG DATA UTILIZING A.I.D. (N=GROUP SIZE, M=GROUP MEAN)

APPENDIX A

MERCURY INTRUSION POROSITY DATA FOR WELL R-109

POROSITY DATA FOR SAMPLE R109-3494.

SEQUENCE NUMBER 1
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	.0187	.0
2.	29.392	7.500	.0020	.0167	10.8
3.	44.088	5.000	.0023	.0164	12.5
4.	58.784	3.700	.0030	.0157	15.9
5.	73.480	3.000	.0032	.0155	17.0
6.	88.176	2.500	.0041	.0146	22.2
7.	102.872	2.100	.0041	.0146	22.2
8.	117.568	1.800	.0048	.0139	25.6
9.	132.264	1.600	.0048	.0139	25.6
10.	146.960	1.500	.0052	.0135	27.8
11.	161.656	1.400	.0053	.0134	28.4
12.	176.352	1.300	.0063	.0124	33.5
13.	191.048	1.200	.0063	.0124	33.5
14.	205.744	1.100	.0063	.0124	33.5
15.	220.440	1.000	.0064	.0123	34.1
16.	235.136	.930	.0064	.0123	34.1
17.	249.832	.880	.0073	.0114	39.2
18.	264.528	.830	.0073	.0114	39.2
19.	279.224	.790	.0073	.0114	39.2
20.	293.920	.750	.0073	.0114	39.2
25.	357.400	.600	.0077	.0111	40.9
30.	420.880	.500	.0080	.0107	42.6
35.	484.360	.430	.0083	.0104	44.3
40.	507.840	.370	.0087	.0100	46.6
45.	561.320	.330	.0091	.0096	48.9
50.	614.800	.300	.0096	.0091	51.1
55.	668.280	.270	.0097	.0090	51.7
60.	721.760	.250	.0098	.0089	52.3
65.	775.240	.230	.0102	.0085	54.5
70.	828.720	.210	.0106	.0081	56.8
75.	882.200	.200	.0106	.0081	56.8
80.	935.680	.180	.0107	.0080	57.4
85.	989.160	.170	.0111	.0077	59.1

POROSITY DATA FOR SAMPLE R109-3494.

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	.0113	.0074	60.2
100.	1469.600	.150	.0115	.0072	61.4
110.	1616.560	.140	.0118	.0069	63.1
120.	1763.520	.130	.0119	.0068	63.6
130.	1910.480	.120	.0124	.0063	66.5
140.	2057.440	.110	.0127	.0061	67.6
150.	2204.400	.100	.0128	.0060	68.2
170.	2498.320	.088	.0130	.0057	69.3
180.	2645.280	.083	.0133	.0054	71.0
190.	2792.240	.079	.0136	.0051	72.7
200.	2939.200	.075	.0136	.0051	72.7
220.	3233.120	.068	.0138	.0049	73.9
240.	3527.040	.062	.0140	.0047	75.0
260.	3820.960	.057	.0143	.0045	76.1
280.	4114.880	.053	.0147	.0040	78.4
300.	4408.800	.050	.0148	.0039	79.0
330.	4849.680	.045	.0150	.0037	80.1
360.	5290.560	.041	.0152	.0035	81.3
390.	5731.440	.038	.0156	.0031	83.5
420.	6172.320	.035	.0157	.0030	84.1
450.	6613.200	.033	.0160	.0028	85.2
490.	7204.040	.030	.0163	.0024	86.9
510.	7494.960	.029	.0163	.0024	86.9
540.	7935.840	.027	.0166	.0021	88.6
590.	8670.640	.025	.0169	.0018	90.3
610.	8964.560	.024	.0169	.0018	90.3
640.	9405.440	.023	.0173	.0014	92.6
700.	10287.200	.021	.0175	.0012	93.7
740.	10875.040	.020	.0177	.0011	94.3
770.	11315.920	.019	.0177	.0011	94.3
800.	11756.800	.019	.0178	.0010	94.9
830.	12197.680	.018	.0182	.0005	97.2
860.	12638.560	.017	.0182	.0005	97.2
900.	13226.400	.017	.0184	.0003	98.3
930.	13667.280	.016	.0184	.0003	98.3
960.	13961.200	.016	.0185	.0002	98.9
1000.	14696.000	.014	.0187	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3506.

SEQUENCE NUMBER 2
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 OIA INDICATED
1.	14.696	15.000	.0000	.0189	.0
2.	29.392	7.500	.0048	.0141	25.3
3.	44.088	5.000	.0055	.0134	28.9
4.	58.784	3.700	.0058	.0131	30.7
5.	73.480	3.000	.0062	.0126	33.1
6.	88.176	2.500	.0069	.0119	36.7
7.	102.872	2.100	.0070	.0118	37.3
8.	117.568	1.800	.0070	.0118	37.3
9.	132.264	1.600	.0077	.0111	41.0
10.	146.960	1.500	.0078	.0110	41.6
11.	161.656	1.400	.0078	.0110	41.6
12.	176.352	1.300	.0080	.0109	42.2
13.	191.048	1.200	.0090	.0099	47.6
14.	205.744	1.100	.0091	.0098	48.2
15.	220.440	1.000	.0091	.0098	48.2
16.	235.136	.900	.0094	.0094	50.0
17.	249.832	.800	.0094	.0094	50.0
18.	264.528	.700	.0095	.0093	50.6
19.	279.224	.700	.0095	.0093	50.6
20.	293.920	.700	.0095	.0093	50.6
25.	367.400	.600	.0101	.0087	53.6
30.	440.880	.500	.0108	.0081	57.2
35.	514.360	.400	.0110	.0078	58.4
40.	587.840	.300	.0112	.0076	59.6
45.	661.320	.300	.0118	.0070	62.7
50.	734.800	.300	.0124	.0065	65.7
55.	808.280	.270	.0124	.0065	65.7
60.	881.760	.250	.0124	.0065	65.7
65.	955.240	.230	.0131	.0058	69.3
70.	1028.720	.210	.0134	.0055	71.1
75.	1102.200	.200	.0134	.0055	71.1
80.	1175.680	.180	.0134	.0055	71.1
85.	1249.160	.170	.0134	.0055	71.1

POROSITY DATA FOR SAMPLE R109-3506.

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	.0134	.0055	71.1
100.	1469.600	.150	.0135	.0053	71.7
110.	1616.560	.140	.0135	.0053	71.7
120.	1763.520	.130	.0145	.0043	77.1
130.	1910.480	.120	.0145	.0043	77.1
140.	2057.440	.110	.0145	.0043	77.1
150.	2204.400	.100	.0145	.0043	77.1
170.	2498.320	.088	.0147	.0042	77.7
180.	2645.280	.083	.0147	.0042	77.7
190.	2792.240	.079	.0147	.0042	77.7
200.	2939.200	.075	.0152	.0036	80.7
220.	3233.120	.068	.0152	.0036	80.7
240.	3527.040	.062	.0152	.0036	80.7
260.	3820.960	.057	.0152	.0036	80.7
280.	4114.880	.053	.0152	.0036	80.7
300.	4408.800	.050	.0157	.0032	83.1
330.	4849.680	.045	.0157	.0032	83.1
360.	5290.560	.041	.0159	.0030	84.3
390.	5731.440	.038	.0161	.0027	85.5
420.	6172.320	.035	.0161	.0027	85.5
450.	6613.200	.033	.0161	.0027	85.5
490.	7201.040	.030	.0160	.0020	89.2
510.	7494.960	.029	.0160	.0020	89.2
540.	7935.840	.027	.0160	.0020	89.2
590.	8670.640	.025	.0160	.0020	89.2
610.	8964.560	.024	.0172	.0017	91.0
640.	9405.440	.023	.0172	.0017	91.0
700.	10287.200	.021	.0174	.0015	92.2
740.	10875.040	.020	.0179	.0009	95.2
770.	11315.920	.019	.0179	.0009	95.2
800.	11756.800	.019	.0179	.0009	95.2
830.	12197.680	.018	.0179	.0009	95.2
860.	12638.560	.017	.0185	.0003	98.2
900.	13226.400	.017	.0185	.0003	98.2
930.	13667.280	.016	.0186	.0002	98.8
960.	13961.200	.016	.0186	.0002	98.8
1000.	14696.000	.014	.0189	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3516.

SEQUENCE NUMBER 3
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	.0160	.0
2.		29.392	7.500	.0021	.0147	12.3
3.		44.088	5.000	.0029	.0139	17.3
4.		58.784	3.700	.0035	.0133	21.0
5.		73.480	3.000	.0041	.0128	24.1
6.		88.176	2.500	.0044	.0125	25.9
7.		102.872	2.100	.0050	.0118	29.6
8.		117.568	1.800	.0053	.0115	31.5
9.		132.264	1.600	.0056	.0112	33.3
10.		146.960	1.500	.0056	.0112	33.3
11.		161.656	1.400	.0060	.0108	35.8
12.		176.352	1.300	.0063	.0105	37.7
13.		191.048	1.200	.0063	.0105	37.7
14.		205.744	1.100	.0066	.0102	39.5
15.		220.440	1.000	.0071	.0098	42.0
16.		235.136	.930	.0071	.0098	42.0
17.		249.832	.880	.0071	.0098	42.0
18.		264.528	.830	.0074	.0095	43.8
19.		279.224	.790	.0074	.0095	43.8
20.		293.920	.750	.0078	.0090	46.3
25.		367.400	.600	.0081	.0087	48.1
30.		440.880	.500	.0083	.0085	49.4
35.		514.360	.430	.0088	.0080	52.5
40.		587.840	.370	.0092	.0076	54.9
45.		661.320	.330	.0093	.0075	55.6
50.		734.800	.300	.0096	.0073	56.8
55.		808.280	.270	.0097	.0072	57.4
60.		881.760	.250	.0099	.0070	58.6
65.		955.240	.230	.0102	.0066	60.5
70.		1028.720	.210	.0104	.0064	61.7
75.		1102.200	.200	.0104	.0064	61.7
80.		1175.680	.180	.0105	.0063	62.3
85.		1249.160	.170	.0109	.0059	64.8

POROSITY DATA FOR SAMPLE R109-3516.

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	.0112	.0056	66.7
100.	1469.600	.150	.0112	.0056	66.7
110.	1616.560	.140	.0114	.0054	67.9
120.	1763.520	.130	.0114	.0054	67.9
130.	1910.480	.120	.0118	.0050	70.4
140.	2057.440	.110	.0118	.0050	70.4
150.	2204.400	.100	.0119	.0049	71.0
170.	2498.320	.088	.0120	.0048	71.6
180.	2645.280	.083	.0125	.0044	74.1
190.	2792.240	.079	.0125	.0044	74.1
200.	2939.200	.075	.0125	.0044	74.1
220.	3233.120	.068	.0128	.0041	75.9
240.	3527.040	.062	.0130	.0038	77.2
260.	3820.960	.057	.0133	.0035	79.0
280.	4114.880	.053	.0133	.0035	79.0
300.	4408.800	.050	.0133	.0035	79.0
330.	4849.680	.045	.0137	.0031	81.5
360.	5290.560	.041	.0141	.0027	84.0
390.	5731.440	.038	.0141	.0027	84.0
420.	6172.320	.035	.0143	.0025	85.2
450.	6613.200	.033	.0145	.0023	86.4
490.	7201.040	.030	.0145	.0023	86.4
510.	7494.960	.029	.0145	.0023	86.4
540.	7935.840	.027	.0152	.0017	90.1
590.	8670.640	.025	.0154	.0015	91.4
610.	8964.560	.024	.0154	.0015	91.4
640.	9405.440	.023	.0155	.0014	92.0
700.	10287.200	.021	.0157	.0011	93.2
740.	10875.040	.020	.0158	.0010	93.8
770.	11315.920	.019	.0159	.0009	94.4
800.	11756.800	.019	.0162	.0006	96.3
830.	12197.680	.018	.0162	.0006	96.3
860.	12638.560	.017	.0164	.0004	97.5
900.	13226.400	.017	.0164	.0004	97.5
930.	13667.280	.016	.0165	.0003	98.1
960.	13961.200	.016	.0168	.0000	100.0
1000.	14696.000	.014	.0168	.0000	100.0

FOROSITY DATA FOR SAMPLE R109-3526.

SEQUENCE NUMBER 4
PORE VOLUME .011 CC/G

					PCT. PORES GREATER THAN DIA INDICATED
PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	
1.	14.636	15.000	.0000	.0165	.0
2.	29.332	7.500	.0024	.0141	14.5
3.	44.038	5.000	.0030	.0135	18.1
4.	58.734	3.700	.0032	.0133	19.3
5.	73.430	3.000	.0036	.0129	21.7
6.	88.126	2.500	.0036	.0129	21.7
7.	102.872	2.100	.0042	.0123	25.3
8.	117.568	1.800	.0042	.0123	25.3
9.	132.264	1.600	.0052	.0113	31.3
10.	146.960	1.500	.0052	.0113	31.3
11.	161.656	1.400	.0052	.0113	31.3
12.	176.352	1.300	.0052	.0113	31.3
13.	191.048	1.200	.0060	.0105	36.1
14.	205.744	1.100	.0060	.0105	36.1
15.	220.440	1.000	.0060	.0105	36.1
16.	235.136	.930	.0064	.0101	38.6
17.	249.832	.880	.0064	.0101	38.6
18.	264.528	.830	.0064	.0101	38.6
19.	279.224	.790	.0072	.0094	43.4
20.	293.920	.750	.0072	.0094	43.4
25.	367.400	.600	.0074	.0092	44.6
30.	440.880	.500	.0076	.0090	45.8
35.	514.360	.430	.0080	.0086	48.2
40.	587.840	.370	.0084	.0082	50.6
45.	661.320	.330	.0084	.0082	50.6
50.	734.800	.300	.0084	.0082	50.6
55.	808.280	.270	.0086	.0080	51.8
60.	881.760	.250	.0088	.0078	53.0
65.	955.240	.230	.0089	.0077	53.6
70.	1028.720	.210	.0090	.0076	54.2
75.	1102.200	.200	.0093	.0073	56.0
80.	1175.680	.180	.0096	.0070	57.8
85.	1249.160	.170	.0098	.0068	59.0

POROSITY DATA FOR SAMPLE R109-3526.

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	.0099	.0066	60.2
100.	1469.600	.150	.0099	.0066	60.2
110.	1616.560	.140	.0100	.0065	60.8
120.	1763.520	.130	.0102	.0063	62.0
130.	1910.480	.120	.0102	.0063	62.0
140.	2057.440	.110	.0105	.0060	63.9
150.	2204.400	.100	.0109	.0056	66.3
170.	2498.320	.088	.0110	.0055	66.9
180.	2645.280	.083	.0114	.0051	69.3
190.	2792.240	.079	.0114	.0051	69.3
200.	2939.200	.075	.0114	.0051	69.3
220.	3233.120	.068	.0118	.0047	71.7
240.	3527.040	.062	.0120	.0045	72.9
260.	3820.960	.057	.0120	.0045	72.9
280.	4114.880	.053	.0122	.0043	74.1
300.	4408.800	.050	.0125	.0040	75.9
330.	4849.680	.045	.0125	.0040	75.9
360.	5290.560	.041	.0129	.0036	78.3
390.	5731.440	.038	.0131	.0034	79.5
420.	6172.320	.035	.0133	.0032	80.7
450.	6613.200	.033	.0133	.0032	80.7
490.	7201.040	.030	.0136	.0029	82.5
510.	7494.960	.029	.0138	.0027	83.7
540.	7935.840	.027	.0140	.0025	84.9
590.	8670.640	.025	.0144	.0021	87.3
610.	8964.560	.024	.0144	.0021	87.3
640.	9405.440	.023	.0147	.0018	89.2
700.	10287.200	.021	.0151	.0014	91.6
740.	10875.040	.020	.0153	.0012	92.8
770.	11315.920	.019	.0153	.0012	92.8
800.	11756.800	.019	.0155	.0010	94.0
830.	12197.680	.018	.0157	.0008	95.2
860.	12638.560	.017	.0159	.0006	96.4
900.	13226.400	.017	.0159	.0006	96.4
930.	13667.280	.016	.0161	.0004	97.6
960.	13961.200	.016	.0163	.0002	98.8
1000.	14696.000	.014	.0165	.0000	100.0

PORE VOLUME DATA FOR SAMPLE R109-3536.

SEQUENCE NUMBER 5
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.		14.596	15.000	.0000	.0203	.0
2.		29.592	7.500	.0012	.0191	5.8
3.		44.088	5.000	.0021	.0181	10.6
4.		58.784	3.700	.0032	.0171	15.9
5.		73.480	3.000	.0032	.0171	15.9
6.		88.176	2.500	.0043	.0160	21.2
7.		102.372	2.100	.0046	.0157	22.8
8.		117.568	1.800	.0046	.0157	22.8
9.		132.264	1.600	.0046	.0157	22.8
10.		146.960	1.500	.0059	.0144	29.1
11.		161.656	1.400	.0059	.0144	29.1
12.		176.352	1.300	.0062	.0141	30.7
13.		191.048	1.200	.0062	.0141	30.7
14.		205.744	1.100	.0062	.0141	30.7
15.		220.440	1.000	.0070	.0133	34.4
16.		235.136	.930	.0070	.0133	34.4
17.		249.832	.880	.0070	.0133	34.4
18.		264.528	.830	.0076	.0127	37.6
19.		279.224	.790	.0076	.0127	37.6
20.		293.920	.750	.0076	.0127	37.6
25.		367.400	.600	.0085	.0118	41.8
30.		440.880	.500	.0097	.0106	47.6
35.		514.360	.430	.0102	.0101	50.3
40.		587.840	.370	.0105	.0098	51.9
45.		661.320	.330	.0108	.0094	53.4
50.		734.800	.300	.0113	.0090	55.6
55.		808.280	.270	.0116	.0087	57.1
60.		881.760	.250	.0116	.0087	57.1
65.		955.240	.230	.0120	.0083	59.3
70.		1028.720	.210	.0123	.0079	60.8
75.		1102.200	.200	.0125	.0077	61.9
80.		1175.680	.180	.0128	.0075	63.0
85.		1249.160	.170	.0129	.0074	63.5

POROSITY DATA FOR SAMPLE R109-3536.

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	.0131	.0072	64.6
100.	1469.600	.150	.0132	.0071	65.1
110.	1616.560	.140	.0132	.0071	65.1
120.	1763.520	.130	.0139	.0063	68.8
130.	1910.480	.120	.0142	.0061	69.8
140.	2057.440	.110	.0142	.0061	69.8
150.	2204.400	.100	.0145	.0058	71.4
170.	2498.320	.088	.0150	.0053	74.1
180.	2645.280	.083	.0150	.0053	74.1
190.	2792.240	.079	.0153	.0049	75.7
200.	2939.200	.075	.0153	.0049	75.7
220.	3233.120	.068	.0157	.0046	77.2
240.	3527.040	.062	.0160	.0043	78.8
260.	3820.960	.057	.0160	.0043	78.8
280.	4114.880	.053	.0162	.0041	79.9
300.	4408.800	.050	.0163	.0040	80.4
330.	4849.680	.045	.0166	.0036	82.0
360.	5290.560	.041	.0169	.0033	83.6
390.	5731.440	.038	.0172	.0031	84.7
420.	6172.320	.035	.0174	.0029	85.7
450.	6613.200	.033	.0176	.0027	86.8
490.	7201.040	.030	.0179	.0024	88.4
510.	7494.960	.029	.0180	.0023	88.9
540.	7935.840	.027	.0180	.0023	88.9
590.	8670.640	.025	.0186	.0017	91.5
610.	8964.560	.024	.0186	.0017	91.5
640.	9405.440	.023	.0188	.0015	92.6
700.	10287.200	.021	.0190	.0013	93.7
740.	10875.040	.020	.0191	.0012	94.2
770.	11315.920	.019	.0193	.0010	95.2
800.	11756.800	.019	.0195	.0008	96.3
830.	12197.680	.018	.0196	.0006	96.8
860.	12638.560	.017	.0196	.0006	96.8
900.	13226.400	.017	.0198	.0004	97.9
930.	13667.280	.016	.0201	.0002	98.9
960.	13961.200	.016	.0201	.0002	98.9
1000.	14696.000	.014	.0203	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3545.

SEQUENCE NUMBER 6
PORE VOLUME .019 CC/G

					PCT. PORES GREATER THAN DIA INDICATED
PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	
1.	14.696	15.000	.0000	.0192	.0
2.	29.392	7.500	.0022	.0169	11.7
3.	44.088	5.000	.0034	.0158	17.5
4.	58.784	3.700	.0039	.0153	20.5
5.	73.480	3.000	.0046	.0146	24.0
6.	88.176	2.500	.0053	.0139	27.5
7.	102.872	2.100	.0056	.0136	29.2
8.	117.568	1.800	.0059	.0132	31.0
9.	132.264	1.600	.0065	.0127	33.9
10.	146.960	1.500	.0068	.0123	35.7
11.	161.656	1.400	.0070	.0122	36.3
12.	176.352	1.300	.0072	.0120	37.4
13.	191.048	1.200	.0075	.0117	39.2
14.	205.744	1.100	.0080	.0112	41.5
15.	220.440	1.000	.0081	.0111	42.1
16.	235.136	.930	.0083	.0109	43.3
17.	249.832	.860	.0084	.0108	43.9
18.	264.528	.830	.0084	.0108	43.9
19.	279.224	.790	.0090	.0102	46.8
20.	293.920	.750	.0090	.0102	46.8
25.	367.400	.600	.0095	.0096	49.7
30.	440.880	.500	.0101	.0091	52.6
35.	514.360	.430	.0104	.0087	54.4
40.	587.840	.370	.0108	.0084	56.1
45.	661.320	.330	.0110	.0082	57.3
50.	734.800	.300	.0112	.0080	58.5
55.	808.280	.270	.0113	.0079	59.1
60.	881.760	.250	.0114	.0077	59.6
65.	955.240	.230	.0119	.0073	62.0
70.	1028.720	.210	.0123	.0068	64.3
75.	1102.200	.200	.0124	.0067	64.9
80.	1175.680	.180	.0126	.0066	65.5
85.	1249.160	.170	.0127	.0065	66.1

POROSITY DATA FOR SAMPLE R109-3545.

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	.0129	.0063	67.3
100.	1469.600	.150	.0129	.0063	67.3
110.	1616.560	.140	.0132	.0059	69.0
120.	1763.520	.130	.0136	.0056	70.8
130.	1910.480	.120	.0137	.0055	71.3
140.	2057.440	.110	.0139	.0053	72.5
150.	2204.400	.100	.0141	.0050	73.7
170.	2498.320	.088	.0145	.0047	75.4
180.	2645.280	.083	.0148	.0044	77.2
190.	2792.240	.079	.0148	.0044	77.2
200.	2939.200	.075	.0150	.0041	78.4
220.	3233.120	.068	.0150	.0041	78.4
240.	3527.040	.062	.0154	.0038	80.1
260.	3820.960	.057	.0154	.0038	80.1
280.	4114.880	.053	.0157	.0035	81.9
300.	4408.800	.050	.0157	.0035	81.9
330.	4849.680	.045	.0160	.0031	83.6
360.	5290.560	.041	.0162	.0030	84.2
390.	5731.440	.038	.0166	.0026	86.5
420.	6172.320	.035	.0168	.0024	87.7
450.	6613.200	.033	.0168	.0024	87.7
490.	7201.040	.030	.0169	.0022	88.3
510.	7494.960	.029	.0169	.0022	88.3
540.	7935.840	.027	.0169	.0022	88.3
590.	8670.640	.025	.0174	.0018	90.6
610.	8964.560	.024	.0176	.0016	91.8
640.	9405.440	.023	.0176	.0016	91.8
700.	10287.200	.021	.0181	.0011	94.2
740.	10875.040	.020	.0181	.0011	94.2
770.	11315.920	.019	.0182	.0010	94.7
800.	11756.800	.019	.0184	.0008	95.9
830.	12197.680	.018	.0184	.0008	95.9
860.	12638.560	.017	.0186	.0006	97.1
900.	13226.400	.017	.0186	.0006	97.1
930.	13667.280	.016	.0187	.0004	97.7
960.	13961.200	.016	.0187	.0004	97.7
1000.	14696.000	.014	.0192	.0000	100.0

POROSIY DATA FOR SAMPLE R109-3555.

SEQUENCE NUMBER 7
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	15.600	.0007	.0195	3.4
2.	29.392	7.500	.0024	.0178	11.9
3.	44.088	5.000	.0035	.0167	17.5
4.	58.784	3.700	.0047	.0155	23.2
5.	73.480	3.000	.0050	.0152	24.9
6.	88.176	2.500	.0058	.0144	28.8
7.	102.872	2.100	.0064	.0138	31.6
8.	117.568	1.800	.0068	.0134	33.9
9.	132.264	1.600	.0072	.0130	35.6
10.	146.960	1.500	.0075	.0127	37.3
11.	161.656	1.400	.0075	.0127	37.3
12.	176.352	1.300	.0080	.0122	39.5
13.	191.048	1.200	.0083	.0119	41.2
14.	205.744	1.100	.0086	.0116	42.4
15.	220.440	1.000	.0089	.0113	44.1
16.	235.136	.900	.0089	.0113	44.1
17.	249.832	.800	.0092	.0110	45.8
18.	264.528	.800	.0095	.0107	46.9
19.	279.224	.750	.0096	.0106	47.5
20.	293.920	.750	.0097	.0105	48.0
25.	367.400	.600	.0104	.0098	51.4
30.	440.880	.500	.0114	.0088	56.5
35.	514.360	.400	.0121	.0081	59.9
40.	587.840	.370	.0126	.0076	62.1
45.	661.320	.330	.0129	.0073	63.8
50.	734.800	.300	.0132	.0070	65.5
55.	808.280	.270	.0134	.0068	66.1
60.	881.760	.250	.0135	.0067	66.7
65.	955.240	.230	.0136	.0066	67.2
70.	1028.720	.210	.0137	.0065	67.8
75.	1102.200	.200	.0139	.0063	68.9
80.	1175.680	.180	.0142	.0060	70.1
85.	1249.160	.170	.0144	.0058	71.2

POROSITY DATA FOR SAMPLE R109-3555.

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	.0146	.0056	72.3
100.	1469.600	.150	.0147	.0055	72.9
110.	1616.560	.140	.0149	.0052	74.0
120.	1763.520	.130	.0149	.0052	74.0
130.	1910.480	.120	.0153	.0049	75.7
140.	2057.440	.110	.0153	.0049	75.7
150.	2204.400	.100	.0155	.0047	76.8
170.	2498.320	.088	.0160	.0042	79.1
180.	2645.280	.083	.0160	.0042	79.1
190.	2792.240	.079	.0161	.0041	79.7
200.	2939.200	.075	.0161	.0041	79.7
220.	3233.120	.068	.0163	.0039	80.8
240.	3527.040	.062	.0165	.0037	81.9
260.	3820.960	.057	.0167	.0035	82.5
280.	4114.880	.053	.0170	.0032	84.2
300.	4408.800	.050	.0170	.0032	84.2
330.	4849.680	.045	.0172	.0030	85.3
360.	5290.560	.041	.0177	.0025	87.6
390.	5731.440	.038	.0177	.0025	87.6
420.	6172.320	.035	.0178	.0024	88.1
450.	6613.200	.033	.0179	.0023	88.7
490.	7201.040	.030	.0183	.0019	90.4
510.	7494.960	.029	.0185	.0017	91.5
540.	7935.840	.027	.0185	.0017	91.5
590.	8670.640	.025	.0186	.0016	92.1
610.	8964.560	.024	.0186	.0016	92.1
640.	9405.440	.023	.0189	.0013	93.8
700.	10287.200	.021	.0192	.0010	94.9
740.	10875.040	.020	.0194	.0008	96.0
770.	11315.920	.019	.0196	.0006	97.2
800.	11756.800	.019	.0196	.0006	97.2
830.	12197.680	.018	.0197	.0005	97.7
860.	12638.560	.017	.0197	.0005	97.7
900.	13226.400	.017	.0200	.0002	98.9
930.	13667.280	.016	.0200	.0002	98.9
960.	13961.200	.016	.0202	.0000	100.0
1000.	14696.000	.014	.0202	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3564.

SEQUENCE NUMBER 9
PORE VOLUME .023 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED	
				CHANGE IN PORE VOLUME CC/G	
1.	14.696	15.000	.0000	.0227	.0
2.	29.392	7.500	.0041	.0186	18.0
3.	44.088	5.000	.0053	.0174	23.2
4.	58.784	3.700	.0064	.0162	28.4
5.	73.480	3.000	.0067	.0160	29.4
6.	88.176	2.500	.0071	.0155	31.4
7.	102.872	2.100	.0079	.0147	35.1
8.	117.568	1.800	.0083	.0144	36.6
9.	132.264	1.600	.0088	.0139	38.7
10.	146.960	1.500	.0092	.0134	40.7
11.	161.656	1.400	.0096	.0131	42.3
12.	175.352	1.300	.0097	.0130	42.8
13.	191.048	1.200	.0100	.0126	44.3
14.	205.744	1.100	.0104	.0123	45.9
15.	220.440	1.000	.0105	.0121	46.4
16.	235.136	.930	.0107	.0119	47.4
17.	249.832	.880	.0111	.0116	49.0
18.	264.528	.830	.0112	.0114	49.5
19.	279.224	.790	.0114	.0112	50.5
20.	293.920	.750	.0117	.0110	51.5
25.	367.400	.600	.0124	.0103	54.6
30.	440.880	.500	.0131	.0096	57.7
35.	514.360	.430	.0135	.0091	59.8
40.	587.840	.370	.0140	.0086	61.9
45.	661.320	.330	.0140	.0086	61.9
50.	734.800	.300	.0141	.0085	62.4
55.	808.280	.270	.0141	.0085	62.4
60.	891.760	.250	.0142	.0084	62.9
65.	955.240	.230	.0146	.0081	64.4
70.	1028.720	.210	.0151	.0076	66.5
75.	1102.200	.200	.0152	.0075	67.0
80.	1175.680	.180	.0154	.0072	68.0
85.	1249.160	.170	.0155	.0071	68.6

POROSITY DATA FOR SAMPLE R109-3564.

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	.0158	.0069	69.6
100.	1469.600	.150	.0161	.0065	71.1
110.	1616.560	.140	.0165	.0062	72.7
120.	1763.520	.130	.0165	.0062	72.7
130.	1910.480	.120	.0167	.0060	73.7
140.	2057.440	.110	.0169	.0057	74.7
150.	2204.400	.100	.0173	.0054	76.3
170.	2498.320	.088	.0178	.0049	78.4
180.	2645.280	.083	.0178	.0049	78.4
190.	2792.240	.079	.0178	.0049	78.4
200.	2939.200	.075	.0180	.0047	79.4
220.	3233.120	.068	.0182	.0044	80.4
240.	3527.040	.062	.0185	.0042	81.4
260.	3820.960	.057	.0188	.0039	83.0
280.	4114.880	.053	.0188	.0039	83.0
300.	4408.800	.050	.0190	.0036	84.0
330.	4849.680	.045	.0193	.0034	85.1
360.	5290.560	.041	.0196	.0030	86.6
390.	5731.440	.038	.0196	.0030	86.6
420.	6172.320	.035	.0201	.0026	88.7
450.	6613.200	.033	.0202	.0025	89.2
490.	7201.040	.030	.0203	.0023	89.7
510.	7494.960	.029	.0206	.0021	90.7
540.	7935.840	.027	.0206	.0021	90.7
590.	8670.640	.025	.0211	.0015	93.3
610.	8964.560	.024	.0211	.0015	93.3
640.	9405.440	.023	.0214	.0013	94.3
700.	10287.200	.021	.0214	.0013	94.3
740.	10875.040	.020	.0217	.0009	95.9
770.	11315.920	.019	.0220	.0007	96.9
800.	11756.800	.019	.0220	.0007	96.9
830.	12197.680	.018	.0222	.0005	97.9
860.	12638.560	.017	.0222	.0005	97.9
900.	13226.400	.017	.0224	.0002	99.0
930.	13667.280	.016	.0224	.0002	99.0
960.	13961.200	.016	.0227	.0000	100.0
1000.	14696.000	.014	.0227	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3575.

SEQUENCE NUMBER 9
POPE VOLUME .016 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	.0156	.0
2.	29.392	1.500	.0058	.0098	37.0
3.	44.088	5.000	.0069	.0087	44.4
4.	58.784	1.700	.0095	.0061	60.7
5.	73.480	3.000	.0095	.0061	60.7
6.	98.176	2.500	.0095	.0061	60.7
7.	122.872	2.100	.0095	.0061	60.7
8.	147.568	1.800	.0095	.0061	60.7
9.	172.264	1.600	.0095	.0061	60.7
10.	196.960	1.500	.0095	.0061	60.7
11.	221.656	1.400	.0095	.0061	60.7
12.	246.352	1.300	.0095	.0061	60.7
13.	271.048	1.200	.0095	.0061	60.7
14.	295.744	1.100	.0095	.0061	60.7
15.	320.440	1.000	.0095	.0061	60.7
16.	345.136	.950	.0095	.0061	60.7
17.	369.832	.880	.0095	.0061	60.7
18.	394.528	.810	.0095	.0061	60.7
19.	419.224	.740	.0095	.0061	60.7
20.	443.920	.750	.0095	.0061	60.7
25.	468.616	.600	.0096	.0060	61.5
30.	493.312	.500	.0097	.0059	62.2
35.	518.008	.430	.0097	.0059	62.2
40.	542.704	.370	.0097	.0059	62.2
45.	567.400	.330	.0097	.0059	62.2
50.	592.096	.300	.0097	.0059	62.2
55.	616.792	.270	.0097	.0059	62.2
60.	641.488	.250	.0097	.0059	62.2
65.	666.184	.230	.0097	.0059	62.2
70.	690.880	.210	.0097	.0059	62.2
75.	715.576	.200	.0097	.0059	62.2
80.	740.272	.180	.0097	.0059	62.2
85.	764.968	.170	.0097	.0059	62.2

POROSITY DATA FOR SAMPLE R109-3575.

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	.0097	.0059	62.2
100.	1469.600	.150	.0104	.0052	66.7
110.	1616.560	.140	.0104	.0052	66.7
120.	1763.520	.130	.0104	.0052	66.7
130.	1910.480	.120	.0104	.0052	66.7
140.	2057.440	.110	.0104	.0052	66.7
150.	2204.400	.100	.0109	.0047	69.6
170.	2498.320	.088	.0109	.0047	69.6
180.	2645.280	.083	.0111	.0045	71.1
190.	2792.240	.079	.0113	.0043	72.6
200.	2939.200	.075	.0115	.0042	73.3
220.	3233.120	.068	.0115	.0042	73.3
240.	3527.040	.062	.0118	.0038	75.6
260.	3820.960	.057	.0120	.0036	77.0
280.	4114.880	.053	.0123	.0034	78.5
300.	4408.800	.050	.0123	.0034	78.5
330.	4849.680	.045	.0126	.0030	80.7
360.	5290.560	.041	.0128	.0028	82.2
390.	5731.440	.038	.0128	.0028	82.2
420.	6172.320	.035	.0133	.0023	85.2
450.	6613.200	.033	.0134	.0022	85.9
490.	7201.040	.030	.0138	.0019	88.1
510.	7494.960	.029	.0138	.0019	88.1
540.	7935.840	.027	.0139	.0017	88.9
590.	8670.640	.025	.0141	.0015	90.4
610.	8964.560	.024	.0141	.0015	90.4
640.	9405.440	.023	.0141	.0015	90.4
700.	10287.200	.021	.0143	.0013	91.9
740.	10875.040	.020	.0147	.0009	94.1
770.	11315.920	.019	.0149	.0007	95.6
800.	11756.800	.019	.0150	.0006	96.3
830.	12197.680	.018	.0154	.0002	98.5
860.	12638.560	.017	.0154	.0002	98.5
900.	13226.400	.017	.0154	.0002	98.5
930.	13667.280	.016	.0154	.0002	98.5
960.	13961.200	.016	.0154	.0002	98.5
1000.	14696.000	.014	.0156	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3585.

SEQUENCE NUMBER 10
PORE VOLUME .014 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	.0138	.0
2.		23.392	7.500	.0013	.0124	9.7
3.		44.088	5.000	.0020	.0118	14.5
4.		59.784	3.700	.0023	.0114	16.9
5.		73.480	3.000	.0028	.0110	20.2
6.		89.176	2.500	.0030	.0108	21.8
7.		102.872	2.100	.0032	.0105	23.4
8.		117.568	1.800	.0033	.0104	24.2
9.		132.264	1.600	.0040	.0098	29.0
10.		146.960	1.500	.0040	.0098	29.0
11.		161.656	1.400	.0040	.0098	29.0
12.		176.352	1.300	.0043	.0094	31.5
13.		191.048	1.200	.0045	.0092	33.1
14.		205.744	1.100	.0045	.0092	33.1
15.		220.440	1.000	.0049	.0089	35.5
16.		235.136	.900	.0049	.0089	35.5
17.		249.832	.800	.0049	.0089	35.5
18.		264.528	.800	.0053	.0084	38.7
19.		279.224	.790	.0053	.0084	38.7
20.		293.920	.750	.0055	.0082	40.3
25.		367.400	.600	.0058	.0080	41.9
30.		440.880	.500	.0060	.0078	43.5
35.		514.360	.430	.0064	.0073	46.8
40.		587.840	.370	.0069	.0069	50.0
45.		661.320	.330	.0071	.0067	51.6
50.		734.800	.300	.0072	.0065	52.4
55.		809.280	.270	.0073	.0064	53.2
60.		883.760	.250	.0075	.0062	54.8
65.		958.240	.230	.0075	.0062	54.8
70.		1028.720	.210	.0075	.0062	54.8
75.		1102.200	.200	.0075	.0062	54.8
80.		1175.680	.180	.0075	.0062	54.8
85.		1249.160	.170	.0080	.0058	58.1

POROSITY DATA FOR SAMPLE R109-3585.

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	.0080	.0058	58.1
100.	1469.600	.150	.0083	.0054	60.5
110.	1616.560	.140	.0088	.0050	63.7
120.	1763.520	.130	.0088	.0050	63.7
130.	1910.480	.120	.0090	.0048	65.3
140.	2057.440	.110	.0090	.0048	65.3
150.	2204.400	.100	.0093	.0044	67.7
170.	2498.320	.088	.0093	.0044	67.7
180.	2645.280	.083	.0093	.0044	67.7
190.	2792.240	.079	.0098	.0040	71.0
200.	2939.200	.075	.0098	.0040	71.0
220.	3233.120	.068	.0098	.0040	71.0
240.	3527.040	.062	.0100	.0038	72.6
260.	3820.960	.057	.0103	.0034	75.0
280.	4114.880	.053	.0104	.0033	75.8
300.	4408.800	.050	.0108	.0030	78.2
330.	4849.680	.045	.0108	.0030	78.2
360.	5290.560	.041	.0110	.0028	79.8
390.	5731.440	.038	.0110	.0028	79.8
420.	6172.320	.035	.0112	.0026	81.5
450.	6613.200	.033	.0112	.0026	81.5
490.	7201.040	.030	.0115	.0022	83.9
510.	7494.960	.029	.0116	.0021	84.7
540.	7935.840	.027	.0119	.0019	86.3
590.	8670.640	.025	.0123	.0014	89.5
610.	8964.560	.024	.0123	.0014	89.5
640.	9405.440	.023	.0124	.0013	90.3
700.	10287.200	.021	.0124	.0013	90.3
740.	10875.040	.020	.0129	.0009	93.5
770.	11315.920	.019	.0129	.0009	93.5
800.	11756.800	.019	.0131	.0007	95.2
830.	12197.680	.018	.0131	.0007	95.2
860.	12638.560	.017	.0133	.0004	96.8
900.	13226.400	.017	.0133	.0004	96.8
930.	13667.280	.016	.0135	.0002	98.4
960.	13961.200	.016	.0135	.0002	98.4
1000.	14696.000	.014	.0138	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3593.

SEQUENCE NUMBER 11
PORE VOLUME .016 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MILRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES
					GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0160	.0
2.	23.392	7.500	.0009	.0152	5.3
3.	44.088	5.000	.0035	.0125	22.0
4.	59.789	3.700	.0043	.0117	26.7
5.	73.490	3.000	.0044	.0116	27.3
6.	88.176	2.500	.0045	.0115	28.0
7.	102.872	2.100	.0057	.0104	35.3
8.	117.568	1.800	.0060	.0100	37.3
9.	132.264	1.600	.0062	.0098	38.7
10.	145.960	1.500	.0062	.0098	38.7
11.	161.656	1.400	.0063	.0097	39.3
12.	175.352	1.300	.0063	.0097	39.3
13.	191.048	1.200	.0063	.0097	39.3
14.	205.744	1.100	.0063	.0097	39.3
15.	220.440	1.000	.0063	.0097	39.3
16.	235.136	.930	.0063	.0097	39.3
17.	249.832	.890	.0063	.0097	39.3
18.	264.528	.830	.0063	.0097	39.3
19.	279.224	.790	.0075	.0085	46.7
20.	293.920	.750	.0075	.0085	46.7
25.	367.400	.600	.0078	.0082	48.7
30.	440.880	.500	.0081	.0079	50.7
35.	514.360	.430	.0082	.0078	51.3
40.	587.840	.370	.0083	.0077	52.0
45.	661.320	.330	.0083	.0077	52.0
50.	734.800	.300	.0084	.0076	52.7
55.	808.280	.270	.0090	.0070	56.0
60.	881.760	.250	.0096	.0064	60.0
65.	955.240	.230	.0096	.0064	60.0
70.	1028.720	.210	.0096	.0064	60.0
75.	1102.200	.200	.0096	.0064	60.0
80.	1175.680	.180	.0096	.0064	60.0
85.	1249.160	.170	.0101	.0059	63.3

POROSITY DATA FOR SAMPLE R109-3593.

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	.0054	66.0
100.	1469.600	.150	.0106	.0054	66.0
110.	1616.560	.140	.0106	.0054	66.0
120.	1763.520	.130	.0106	.0054	66.0
130.	1910.480	.120	.0106	.0054	66.0
140.	2057.440	.110	.0106	.0054	66.0
150.	2204.400	.100	.0113	.0047	70.7
170.	2498.320	.088	.0115	.0045	72.0
180.	2645.280	.083	.0115	.0045	72.0
190.	2792.240	.079	.0115	.0045	72.0
200.	2939.200	.075	.0115	.0045	72.0
220.	3233.120	.068	.0115	.0045	72.0
240.	3527.040	.062	.0115	.0045	72.0
250.	3820.960	.057	.0125	.0035	78.0
280.	4114.880	.053	.0125	.0035	78.0
300.	4408.800	.050	.0125	.0035	78.0
330.	4849.680	.045	.0125	.0035	78.0
360.	5290.560	.041	.0126	.0034	78.7
390.	5731.440	.038	.0126	.0034	78.7
420.	6172.320	.035	.0136	.0025	84.7
450.	6613.200	.033	.0136	.0025	84.7
490.	7201.040	.030	.0136	.0025	84.7
510.	7494.960	.029	.0138	.0022	86.0
540.	7935.840	.027	.0138	.0022	86.0
570.	8376.720	.025	.0138	.0022	86.0
610.	8964.560	.024	.0145	.0015	90.7
640.	9405.440	.023	.0145	.0015	90.7
700.	10287.200	.021	.0145	.0015	90.7
740.	10875.040	.020	.0145	.0015	90.7
770.	11315.920	.019	.0145	.0015	90.7
800.	11756.800	.019	.0152	.0009	94.7
830.	12197.680	.018	.0152	.0009	94.7
860.	12638.560	.017	.0152	.0009	94.7
900.	13226.400	.017	.0152	.0009	94.7
930.	13667.280	.016	.0152	.0009	94.7
960.	13961.200	.016	.0160	.0000	100.0
1000.	14696.000	.014	.0160	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3605.

SEQUENCE NUMBER 12
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	.0111	.0
2.	29.392	7.500	.0000	.0111	.0
3.	44.088	5.000	.0000	.0111	.0
4.	58.784	3.700	.0000	.0111	.0
5.	73.480	3.000	.0000	.0111	.0
6.	88.176	2.500	.0000	.0111	.0
7.	102.872	2.100	.0000	.0111	.0
8.	117.568	1.800	.0000	.0111	.0
9.	132.264	1.600	.0000	.0111	.0
10.	146.960	1.500	.0000	.0111	.0
11.	161.656	1.400	.0000	.0111	.0
12.	176.352	1.300	.0000	.0111	.0
13.	191.048	1.200	.0000	.0111	.0
14.	205.744	1.100	.0000	.0111	.0
15.	220.440	1.000	.0000	.0111	.0
16.	235.136	.930	.0000	.0111	.0
17.	249.832	.880	.0000	.0111	.0
18.	264.528	.830	.0000	.0111	.0
19.	279.224	.790	.0000	.0111	.0
20.	293.920	.750	.0000	.0111	.0
25.	367.400	.600	.0000	.0111	.0
30.	440.880	.500	.0000	.0111	.0
35.	514.360	.430	.0000	.0111	.0
40.	587.840	.370	.0011	.0100	9.9
45.	661.320	.330	.0012	.0099	10.9
50.	734.800	.300	.0013	.0098	11.9
55.	808.280	.270	.0020	.0091	17.8
60.	881.760	.250	.0024	.0087	21.8
65.	955.240	.230	.0024	.0087	21.8
70.	1028.720	.210	.0024	.0087	21.8
75.	1102.200	.200	.0029	.0083	25.7
80.	1175.680	.190	.0032	.0079	28.7
85.	1249.160	.170	.0037	.0074	33.7

POROSITY DATA FOR SAMPLE R109-3605.

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	.0041	.0070	36.6
100.	1469.600	.150	.0042	.0069	37.6
110.	1616.560	.140	.0044	.0067	39.6
120.	1763.520	.130	.0045	.0066	40.6
130.	1910.480	.120	.0047	.0064	42.6
140.	2057.440	.110	.0048	.0063	43.6
150.	2204.400	.100	.0050	.0062	44.6
170.	2498.320	.088	.0055	.0056	49.5
180.	2645.280	.083	.0055	.0056	49.5
190.	2792.240	.079	.0055	.0056	49.5
200.	2939.200	.075	.0055	.0056	49.5
220.	3233.120	.068	.0064	.0047	57.4
240.	3527.040	.062	.0064	.0047	57.4
260.	3820.960	.057	.0067	.0044	60.4
280.	4114.880	.053	.0067	.0044	60.4
300.	4408.800	.050	.0067	.0044	60.4
330.	4849.680	.045	.0079	.0032	71.3
360.	5290.560	.041	.0079	.0032	71.3
390.	5731.440	.038	.0079	.0032	71.3
420.	6172.320	.035	.0091	.0020	82.2
450.	6613.200	.033	.0091	.0020	82.2
490.	7201.040	.030	.0091	.0020	82.2
510.	7494.960	.029	.0091	.0020	82.2
540.	7935.840	.027	.0091	.0020	82.2
590.	8670.640	.025	.0091	.0020	82.2
610.	8964.560	.024	.0091	.0020	82.2
640.	9405.440	.023	.0106	.0006	95.0
700.	10287.200	.021	.0106	.0006	95.0
740.	10875.040	.020	.0106	.0006	95.0
770.	11315.920	.019	.0106	.0006	95.0
800.	11756.800	.019	.0106	.0006	95.0
830.	12197.680	.018	.0106	.0006	95.0
860.	12638.560	.017	.0106	.0006	95.0
900.	13226.400	.017	.0111	.0000	100.0
930.	13667.280	.016	.0111	.0000	100.0
960.	13961.200	.016	.0111	.0000	100.0
1000.	14696.000	.014	.0111	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3606.A

SEQUENCE NUMBER 13
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	.0168	.0
2.	29.392	7.500	.0017	.0151	10.3
3.	44.088	5.000	.0029	.0139	17.1
4.	58.784	3.700	.0037	.0131	21.9
5.	73.480	3.000	.0044	.0124	26.0
6.	88.176	2.500	.0047	.0121	28.1
7.	102.872	2.100	.0055	.0113	32.9
8.	117.568	1.800	.0058	.0111	34.2
9.	132.264	1.600	.0059	.0109	34.9
10.	146.960	1.500	.0059	.0109	34.9
11.	161.656	1.400	.0067	.0101	39.7
12.	176.352	1.300	.0067	.0101	39.7
13.	191.048	1.200	.0070	.0098	41.8
14.	205.744	1.100	.0070	.0098	41.8
15.	220.440	1.000	.0078	.0090	46.6
16.	235.136	.930	.0078	.0090	46.6
17.	249.832	.830	.0078	.0090	46.6
18.	264.528	.830	.0081	.0088	47.9
19.	279.224	.730	.0081	.0088	47.9
20.	293.920	.730	.0081	.0088	47.9
25.	367.400	.600	.0084	.0084	50.0
30.	440.880	.500	.0086	.0082	51.4
35.	514.360	.430	.0090	.0078	53.4
40.	587.840	.370	.0093	.0075	55.5
45.	661.320	.330	.0096	.0073	56.8
50.	734.800	.300	.0097	.0071	57.5
55.	808.280	.270	.0097	.0071	57.5
60.	881.760	.250	.0098	.0070	58.2
65.	955.240	.230	.0101	.0067	60.3
70.	1028.720	.210	.0105	.0063	62.3
75.	1102.200	.200	.0107	.0061	63.7
80.	1175.680	.180	.0109	.0059	65.1
85.	1249.160	.170	.0109	.0059	65.1

POROSITY DATA FOR SAMPLE R109-3606.A

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	.0109	.0059	65.1
100.	1469.600	.150	.0113	.0055	67.1
110.	1616.560	.140	.0114	.0054	67.8
120.	1763.520	.130	.0116	.0052	69.2
130.	1910.480	.120	.0116	.0052	69.2
140.	2057.440	.110	.0119	.0050	70.5
150.	2204.400	.100	.0119	.0050	70.5
170.	2498.320	.088	.0121	.0047	71.9
180.	2645.280	.083	.0121	.0047	71.9
190.	2792.240	.079	.0126	.0043	74.7
200.	2939.200	.075	.0126	.0043	74.7
220.	3233.120	.068	.0129	.0039	76.7
240.	3527.040	.062	.0129	.0039	76.7
260.	3820.960	.057	.0131	.0037	78.1
280.	4114.880	.053	.0131	.0037	78.1
300.	4408.800	.050	.0134	.0035	79.5
330.	4849.680	.045	.0136	.0032	80.8
360.	5290.560	.041	.0141	.0028	83.6
390.	5731.440	.038	.0141	.0028	83.6
420.	6172.320	.035	.0143	.0025	84.9
450.	6613.200	.033	.0144	.0024	85.6
490.	7201.040	.030	.0146	.0022	87.0
510.	7494.960	.029	.0149	.0020	88.4
540.	7935.840	.027	.0149	.0020	88.4
590.	8670.640	.025	.0152	.0016	90.4
610.	8964.560	.024	.0152	.0016	90.4
640.	9405.440	.023	.0154	.0014	91.8
700.	10287.200	.021	.0154	.0014	91.8
740.	10875.040	.020	.0157	.0012	93.2
770.	11315.920	.019	.0157	.0012	93.2
800.	11756.800	.019	.0157	.0012	93.2
830.	12197.680	.018	.0162	.0006	96.6
860.	12638.560	.017	.0162	.0006	96.6
900.	13226.400	.017	.0162	.0006	96.6
930.	13667.280	.016	.0162	.0006	96.6
960.	13961.200	.016	.0162	.0006	96.6
1000.	14696.000	.014	.0168	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3606.8

SEQUENCE NUMBER 14
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	.0012	.0102	10.4
3.		44.088	5.000	.0012	.0102	10.4
4.		58.784	3.700	.0012	.0102	10.4
5.		73.480	3.000	.0012	.0102	10.4
6.		88.176	2.500	.0014	.0099	12.5
7.		102.872	2.100	.0019	.0094	16.7
8.		117.568	1.900	.0019	.0094	16.7
9.		132.264	1.600	.0026	.0087	22.9
10.		146.960	1.500	.0026	.0087	22.9
11.		161.656	1.400	.0026	.0087	22.9
12.		176.352	1.300	.0033	.0080	29.2
13.		191.048	1.200	.0033	.0080	29.2
14.		205.744	1.100	.0033	.0080	29.2
15.		220.440	1.000	.0034	.0079	30.2
16.		235.136	.930	.0039	.0074	34.4
17.		249.832	.880	.0039	.0074	34.4
18.		254.528	.830	.0039	.0074	34.4
19.		279.224	.790	.0039	.0074	34.4
20.		293.920	.750	.0046	.0067	40.6
25.		367.400	.600	.0047	.0066	41.7
30.		440.880	.500	.0050	.0064	43.8
35.		514.360	.430	.0052	.0061	45.8
40.		587.840	.370	.0054	.0059	47.9
45.		661.320	.330	.0060	.0053	53.1
50.		734.800	.300	.0066	.0047	58.3
55.		808.280	.270	.0067	.0046	59.4
60.		881.760	.250	.0068	.0045	60.4
65.		955.240	.230	.0068	.0045	60.4
70.		1028.720	.210	.0068	.0045	60.4
75.		1102.200	.200	.0068	.0045	60.4
80.		1175.680	.180	.0068	.0045	60.4
85.		1249.160	.170	.0068	.0045	60.4

POROSITY DATA FOR SAMPLE R109-3606.B

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	.0068	.0045	60.4
100.	1469.600	.150	.0068	.0045	60.4
110.	1616.560	.140	.0068	.0045	60.4
120.	1763.520	.130	.0068	.0045	60.4
130.	1910.480	.120	.0068	.0045	60.4
140.	2057.440	.110	.0068	.0045	60.4
150.	2204.400	.100	.0068	.0045	60.4
170.	2498.320	.088	.0068	.0045	60.4
180.	2645.280	.083	.0068	.0045	60.4
190.	2792.240	.079	.0068	.0045	60.4
200.	2939.200	.075	.0068	.0045	60.4
220.	3233.120	.068	.0068	.0045	60.4
240.	3527.040	.062	.0068	.0045	60.4
260.	3820.960	.057	.0068	.0045	60.4
280.	4114.880	.053	.0068	.0045	60.4
300.	4408.800	.050	.0070	.0044	61.5
330.	4849.680	.045	.0076	.0038	66.7
360.	5290.560	.041	.0076	.0038	66.7
390.	5731.440	.038	.0076	.0038	66.7
420.	6172.320	.035	.0081	.0032	71.9
450.	6613.200	.033	.0081	.0032	71.9
490.	7201.040	.030	.0084	.0030	74.0
510.	7494.960	.029	.0084	.0030	74.0
540.	7935.840	.027	.0085	.0028	75.0
590.	8670.640	.025	.0091	.0022	80.2
610.	8964.560	.024	.0091	.0022	80.2
640.	9405.440	.023	.0094	.0019	83.3
700.	10287.200	.021	.0097	.0017	85.4
740.	10875.040	.020	.0098	.0015	86.5
770.	11315.920	.019	.0102	.0012	89.6
800.	11756.800	.019	.0102	.0012	89.6
830.	12197.680	.018	.0105	.0008	92.7
860.	12638.560	.017	.0105	.0008	92.7
900.	13226.400	.017	.0110	.0004	96.9
930.	13667.280	.016	.0111	.0002	97.9
960.	13961.200	.016	.0111	.0002	97.9
1000.	14696.000	.014	.0113	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3616.

SEQUENCE NUMBER 15
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	.0011	.0190	5.6
2.		29.392	7.500	.0023	.0179	11.2
3.		44.088	5.000	.0026	.0175	12.9
4.		58.784	3.700	.0034	.0168	16.9
5.		73.480	3.000	.0045	.0156	22.5
6.		88.176	2.500	.0048	.0154	23.6
7.		102.872	2.100	.0051	.0151	25.3
8.		117.568	1.800	.0052	.0149	25.8
9.		132.264	1.600	.0052	.0149	25.8
10.		146.960	1.500	.0059	.0143	29.2
11.		161.656	1.400	.0059	.0143	29.2
12.		176.352	1.300	.0059	.0143	29.2
13.		191.048	1.200	.0062	.0139	30.9
14.		205.744	1.100	.0068	.0134	33.7
15.		220.440	1.000	.0068	.0134	33.7
16.		235.136	.930	.0068	.0134	33.7
17.		249.832	.880	.0071	.0130	35.4
18.		264.528	.830	.0074	.0128	36.5
19.		279.224	.790	.0075	.0127	37.1
20.		293.920	.750	.0078	.0123	38.8
25.		367.400	.600	.0080	.0121	39.9
30.		440.880	.500	.0085	.0118	41.6
35.		514.360	.430	.0084	.0118	41.6
40.		587.840	.370	.0091	.0111	44.9
45.		661.320	.330	.0091	.0111	44.9
50.		734.800	.300	.0094	.0108	46.6
55.		808.280	.270	.0096	.0105	47.8
60.		881.760	.250	.0102	.0100	50.6
65.		955.240	.230	.0104	.0097	51.7
70.		1028.720	.210	.0108	.0094	53.4
75.		1102.200	.200	.0110	.0092	54.5
80.		1175.680	.180	.0112	.0089	55.6
85.		1249.160	.170	.0113	.0088	56.2

POROSITY DATA FOR SAMPLE R109-3616.

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	.0114	.0087	56.7
100.	1469.600	.150	.0119	.0083	59.0
110.	1616.560	.140	.0122	.0079	60.7
120.	1763.520	.130	.0125	.0077	61.8
130.	1910.480	.120	.0130	.0071	64.6
140.	2057.440	.110	.0134	.0068	66.3
150.	2204.400	.100	.0135	.0067	66.9
170.	2498.320	.088	.0138	.0063	68.5
180.	2645.280	.083	.0139	.0062	69.1
190.	2792.240	.079	.0142	.0060	70.2
200.	2939.200	.075	.0143	.0059	70.8
220.	3233.120	.068	.0147	.0054	73.0
240.	3527.040	.062	.0148	.0053	73.6
260.	3820.960	.057	.0151	.0051	74.7
280.	4114.880	.053	.0154	.0048	76.4
300.	4408.800	.050	.0156	.0045	77.5
330.	4849.680	.045	.0158	.0043	78.7
360.	5290.560	.041	.0158	.0043	78.7
390.	5731.440	.038	.0163	.0038	80.9
420.	6172.320	.035	.0166	.0035	82.6
450.	6613.200	.033	.0168	.0034	83.1
490.	7201.040	.030	.0171	.0031	84.8
510.	7494.960	.029	.0171	.0031	84.8
540.	7935.840	.027	.0173	.0028	86.0
590.	8670.640	.025	.0178	.0024	88.2
610.	8964.560	.024	.0180	.0022	89.3
640.	9405.440	.023	.0182	.0019	90.4
700.	10287.200	.021	.0186	.0016	92.1
740.	10875.040	.020	.0188	.0014	93.3
770.	11315.920	.019	.0188	.0014	93.3
800.	11756.800	.019	.0190	.0011	94.4
830.	12197.680	.018	.0192	.0009	95.5
860.	12638.560	.017	.0195	.0007	96.6
900.	13226.400	.017	.0196	.0006	97.2
930.	13667.280	.016	.0196	.0006	97.2
960.	13961.200	.016	.0202	.0000	100.0
1000.	14696.000	.014	.0202	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3626.

SEQUENCE NUMBER 15
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	.0212	.0
2.		29.392	7.500	.0011	.0201	5.1
3.		44.088	5.000	.0018	.0193	8.7
4.		58.784	3.700	.0029	.0182	13.8
5.		73.480	3.000	.0038	.0174	17.9
6.		88.176	2.500	.0038	.0174	17.9
7.		102.872	2.100	.0045	.0166	21.4
8.		117.568	1.800	.0050	.0162	23.5
9.		132.264	1.600	.0054	.0158	25.5
10.		146.960	1.500	.0056	.0155	26.5
11.		161.656	1.400	.0059	.0152	28.1
12.		176.352	1.300	.0064	.0148	30.1
13.		191.048	1.200	.0065	.0147	30.6
14.		205.744	1.100	.0066	.0146	31.1
15.		220.440	1.000	.0070	.0141	33.2
16.		235.136	.930	.0070	.0141	33.2
17.		249.832	.880	.0073	.0138	34.7
18.		264.528	.830	.0078	.0134	36.7
19.		279.224	.790	.0078	.0134	36.7
20.		293.920	.750	.0081	.0131	38.3
25.		367.400	.600	.0094	.0118	44.4
30.		440.880	.500	.0100	.0111	47.4
35.		514.360	.430	.0105	.0107	49.5
40.		587.840	.370	.0108	.0104	51.0
45.		661.320	.330	.0113	.0098	53.6
50.		734.800	.300	.0118	.0094	55.6
55.		808.280	.270	.0120	.0092	56.6
60.		881.760	.250	.0123	.0089	58.2
65.		955.240	.230	.0124	.0087	58.7
70.		1028.720	.210	.0125	.0086	59.2
75.		1102.200	.200	.0127	.0084	60.2
80.		1175.680	.180	.0130	.0082	61.2
85.		1249.160	.170	.0132	.0080	62.2

POROSITY DATA FOR SAMPLE R109-3626.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCI. PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0135	.0077	63.8
100.	1469.600	.150	.0138	.0073	65.3
110.	1616.560	.140	.0140	.0071	66.3
120.	1763.520	.130	.0146	.0066	68.9
130.	1910.480	.120	.0146	.0066	68.9
140.	2057.440	.110	.0150	.0062	70.9
150.	2204.400	.100	.0151	.0060	71.4
170.	2498.320	.088	.0154	.0057	73.0
190.	2645.280	.083	.0158	.0054	74.5
190.	2792.240	.079	.0158	.0054	74.5
200.	2939.200	.075	.0158	.0054	74.5
220.	3233.120	.068	.0162	.0050	76.5
240.	3527.040	.062	.0164	.0047	77.6
260.	3820.960	.057	.0164	.0047	77.6
280.	4114.880	.053	.0168	.0043	79.6
300.	4408.800	.050	.0171	.0041	80.6
330.	4849.680	.045	.0174	.0038	82.1
360.	5290.560	.041	.0176	.0036	83.2
390.	5731.440	.038	.0177	.0035	83.7
420.	6172.320	.035	.0180	.0031	85.2
450.	6613.200	.033	.0182	.0029	86.2
490.	7201.040	.030	.0186	.0026	87.8
510.	7494.960	.029	.0186	.0026	87.8
540.	7935.840	.027	.0187	.0025	88.3
590.	8670.640	.025	.0189	.0023	89.3
610.	8964.560	.024	.0192	.0019	90.8
640.	9405.440	.023	.0194	.0017	91.8
700.	10287.200	.021	.0196	.0015	92.9
740.	10875.040	.020	.0199	.0013	93.9
770.	11315.920	.019	.0199	.0013	93.9
800.	11756.800	.019	.0201	.0011	94.9
830.	12197.680	.018	.0202	.0010	95.4
860.	12638.560	.017	.0204	.0008	96.4
900.	13226.400	.017	.0205	.0006	96.9
930.	13667.280	.016	.0207	.0004	98.0
960.	13961.200	.016	.0212	.0000	100.0
1000.	14696.000	.014	.0212	.0000	100.0

POROSITY DATA FOR SAMPLE R103-3634.

SEQUENCE NUMBER 17
PORE VOLUME .022 CC/G

PRESSURE ATMS	PRESSURE PSI	PCRE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0007	.0211	3.3
2.	29.392	7.500	.0019	.0199	8.9
3.	44.088	5.000	.0026	.0193	11.7
4.	58.784	3.700	.0038	.0181	17.2
5.	73.480	3.000	.0043	.0176	19.4
6.	88.176	2.500	.0050	.0169	22.8
7.	102.872	2.100	.0061	.0158	27.8
8.	117.568	1.800	.0063	.0156	28.9
9.	132.264	1.600	.0067	.0152	30.6
10.	146.960	1.500	.0068	.0151	31.1
11.	161.656	1.400	.0075	.0143	34.4
12.	176.352	1.300	.0075	.0143	34.4
13.	191.048	1.200	.0083	.0136	37.8
14.	205.744	1.100	.0088	.0131	40.0
15.	220.440	1.000	.0088	.0131	40.0
16.	235.136	.930	.0090	.0129	41.1
17.	249.832	.880	.0095	.0124	43.3
18.	264.528	.830	.0095	.0124	43.3
19.	279.224	.790	.0095	.0124	43.3
20.	293.920	.750	.0101	.0118	46.1
25.	367.400	.600	.0109	.0109	50.0
30.	440.880	.500	.0122	.0097	55.6
35.	514.360	.430	.0122	.0097	55.6
40.	587.840	.370	.0134	.0085	61.1
45.	661.320	.330	.0135	.0084	61.7
50.	734.800	.300	.0136	.0083	62.2
55.	808.280	.270	.0137	.0081	62.8
60.	881.760	.250	.0140	.0079	63.9
65.	955.240	.230	.0143	.0075	65.6
70.	1028.720	.210	.0147	.0072	67.2
75.	1102.200	.200	.0151	.0068	68.9
80.	1175.680	.180	.0154	.0064	70.6
85.	1249.160	.170	.0157	.0062	71.7

POROSITY DATA FOR SAMPLE R109-3634.

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	.0158	.0061	72.2
100.	1469.600	.150	.0158	.0061	72.2
110.	1616.560	.140	.0163	.0056	74.4
120.	1763.520	.130	.0163	.0056	74.4
130.	1910.480	.120	.0163	.0056	74.4
140.	2057.440	.110	.0168	.0051	76.7
150.	2204.400	.100	.0168	.0051	76.7
170.	2498.320	.088	.0171	.0047	78.3
180.	2645.280	.083	.0171	.0047	78.3
190.	2792.240	.079	.0180	.0039	82.2
200.	2939.200	.075	.0180	.0039	82.2
220.	3233.120	.068	.0180	.0039	82.2
240.	3527.040	.062	.0181	.0038	82.8
260.	3820.960	.057	.0182	.0036	83.3
280.	4114.880	.053	.0184	.0035	83.9
300.	4408.800	.050	.0187	.0032	85.6
330.	4849.680	.045	.0187	.0032	85.6
360.	5290.560	.041	.0192	.0027	87.8
390.	5731.440	.038	.0192	.0027	87.8
420.	6172.320	.035	.0194	.0024	88.9
450.	6613.200	.033	.0194	.0024	88.9
490.	7201.040	.030	.0198	.0021	90.6
510.	7494.960	.029	.0198	.0021	90.6
540.	7935.840	.027	.0199	.0019	91.1
590.	8670.640	.025	.0203	.0016	92.8
610.	8964.560	.024	.0203	.0016	92.8
640.	9405.440	.023	.0205	.0013	93.9
700.	10287.200	.021	.0208	.0011	95.0
740.	10875.040	.020	.0209	.0010	95.6
770.	11315.920	.019	.0210	.0009	96.1
800.	11756.800	.019	.0210	.0009	96.1
830.	12197.680	.018	.0210	.0009	96.1
860.	12638.560	.017	.0216	.0002	98.9
900.	13226.400	.017	.0216	.0002	98.9
930.	13667.280	.016	.0219	.0000	100.0
960.	13961.200	.016	.0219	.0000	100.0
1000.	14696.000	.014	.0219	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3644.A

SEQUENCE NUMBER : A
POPE VOLUME : .015 CC/G

PRESSURE ATMS	PRESSURE PSI	PCRE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
1.	14.596	15.000	.0000	.0154	.0
2.	29.392	7.500	.0012	.0143	7.6
3.	44.388	5.000	.0019	.0136	12.1
4.	58.784	3.700	.0019	.0136	12.1
5.	73.480	3.000	.0019	.0136	12.1
6.	88.176	2.500	.0023	.0131	15.2
7.	102.872	2.100	.0042	.0112	27.3
8.	117.568	1.800	.0042	.0112	27.3
9.	132.264	1.600	.0042	.0112	27.3
10.	146.960	1.500	.0042	.0112	27.3
11.	161.656	1.400	.0042	.0112	27.3
12.	176.352	1.300	.0042	.0112	27.3
13.	191.048	1.200	.0042	.0112	27.3
14.	205.744	1.100	.0042	.0112	27.3
15.	220.440	1.000	.0054	.0101	34.8
16.	235.136	.930	.0054	.0101	34.8
17.	249.832	.880	.0054	.0101	34.8
18.	264.528	.830	.0054	.0101	34.8
19.	279.224	.790	.0054	.0101	34.8
20.	293.920	.750	.0054	.0101	34.8
25.	357.400	.600	.0057	.0097	37.1
30.	440.880	.500	.0061	.0093	39.4
35.	514.360	.430	.0061	.0093	39.4
40.	537.840	.370	.0061	.0093	39.4
45.	661.320	.330	.0067	.0088	43.2
50.	734.800	.300	.0072	.0082	47.0
55.	808.280	.270	.0072	.0082	47.0
60.	881.760	.250	.0072	.0082	47.0
65.	955.240	.230	.0077	.0077	50.0
70.	1028.720	.210	.0082	.0072	53.0
75.	1102.200	.200	.0082	.0072	53.0
80.	1175.680	.180	.0082	.0072	53.0
85.	1249.160	.170	.0083	.0071	53.8

POROSITY DATA FOR SAMPLE R109-3644.A

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	.0084	.0070	54.5
100.	1469.600	.150	.0093	.0061	60.6
110.	1616.560	.140	.0093	.0061	60.6
120.	1763.520	.130	.0093	.0061	60.6
130.	1910.480	.120	.0093	.0061	60.6
140.	2057.440	.110	.0096	.0058	62.1
150.	2204.400	.100	.0096	.0058	62.1
170.	2498.320	.088	.0106	.0048	68.9
190.	2645.280	.083	.0106	.0048	68.9
190.	2792.240	.079	.0106	.0048	68.9
200.	2939.200	.075	.0109	.0046	70.5
220.	3233.120	.068	.0111	.0043	72.0
240.	3527.040	.062	.0111	.0043	72.0
260.	3820.960	.057	.0117	.0037	75.8
280.	4114.880	.053	.0117	.0037	75.8
300.	4408.800	.050	.0117	.0037	75.8
330.	4849.680	.045	.0120	.0034	78.0
360.	5290.560	.041	.0120	.0034	78.0
390.	5731.440	.038	.0124	.0030	80.3
420.	6172.320	.035	.0124	.0030	80.3
450.	6613.200	.033	.0131	.0023	84.8
490.	7201.040	.030	.0131	.0023	84.8
510.	7494.960	.029	.0131	.0023	84.8
540.	7935.840	.027	.0131	.0023	84.8
590.	8670.640	.025	.0139	.0015	90.2
610.	8964.560	.024	.0139	.0015	90.2
640.	9405.440	.023	.0139	.0015	90.2
700.	10287.200	.021	.0139	.0015	90.2
740.	10875.040	.020	.0140	.0014	90.9
770.	11315.920	.019	.0140	.0014	90.9
800.	11756.800	.019	.0143	.0012	92.4
830.	12197.680	.018	.0143	.0012	92.4
860.	12638.560	.017	.0148	.0006	96.2
900.	13225.400	.017	.0148	.0006	96.2
930.	13667.280	.016	.0148	.0006	96.2
960.	13961.200	.016	.0154	.0000	100.0
1000.	14696.000	.014	.0154	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3644.

SEQUENCE NUMBER 19
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.		14.696	15.000	.0000	.0232	.0
2.		29.392	7.500	.0023	.0209	9.9
3.		44.088	5.000	.0032	.0199	13.9
4.		58.784	3.700	.0036	.0196	15.3
5.		73.480	3.000	.0046	.0186	19.8
6.		88.176	2.500	.0048	.0183	20.8
7.		102.872	2.100	.0057	.0174	24.8
8.		117.568	1.800	.0058	.0173	25.2
9.		132.264	1.600	.0066	.0165	28.7
10.		146.960	1.500	.0069	.0163	29.7
11.		161.656	1.400	.0072	.0159	31.2
12.		176.352	1.300	.0078	.0154	33.7
13.		191.048	1.200	.0078	.0154	33.7
14.		205.744	1.100	.0080	.0151	34.7
15.		220.440	1.000	.0083	.0149	35.6
16.		235.136	.930	.0086	.0146	37.1
17.		249.832	.880	.0091	.0141	39.1
18.		264.528	.830	.0091	.0141	39.1
19.		279.224	.790	.0092	.0140	39.6
20.		293.920	.750	.0092	.0140	39.6
25.		367.400	.600	.0099	.0133	42.6
30.		440.880	.500	.0104	.0127	45.0
35.		514.360	.430	.0110	.0122	47.5
40.		587.840	.370	.0115	.0117	49.5
45.		661.320	.330	.0119	.0112	51.5
50.		734.800	.300	.0124	.0108	53.5
55.		808.280	.270	.0126	.0105	54.5
60.		881.760	.250	.0128	.0103	55.4
65.		955.240	.230	.0133	.0099	57.4
70.		1028.720	.210	.0138	.0094	59.4
75.		1102.200	.200	.0140	.0092	60.4
80.		1175.680	.180	.0141	.0091	60.9
85.		1249.160	.170	.0143	.0088	61.9

POROSITY DATA FOR SAMPLE R109-3644.

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	.0147	.0085	63.4
100.	1469.600	.150	.0148	.0084	63.9
110.	1616.560	.140	.0151	.0080	65.3
120.	1763.520	.130	.0155	.0077	66.8
130.	1910.480	.120	.0159	.0072	68.8
140.	2057.440	.110	.0160	.0071	69.3
150.	2204.400	.100	.0162	.0070	69.8
170.	2498.320	.088	.0170	.0062	73.3
180.	2645.280	.083	.0171	.0061	73.8
190.	2792.240	.079	.0171	.0061	73.8
200.	2939.200	.075	.0172	.0060	74.3
220.	3233.120	.068	.0174	.0057	75.2
240.	3527.040	.062	.0175	.0056	75.7
260.	3820.960	.057	.0181	.0050	78.2
280.	4114.880	.053	.0182	.0049	78.7
300.	4408.800	.050	.0185	.0047	79.7
330.	4849.680	.045	.0187	.0045	80.7
360.	5290.560	.041	.0193	.0039	83.2
390.	5731.440	.038	.0194	.0038	83.7
420.	6172.320	.035	.0194	.0038	83.7
450.	6613.200	.033	.0197	.0034	85.1
490.	7201.040	.030	.0201	.0031	86.6
510.	7494.960	.029	.0202	.0030	87.1
540.	7935.840	.027	.0204	.0028	88.1
590.	8670.640	.025	.0206	.0025	89.1
610.	8964.560	.024	.0209	.0023	90.1
640.	9405.440	.023	.0209	.0023	90.1
700.	10287.200	.021	.0213	.0018	92.1
740.	10875.040	.020	.0213	.0018	92.1
770.	11315.920	.019	.0216	.0016	93.1
800.	11756.800	.019	.0220	.0011	95.0
830.	12197.680	.018	.0220	.0011	95.0
860.	12638.560	.017	.0222	.0009	96.0
900.	13226.400	.017	.0224	.0008	96.5
930.	13667.280	.016	.0225	.0007	97.0
960.	13961.200	.016	.0226	.0006	97.5
1000.	14696.000	.014	.0232	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3665.

SEQUENCE NUMBER 20
PORE VOLUME .015 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	.0151	.0
2.	29.392	7.500	.0009	.0141	6.3
3.	44.088	5.000	.0018	.0133	11.7
4.	58.784	3.700	.0031	.0120	20.3
5.	73.480	3.000	.0035	.0115	23.4
6.	88.176	2.500	.0041	.0109	27.3
7.	102.872	2.100	.0046	.0105	30.5
8.	117.568	1.800	.0046	.0105	30.5
9.	132.264	1.600	.0049	.0101	32.8
10.	146.960	1.500	.0054	.0097	35.9
11.	161.656	1.400	.0058	.0093	38.3
12.	176.352	1.300	.0059	.0092	39.1
13.	191.048	1.200	.0061	.0089	40.6
14.	205.744	1.100	.0064	.0087	42.2
15.	220.440	1.000	.0064	.0087	42.2
16.	235.136	.930	.0066	.0085	43.8
17.	249.832	.880	.0066	.0085	43.8
18.	264.528	.830	.0068	.0082	45.3
19.	279.224	.790	.0068	.0082	45.3
20.	293.920	.750	.0072	.0079	47.7
25.	367.400	.600	.0074	.0077	49.2
30.	440.880	.500	.0077	.0074	50.8
35.	514.360	.430	.0080	.0071	53.1
40.	587.840	.370	.0085	.0066	56.3
45.	661.320	.330	.0086	.0065	57.0
50.	734.800	.300	.0088	.0062	58.6
55.	808.280	.270	.0089	.0061	59.4
60.	881.760	.250	.0089	.0061	59.4
65.	955.240	.230	.0091	.0060	60.2
70.	1028.720	.210	.0093	.0058	61.7
75.	1102.200	.200	.0094	.0057	62.5
80.	1175.680	.180	.0097	.0054	64.1
85.	1249.160	.170	.0098	.0053	64.8

POROSITY DATA FOR SAMPLE R109-3665.

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	.0099	.0052	65.6
100.	1469.600	.150	.0104	.0047	68.8
110.	1616.560	.140	.0104	.0047	68.8
120.	1753.520	.130	.0104	.0047	68.8
130.	1910.480	.120	.0107	.0044	71.1
140.	2057.440	.110	.0107	.0044	71.1
150.	2204.400	.100	.0108	.0042	71.9
170.	2498.320	.088	.0108	.0042	71.9
180.	2645.280	.083	.0108	.0042	71.9
190.	2792.240	.079	.0111	.0040	73.4
200.	2939.200	.075	.0115	.0035	76.6
220.	3233.120	.068	.0115	.0035	76.6
240.	3527.040	.062	.0118	.0033	78.1
260.	3820.960	.057	.0118	.0033	78.1
280.	4114.880	.053	.0120	.0031	79.7
300.	4408.800	.050	.0120	.0031	79.7
330.	4849.680	.045	.0124	.0027	82.0
360.	5290.560	.041	.0124	.0027	82.0
390.	5731.440	.038	.0126	.0025	83.6
420.	6172.320	.035	.0128	.0022	85.2
450.	6613.200	.033	.0128	.0022	85.2
490.	7201.040	.030	.0131	.0020	86.7
510.	7494.960	.029	.0134	.0016	89.1
540.	7935.840	.027	.0134	.0016	89.1
590.	8670.640	.025	.0139	.0012	92.2
610.	8964.560	.024	.0139	.0012	92.2
640.	9405.440	.023	.0139	.0012	92.2
700.	10287.200	.021	.0144	.0007	95.3
740.	10875.040	.020	.0144	.0007	95.3
770.	11315.920	.019	.0145	.0006	96.1
800.	11756.800	.019	.0145	.0006	96.1
830.	12197.680	.018	.0145	.0006	96.1
860.	12638.560	.017	.0146	.0005	96.9
900.	13226.400	.017	.0146	.0005	96.9
930.	13667.280	.016	.0149	.0001	99.2
960.	13961.200	.016	.0149	.0001	99.2
1000.	14696.000	.014	.0151	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3675.

SEQUENCE NUMBER 2:
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	.0226	.0
2.		29.392	7.500	.0023	.0203	10.2
3.		44.088	5.000	.0033	.0193	14.6
4.		58.784	3.700	.0044	.0182	19.4
5.		73.480	3.000	.0049	.0177	21.8
6.		88.176	2.500	.0055	.0171	24.3
7.		112.872	2.100	.0057	.0169	25.2
8.		117.568	1.800	.0064	.0163	28.2
9.		132.264	1.600	.0068	.0158	30.1
10.		146.960	1.500	.0070	.0156	31.1
11.		161.656	1.400	.0070	.0156	31.1
12.		176.352	1.300	.0077	.0149	34.0
13.		191.048	1.200	.0080	.0146	35.4
14.		205.744	1.100	.0082	.0144	36.4
15.		220.440	1.000	.0088	.0138	38.8
16.		235.136	.930	.0088	.0138	38.8
17.		249.832	.880	.0090	.0136	39.8
18.		264.528	.830	.0090	.0136	39.8
19.		279.224	.790	.0093	.0133	41.3
20.		293.920	.750	.0093	.0133	41.3
25.		367.400	.600	.0099	.0127	43.7
30.		440.880	.500	.0104	.0122	46.1
35.		514.360	.430	.0108	.0119	47.6
40.		587.840	.370	.0112	.0114	49.5
45.		661.320	.330	.0118	.0109	51.9
50.		734.800	.300	.0123	.0103	54.4
55.		808.280	.270	.0124	.0102	54.9
60.		881.760	.250	.0126	.0100	55.8
65.		955.240	.230	.0131	.0096	57.8
70.		1028.720	.210	.0135	.0091	59.7
75.		1102.200	.200	.0138	.0088	61.2
80.		1175.680	.180	.0141	.0086	62.1
85.		1249.160	.170	.0144	.0082	63.6

POROSITY DATA FOR SAMPLE R109-3675.

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	.0148	.0078	65.5
100.	1469.600	.150	.0148	.0078	65.5
110.	1616.560	.140	.0152	.0075	67.0
120.	1763.520	.130	.0154	.0073	68.0
130.	1910.480	.120	.0158	.0068	69.9
140.	2057.440	.110	.0160	.0066	70.9
150.	2204.400	.100	.0163	.0064	71.8
170.	2498.320	.088	.0165	.0062	72.8
180.	2645.280	.083	.0169	.0057	74.8
190.	2792.240	.079	.0171	.0055	75.7
200.	2939.200	.075	.0174	.0053	76.7
220.	3233.120	.068	.0174	.0053	76.7
240.	3527.040	.062	.0178	.0048	78.6
260.	3820.960	.057	.0180	.0046	79.6
280.	4114.880	.053	.0181	.0045	80.1
300.	4408.800	.050	.0184	.0043	81.1
330.	4849.680	.045	.0188	.0038	83.0
360.	5290.560	.041	.0189	.0037	83.5
390.	5731.440	.038	.0193	.0033	85.4
420.	6172.320	.035	.0197	.0030	86.9
450.	6613.200	.033	.0199	.0027	87.9
490.	7201.040	.030	.0200	.0026	88.3
510.	7494.960	.029	.0203	.0023	89.8
540.	7935.840	.027	.0203	.0023	89.8
590.	8670.640	.025	.0207	.0020	91.3
610.	8964.560	.024	.0207	.0020	91.3
640.	9405.440	.023	.0209	.0018	92.2
700.	10207.200	.021	.0213	.0013	94.2
740.	10875.040	.020	.0215	.0011	95.1
770.	11315.920	.019	.0215	.0011	95.1
800.	11756.800	.019	.0219	.0008	96.6
830.	12197.680	.019	.0219	.0008	96.6
860.	12638.560	.017	.0221	.0005	97.6
900.	13226.400	.017	.0222	.0004	98.1
930.	13667.280	.016	.0224	.0002	99.0
960.	13961.200	.016	.0224	.0002	99.0
1000.	14696.000	.014	.0226	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3685.

SEQUENCE NUMBER 22
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	.0172	.0
2.	29.392	7.500	.0013	.0159	7.4
3.	44.088	5.000	.0023	.0149	13.5
4.	58.784	3.700	.0030	.0142	17.6
5.	73.480	3.000	.0036	.0136	20.9
6.	88.176	2.500	.0038	.0133	22.3
7.	102.872	2.100	.0045	.0126	26.4
8.	117.568	1.800	.0048	.0124	27.7
9.	132.264	1.600	.0051	.0121	29.7
10.	146.960	1.500	.0055	.0117	31.8
11.	161.656	1.400	.0057	.0115	33.1
12.	176.352	1.300	.0058	.0114	33.8
13.	191.048	1.200	.0059	.0113	34.5
14.	205.744	1.100	.0064	.0108	37.2
15.	220.440	1.000	.0065	.0107	37.8
16.	235.136	.930	.0066	.0106	38.5
17.	249.832	.880	.0067	.0104	39.2
18.	264.528	.830	.0068	.0103	39.9
19.	279.224	.790	.0071	.0101	41.2
20.	293.920	.750	.0072	.0100	41.9
25.	357.400	.600	.0079	.0093	45.9
30.	440.880	.500	.0093	.0079	54.1
35.	514.360	.430	.0095	.0077	55.4
40.	587.840	.370	.0097	.0074	56.8
45.	661.320	.330	.0099	.0073	57.4
50.	734.800	.300	.0103	.0068	60.1
55.	808.280	.270	.0103	.0068	60.1
60.	881.760	.250	.0104	.0067	60.8
65.	955.240	.230	.0108	.0064	62.8
70.	1028.720	.210	.0110	.0062	64.2
75.	1102.200	.200	.0111	.0060	64.9
80.	1175.680	.180	.0111	.0060	64.9
85.	1249.160	.170	.0111	.0060	64.9

POROSITY DATA FOR SAMPLE R109-36A5.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCT. PORES GREATER THAN DIA INDICATED
70.	1322.640	.160	.0114	.0058	66.2
100.	1469.600	.150	.0116	.0056	67.6
110.	1616.560	.140	.0117	.0055	68.2
120.	1763.520	.130	.0123	.0049	71.6
130.	1910.480	.120	.0123	.0049	71.6
140.	2057.440	.110	.0125	.0046	73.0
150.	2204.400	.100	.0125	.0046	73.0
170.	2498.320	.080	.0126	.0045	73.6
180.	2645.280	.083	.0129	.0043	75.0
190.	2792.240	.079	.0131	.0041	76.4
200.	2939.200	.075	.0131	.0041	76.4
220.	3233.120	.060	.0133	.0038	77.7
240.	3527.040	.062	.0137	.0035	79.7
260.	3820.960	.057	.0138	.0034	80.4
280.	4114.880	.053	.0138	.0034	80.4
300.	4408.800	.050	.0139	.0032	81.1
330.	4849.680	.045	.0143	.0029	83.1
360.	5290.560	.041	.0144	.0028	83.8
390.	5731.440	.038	.0146	.0026	85.1
420.	6172.320	.035	.0149	.0023	86.5
450.	6613.200	.033	.0149	.0023	86.5
490.	7201.040	.030	.0151	.0021	87.8
510.	7494.960	.029	.0153	.0019	89.2
540.	7935.840	.027	.0153	.0019	89.2
590.	8670.640	.025	.0156	.0016	90.5
610.	8964.560	.024	.0158	.0014	91.9
640.	9405.440	.023	.0158	.0014	91.9
700.	10287.200	.021	.0161	.0010	93.9
740.	10875.040	.020	.0161	.0010	93.9
770.	11315.920	.019	.0164	.0008	95.3
800.	11756.800	.019	.0164	.0008	95.3
830.	12197.680	.019	.0164	.0008	95.3
850.	12638.560	.017	.0167	.0005	97.3
900.	13226.400	.017	.0167	.0005	97.3
930.	13667.280	.016	.0169	.0002	98.6
960.	13961.200	.016	.0169	.0002	98.6
1000.	14696.000	.014	.0172	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3695.

SEQUENCE NUMBER 23
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	.0193	.0
2.	29.392	7.500	.0015	.0178	8.0
3.	44.088	5.000	.0021	.0173	10.6
4.	58.784	3.700	.0031	.0162	16.0
5.	73.480	3.000	.0036	.0157	18.6
6.	88.176	2.500	.0041	.0152	21.3
7.	102.872	2.100	.0046	.0147	23.9
8.	117.568	1.800	.0051	.0142	26.6
9.	132.264	1.600	.0053	.0140	27.7
10.	146.960	1.500	.0060	.0134	30.9
11.	161.656	1.400	.0062	.0132	31.9
12.	176.352	1.300	.0064	.0129	33.0
13.	191.048	1.200	.0067	.0126	34.6
14.	205.744	1.100	.0067	.0126	34.6
15.	220.440	1.000	.0072	.0121	37.2
16.	235.136	.930	.0076	.0117	39.4
17.	249.832	.880	.0076	.0117	39.4
18.	264.528	.830	.0080	.0113	41.5
19.	279.224	.790	.0081	.0112	42.0
20.	293.920	.750	.0081	.0112	42.0
25.	367.400	.600	.0087	.0106	45.2
30.	440.880	.500	.0092	.0101	47.9
35.	514.360	.430	.0098	.0096	50.5
40.	587.840	.370	.0103	.0090	53.2
45.	661.320	.330	.0105	.0088	54.3
50.	734.800	.300	.0107	.0086	55.3
55.	808.280	.270	.0110	.0083	56.9
60.	881.760	.250	.0113	.0080	58.5
65.	955.240	.230	.0116	.0077	60.1
70.	1028.720	.210	.0118	.0075	61.2
75.	1102.200	.200	.0122	.0071	63.3
80.	1175.680	.180	.0125	.0068	64.9
85.	1249.160	.170	.0125	.0068	64.9

POROSITY DATA FOR SAMPLE R109-3695.

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	.0125	.0068	64.9
100.	1469.600	.150	.0128	.0065	66.5
110.	1616.560	.140	.0132	.0062	68.1
120.	1763.520	.130	.0135	.0059	69.7
130.	1910.480	.120	.0135	.0059	69.7
140.	2057.440	.110	.0136	.0058	70.2
150.	2204.400	.100	.0142	.0051	73.4
170.	2498.320	.088	.0143	.0050	73.9
180.	2645.280	.083	.0146	.0047	75.5
190.	2792.240	.079	.0146	.0047	75.5
200.	2939.200	.075	.0146	.0047	75.5
220.	3233.120	.068	.0159	.0044	77.1
240.	3527.040	.062	.0153	.0040	79.3
260.	3820.960	.057	.0155	.0038	80.3
280.	4114.880	.053	.0156	.0037	80.9
300.	4408.800	.050	.0158	.0035	81.9
330.	4849.680	.045	.0160	.0033	83.0
360.	5290.560	.041	.0162	.0031	84.0
390.	5731.440	.038	.0164	.0029	85.1
420.	6172.320	.035	.0166	.0027	86.2
450.	6613.200	.033	.0166	.0027	86.2
490.	7201.040	.030	.0170	.0024	87.8
510.	7494.960	.029	.0172	.0022	88.8
540.	7935.840	.027	.0173	.0021	89.4
590.	8670.640	.025	.0178	.0015	92.0
610.	8964.560	.024	.0178	.0015	92.0
640.	9405.440	.023	.0179	.0014	92.6
700.	10287.200	.021	.0181	.0012	93.6
740.	10875.040	.020	.0183	.0010	94.7
770.	11315.920	.019	.0184	.0009	95.2
800.	11756.800	.019	.0184	.0009	95.2
830.	12197.680	.018	.0184	.0009	95.2
860.	12638.560	.017	.0189	.0004	97.9
900.	13226.400	.017	.0189	.0004	97.9
930.	13667.280	.016	.0191	.0002	98.9
960.	13961.200	.016	.0191	.0002	98.9
1000.	14696.000	.014	.0193	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3705.

SEQUENCE NUMBER 24
PORE VOLUME .020 CC/G

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	PCI. PORES GREATER THAN DIA INDICATED	
				CHANGE IN PORE VOLUME CC/G	
1.	14.696	5.000	.0000	.0202	.0
2.	29.392	7.500	.0020	.0182	10.1
3.	44.088	5.000	.0032	.0170	15.7
4.	58.784	3.700	.0040	.0162	19.7
5.	73.480	3.000	.0045	.0157	22.5
6.	88.176	2.500	.0051	.0151	25.3
7.	102.872	2.100	.0058	.0144	28.7
8.	117.568	1.800	.0062	.0140	30.9
9.	132.264	1.600	.0067	.0135	33.1
10.	146.960	1.500	.0069	.0133	34.3
11.	161.656	1.400	.0073	.0129	36.0
12.	176.352	1.300	.0075	.0127	37.1
13.	191.048	1.200	.0078	.0124	38.8
14.	205.744	1.100	.0081	.0121	39.9
15.	220.440	1.000	.0082	.0120	40.4
16.	235.136	.930	.0086	.0116	42.7
17.	249.832	.880	.0091	.0111	44.9
18.	264.528	.830	.0091	.0111	44.9
19.	279.224	.790	.0092	.0110	45.5
20.	293.920	.750	.0092	.0110	45.5
25.	367.400	.600	.0098	.0104	48.3
30.	440.880	.500	.0102	.0100	50.6
35.	514.360	.430	.0108	.0094	53.4
40.	587.840	.370	.0113	.0088	56.2
45.	661.320	.330	.0117	.0085	57.9
50.	734.800	.300	.0119	.0083	59.0
55.	808.280	.270	.0123	.0079	60.7
60.	881.760	.250	.0127	.0075	62.9
65.	955.240	.230	.0128	.0074	63.5
70.	1028.720	.210	.0130	.0071	64.6
75.	1102.200	.200	.0134	.0068	66.3
80.	1175.680	.180	.0136	.0066	67.4
85.	1249.160	.170	.0137	.0065	68.0

POROSITY DATA FOR SAMPLE R109-3705.

PRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCI, PORES GREATER THAN DIA INDICATED
90.	1322.640	.160	.0138	.0064	68.5
100.	1469.600	.150	.0145	.0057	71.9
110.	1616.560	.140	.0146	.0056	72.5
120.	1763.520	.130	.0147	.0054	73.0
130.	1910.480	.120	.0150	.0052	74.2
140.	2057.440	.110	.0152	.0050	75.3
150.	2204.400	.100	.0153	.0049	75.8
170.	2498.320	.088	.0158	.0044	78.1
180.	2645.280	.083	.0159	.0043	78.7
190.	2792.240	.079	.0159	.0043	78.7
200.	2939.200	.075	.0159	.0043	78.7
220.	3233.120	.068	.0163	.0039	80.9
240.	3527.040	.062	.0163	.0039	80.9
260.	3820.960	.057	.0166	.0036	82.0
280.	4114.880	.053	.0170	.0032	84.3
300.	4408.800	.050	.0170	.0032	84.3
330.	4849.680	.045	.0171	.0031	84.8
360.	5290.560	.041	.0171	.0031	84.8
390.	5731.440	.038	.0176	.0026	87.1
420.	6172.320	.035	.0178	.0024	88.2
450.	6613.200	.033	.0179	.0023	88.8
490.	7201.040	.030	.0182	.0020	89.9
510.	7494.960	.029	.0182	.0020	89.9
540.	7935.840	.027	.0185	.0017	91.6
590.	8670.640	.025	.0185	.0017	91.6
610.	8964.560	.024	.0186	.0016	92.1
640.	9405.440	.023	.0191	.0011	94.4
700.	10287.200	.021	.0193	.0009	95.5
740.	10875.040	.020	.0193	.0009	95.5
770.	11315.920	.019	.0195	.0007	96.6
800.	11756.800	.019	.0195	.0007	96.6
830.	12197.680	.018	.0197	.0005	97.8
860.	12638.560	.017	.0197	.0005	97.8
900.	13226.400	.017	.0199	.0003	98.3
930.	13667.280	.016	.0199	.0003	98.3
960.	13961.200	.016	.0202	.0000	100.0
1000.	14696.000	.014	.0202	.0000	100.0

POROSITY DATA FOR SAMPLE R109-3711.

SEQUENCE NUMBER 25
PORE VOLUME .019 CC/G

PPRESSURE ATMS	PRESSURE PSI	PORE DIAMETER MICRON	PORE VOLUME CC/G	CHANGE IN PORE VOLUME CC/G	PCI. PORES GREATER THAN DIA INDICATED
1.	14.696	15.000	.0000	.0188	.0
2.	29.392	7.500	.0020	.0168	10.4
3.	44.088	5.000	.0022	.0166	11.6
4.	58.784	3.700	.0030	.0158	16.2
5.	73.480	3.000	.0036	.0152	19.1
6.	88.176	2.500	.0041	.0147	22.0
7.	102.872	2.100	.0046	.0142	24.3
8.	117.568	1.800	.0052	.0136	27.7
9.	132.264	1.600	.0054	.0134	28.9
10.	146.960	1.500	.0058	.0130	30.6
11.	161.656	1.400	.0063	.0125	33.5
12.	176.352	1.300	.0065	.0123	34.7
13.	191.048	1.200	.0070	.0118	37.0
14.	205.744	1.100	.0070	.0118	37.0
15.	220.440	1.000	.0074	.0114	39.3
16.	235.136	.930	.0074	.0114	39.3
17.	249.832	.880	.0076	.0112	40.5
18.	264.528	.830	.0077	.0111	41.0
19.	279.224	.790	.0080	.0108	42.8
20.	293.920	.750	.0083	.0105	43.9
25.	367.400	.600	.0087	.0101	46.2
30.	440.880	.500	.0092	.0096	49.1
35.	514.360	.430	.0098	.0090	52.0
40.	587.840	.370	.0103	.0085	54.9
45.	661.320	.330	.0105	.0083	56.1
50.	734.800	.300	.0109	.0079	57.8
55.	808.280	.270	.0111	.0077	59.0
60.	881.760	.250	.0113	.0075	60.1
65.	955.240	.230	.0115	.0073	61.3
70.	1028.720	.210	.0117	.0071	62.4
75.	1102.200	.200	.0118	.0070	63.0
80.	1175.680	.180	.0119	.0068	63.6
85.	1249.160	.170	.0121	.0067	64.2

POROSITY DATA FOR SAMPLE R109-3711.

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	.0123	.0065	65.3
100.	1469.600	.150	.0126	.0062	67.1
110.	1616.560	.140	.0130	.0059	69.4
120.	1763.520	.130	.0130	.0058	69.4
130.	1910.480	.120	.0133	.0055	70.5
140.	2057.440	.110	.0137	.0051	72.8
150.	2204.400	.100	.0139	.0049	74.0
170.	2498.320	.088	.0140	.0048	74.6
180.	2645.280	.083	.0141	.0047	75.1
190.	2792.240	.079	.0141	.0047	75.1
200.	2939.200	.075	.0141	.0047	75.1
220.	3233.120	.068	.0146	.0042	77.5
240.	3527.040	.062	.0150	.0038	79.8
260.	3820.960	.057	.0151	.0037	80.3
280.	4114.880	.053	.0152	.0036	80.9
300.	4408.800	.050	.0154	.0034	82.1
330.	4849.680	.045	.0158	.0030	83.8
360.	5290.560	.041	.0158	.0030	83.8
390.	5731.440	.038	.0161	.0027	85.5
420.	6172.320	.035	.0164	.0024	87.3
450.	6613.200	.033	.0166	.0022	88.4
490.	7201.040	.030	.0166	.0022	88.4
510.	7494.960	.029	.0166	.0022	88.4
540.	7935.840	.027	.0169	.0018	90.2
590.	8670.640	.025	.0174	.0014	92.5
610.	8964.560	.024	.0176	.0012	93.6
640.	9405.440	.023	.0176	.0012	93.6
700.	10287.200	.021	.0180	.0008	96.0
740.	10875.040	.020	.0180	.0008	96.0
770.	11315.920	.019	.0180	.0008	96.0
800.	11756.800	.019	.0180	.0008	96.0
830.	12197.680	.018	.0180	.0008	96.0
860.	12638.560	.017	.0185	.0003	98.3
900.	13226.400	.017	.0185	.0003	98.3
930.	13667.280	.016	.0186	.0002	98.8
960.	13961.200	.016	.0186	.0002	98.8
1000.	14695.000	.014	.0188	.0000	100.0

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