Assessing your Soil's inherent properties: And its Impact on the Water & Nutrient Cycles

Very Coarse Sand
(2.0 mm dia.)

Silt
Silt particle with a 0.02 mm dia.
is 100 times smaller than a Very
Coarse Sand particle.

A Clay particle with a 0.00142
mm diameter, is about 1,408
times smaller than a Very
Coarse Sand particle.

Volume of a ball (2.5 in. dia.)
V = \frac{4}{3} \pi r^3
\pi = 3.14159
r = \text{radius} = 3.175 \text{ cm}
V = \frac{4}{3} \times 3.14159 \times 3.175^3
V = 134.04 \text{ cm}^3

1.0 \text{ cm}^3 = 1.0 \text{ ml}
256.05 \text{ cm}^3 = 256.05 \text{ ml}

15.63 \text{ in.}^3
(Vol. = 256.05 \text{ cm}^3)

Ball Vol. = 134.04 \text{ cm}^3

Vol. of Ball 134.04 \text{ cm}^3
Vol. of Box 256.05 \text{ cm}^3
Ball occupies 52.35% of
the Box's volume

• 125,000 Silt particles (0.02 mm dia.) fit in a 1.0 mm³ cube.
• 349,248,836 Clay particles (0.00142 mm dia.) fit in a 1.0
mm³ cube.

For Illustration/calculation
purposes, soil particles are
spherical:
1,462.65 Clay particles (0.00142
mm dia.) could fit into a spherical
Silt particle with a 0.02 mm dia.

2.5 in. dia.

2.5 in. x 2.5 in. x 2.5 in. = 15.63 \text{ in.}^3
1.0 inch = 2.54 cm
6.35 cm x 6.35 cm x 6.35 cm = 256.05 \text{ cm}^3

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spherical:
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Silt particle with a 0.02 mm dia.

Volume of a ball (2.5 in. dia.)
V = \frac{4}{3} \pi r^3
\pi = 3.14159
r = \text{radius} = 3.175 \text{ cm}
V = \frac{4}{3} \times 3.14159 \times 3.175^3
V = 134.04 \text{ cm}^3

1.0 \text{ cm}^3 = 1.0 \text{ ml}
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Ref.: Soil Organic Matter in Sustainable Agriculture


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