

APPENDIX
I. GRAIN-SIZE ANALYSES, LEG 24

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Sand-silt-clay distribution was determined on 10-cc sediment samples collected at the time the cores were split and described. The results are listed in Table 1.

The sediment classification used here is that of Shepard (1954) with the sand, silt, and clay boundaries based on the Wentworth (1922) scale (Figure 1). Thus the sand, silt, and clay fractions are composed of particles whose diameters range from 2000 to 62.5 μ , 62.5 to 3.91 μ , and less than 3.91 μ , respectively. This classification is applied regardless of sediment type and origin; therefore, the sediment names used in this table may differ from those used elsewhere in this volume, e.g., a silt composed of nannofossils in this table may be called a nanno ooze in a site chapter.

Standard sieve and pipette methods were used to determine the grain-size distribution. The sediment sample was dried and dispersed in a Calgon solution. If a sediment sample failed to disaggregate, it was treated with a sonic probe and, if necessary, hydrogen peroxide. Sediment samples which resisted the above treatment were not analyzed.

The sand fraction was removed by wet sieving using a 63 μ sieve, and the silt and clay fractions were analyzed by standard pipette analysis. Sampling depths and times were calculated using equations derived from Stokes settling velocity equation (Krumbein and Pettijohn, 1938, p. 95-96):

$$\frac{D}{t} = V = \frac{2(d_1 - d_2)gr^2}{9\eta}$$

$$t = \frac{9D\eta}{2gr^2(d_1 - d_2)}$$

where

- V = velocity in cm/sec
- t^1 = time in sec
- D = depth pipette is inserted in cm
- g^1 = gravity in cm/sec²
- r^1 = radius of individual particles in cm
- d_1 = density of solid particles arbitrarily set at 2.675 g/cc
- d_2 = absolute density of distilled water at different temperatures (Hodgman et al., 1960, p. 2129)
- η = viscosity of distilled water in poises at different temperatures (Hodgman et al., 1960, p. 2181)

The reproducibility of the grain size analysis has been previously tested (Boyce, 1972), and it was found that over a period of time with several operators the reproducibility for the sand-silt-clay fractions is $\pm 2.5\%$ (absolute). For detailed step-by-step procedures, see Volume 4 of the Initial Reports of the Deep Sea Drilling Project.

¹Five figures were used in calculations to avoid rounding off variations.

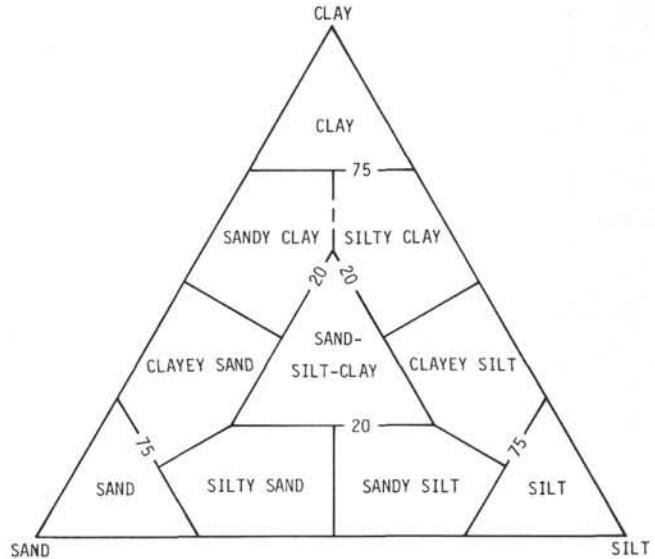


Figure 1. Sediment classification after Shepard (1954) with the sand, silt, and clay size fractions based on the Wentworth (1932) Grade Scale: Sand, silt, and clay size particles having respective diameters of 2000 to 62.5 microns, 62.5 to 3.91 microns, and less than 3.91 microns. Shepard's (1954) sediment classification is a function of sand, silt, and clay size percentages and not composition.

TABLE 1
DSDP Grain-Size Determination, Leg 24

Sample (Interval in cm)	Subbottom Depth (cm)	Sand (%)	Silt (%)	Clay (%)	Classification
Site 231					
2-2, 76	2.8	3.3	45.1	51.6	Silty clay
4-2, 50	18.5	36.7	40.4	22.9	Sand-silt-clay
5-6, 71	34.2	66.9	16.6	16.5	Silty sand
15-1, 85	121.9	1.2	55.5	43.3	Clayey silt
15-3, 18	124.2	41.3	37.6	21.1	Sand-silt-clay
31-4, 49	278.0	1.1	27.9	71.0	Silty clay
61-6, 77	565.3	2.0	22.9	75.2	Clay
Hole 232					
1-1, 96	1.0	19.4	56.5	24.2	Clayey silt
4-5, 90	28.4	8.8	74.9	16.3	Clayey silt
5-6, 68	39.2	3.1	53.9	43.0	Clayey silt
5-6, 88	39.4	5.7	80.8	13.5	Silt
13-1, 64	107.6	8.0	72.2	19.8	Clayey silt
18-3, 70	158.2	1.2	46.6	52.2	Silty clay
Hole 232A					
1-4, 36	163.9	9.1	67.0	23.9	Clayey silt
7-2, 112	218.6	13.1	70.8	16.0	Clayey silt
9-5, 130	242.3	1.0	48.8	50.2	Silty clay
14-1, 110	283.6	18.6	57.3	24.1	Clayey silt
Site 233					
2-4, 72	10.2	12.0	43.5	44.5	Silty clay
5-5, 93	40.4	4.2	56.7	39.0	Clayey silt
5-5, 119	40.7	22.9	55.5	21.5	Sand-silt-clay
11-4, 88	95.9	1.6	56.7	41.7	Clayey silt
16-4, 40	142.9	0.9	52.6	46.6	Clayey silt
Site 234					
1-2, 87	2.4	11.6	31.1	57.3	Silty clay
1-4, 50	5.0	0.2	19.4	80.4	Clay

TABLE 1 - Continued

Sample (Interval in cm)	Subbottom Depth (cm)	Sand (%)	Silt (%)	Clay (%)	Classification
6-6, 137	84.9	0.0	7.2	92.7	Clay
9-1, 120	153.2	0.0	9.2	90.7	Clay
10-4, 14	166.1	0.0	9.3	90.7	Clay
15-3, 44	240.9	0.0	6.0	94.0	Clay
Site 235					
1-2, 91	2.4	0.1	22.0	77.9	Clay
4-3, 30	31.8	0.3	16.7	83.0	Clay
5-3, 60	70.1	0.5	78.7	20.7	Silt
5-6, 78	74.8	0.1	12.4	87.6	Clay
5-6, 89	74.9	0.6	19.3	80.1	Clay
5-6, 110	75.1	0.0	17.2	82.7	Clay
10-2, 108	221.1	0.0	13.8	86.2	Clay
11-3, 23	269.2	0.0	28.4	71.6	Silty clay
11-3, 38	269.4	0.0	9.2	90.7	Clay
11-3, 80	269.8	0.0	11.2	88.8	Clay
Site 236					
3-2, 68	18.2	65.7	14.8	19.5	Clayey sand
3-2, 126	18.8	8.3	15.9	75.9	Clay
5-3, 41	38.4	20.1	48.5	31.4	Sand-silt-clay
5-3, 71	38.7	84.8	7.6	7.7	Sand
5-6, 116	43.7	49.3	29.8	20.9	Sand-silt-clay
6-2, 107	47.1	1.5	32.0	66.6	Silty clay
8-3, 88	67.4	0.8	11.3	87.9	Clay
9-3, 112	77.1	44.1	35.2	20.8	Sand-silt-clay
12-6, 38	109.4	54.7	25.7	19.6	Silty sand
12-6, 90	109.9	0.2	13.3	86.5	Clay
15-4, 94	135.4	0.1	22.6	77.3	Clay
16-5, 82	146.3	0.0	4.3	95.7	Clay
19-2, 88	170.4	0.0	6.4	93.6	Clay
20-5, 110	184.6	0.1	43.9	56.0	Silty clay
22-4, 62	201.9	18.6	50.9	30.6	Clayey silt
25-4, 62	230.1	0.1	51.5	48.4	Clayey silt
29-1, 140	264.4	0.4	57.6	42.0	Clayey silt
Site 237					
2-1, 20	6.7	83.4	9.7	7.0	Sand
Site 238					
1-4, 80	5.3	26.9	31.7	41.5	Sand-silt-clay
3-3, 100	23.0	22.9	30.3	46.9	Sand-silt-clay
5-4, 103	43.5	33.1	26.6	40.3	Sand-silt-clay
7-2, 110	56.1	1.9	31.9	66.2	Silty clay
7-2, 119	56.2	0.8	37.1	62.1	Silty clay
7-5, 10	59.6	20.1	31.8	48.2	Sand-silt-clay

TABLE 1 - Continued

Sample (Interval in cm)	Subbottom Depth (cm)	Sand (%)	Silt (%)	Clay (%)	Classification
10-4, 85	87.4	18.8	38.7	42.5	Silty clay
11-3, 100	95.5	8.5	39.5	52.0	Silty clay
13-3, 100	114.5	5.0	39.8	55.2	Silty clay
14-2, 73	122.2	51.6	29.7	18.6	Silty sand
14-4, 86	125.4	56.4	27.3	16.3	Silty sand
15-5, 71	136.2	11.4	35.6	52.9	Silty clay
16-5, 25	145.3	0.2	34.9	65.0	Silty clay
16-5, 100	146.0	31.7	43.7	24.6	Sand-silt-clay
38-5, 101	355.0	8.2	53.4	38.5	Clayey silt
39-5, 95	364.5	5.5	57.3	37.2	Clayey silt
42-1, 95	387.0	4.8	59.6	35.6	Clayey silt
49-2, 98	455.0	0.2	55.0	44.8	Clayey silt
51-2, 13	473.1	4.7	55.8	39.6	Clayey silt
51-4, 72	476.7	1.8	52.9	45.4	Clayey silt
52-1, 59	481.6	4.8	62.5	32.6	Clayey silt
53-2, 6	492.1	1.3	61.7	37.1	Clayey silt
53-4, 97	496.0	1.1	64.1	34.9	Clayey silt
54-1, 23	500.2	0.9	66.4	32.7	Clayey silt

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