

Lab Worksheet

Soil Type	Average Bulk Density (g/cm ³)
sand	1.2 - 1.8
silt	1.0 – 1.3
clay	0.51 – 1.2

Soil Sample Data	A	B	C
soil weight			
volume of isopropyl alcohol (mL)			
volume of isopropyl alcohol + soil (mL)			
volume of soil (mL) = (volume of isopropyl alcohol + soil) – (volume of isopropyl alcohol)			
Soil density			

Lab Instructions

1. Place a piece of weigh paper on the pan of the triple beam balance.
2. Set the balance to read 0.
3. Place 5.0 g. of soil onto the weigh paper using a plastic spoon.
4. Record in the data table the soil weight.
5. Wash off the plastic spoon with water and dry it completely with a paper towel. Carefully pour 50 mL of isopropyl alcohol into a 100 mL graduated cylinder. Use a plastic pipette to remove or add isopropyl alcohol, as needed.
6. Record in the data table the volume of the isopropyl alcohol added to the 100 mL cylinder.
7. Fill the two plastic pipettes with isopropyl alcohol from the graduated cylinder.
8. Add 1 drop of dishwashing detergent to the isopropyl alcohol in the graduated cylinder.
9. Place the funnel in the top of the graduated cylinder.
10. Transfer the soil on the weigh paper to the graduated cylinder.
11. Use the liquid in the plastic pipettes to wash any soil sticking to the funnel or sides of the graduated cylinder into the liquid in the graduated cylinder.
12. Gently tap the bottom of the graduated cylinder on the tabletop to remove any bubbles from the liquid and help settle the soil to the bottom of the graduated cylinder.
13. Let the soil completely settle to the bottom of the graduated cylinder.
14. Read the volume of the isopropyl alcohol and the soil and record it in the data table.
15. Calculate the density of the soil sample and record it in the data table. Show your calculations.
16. Repeat these steps for two other soil samples.