



# GLOBE

## Soil Particle Size

# Distribution Data Sheets

### Print the **Soil Particle Size Distribution Data Sheet**:

- [Soil Particle Size Distribution Data Sheet](#)
  - This data sheet has space to record observations for one horizon. Print extra copies for each horizon you are sampling.
  - **Data Entry Note:** You will need to add information about each horizon you are sampling before entering your fertility data, from the “Create/Edit My Sites” button. For complete site definition, see the [Soil Characterization Protocol](#).

### Or print the **Particle Size Distribution Data Sheet with the field guide incorporated**:

- [Soil Particle Size Distribution with field guide](#) (2 pages)
  - This option has space to record data for one sample. Print out multiple copies of the “In the Lab” procedure or print out the Particle Size Distribution Data Sheet (linked above) to record data for other samples.

# GLOBE Soil Particle Size Distribution Data Sheet

Name: \_\_\_\_\_ Site Name: \_\_\_\_\_

Date: \_\_\_\_\_ Time (local): \_\_\_\_\_

Horizon # : \_\_\_\_\_

Date of soil collection: \_\_\_\_\_

Top Depth: \_\_\_\_\_ cm | Bottom Depth: \_\_\_\_\_ cm

## Soil Particle Size Distribution Measurements

### Sample 1

Calibrated Hydrometer

Temperature:

\_\_\_\_\_ °C

Distance between 500 mL line to  
base of cylinder:

\_\_\_\_\_ cm

2-Minute Reading		
Temperature:	°C	Hydrometer:
24-hour Reading		
Temperature:	°C	Hydrometer:

### Sample 2

Calibrated Hydrometer

Temperature:

\_\_\_\_\_ °C

Distance between 500 mL line to  
base of cylinder:

\_\_\_\_\_ cm

2-Minute Reading		
Temperature:	°C	Hydrometer:
24-hour Reading		
Temperature:	°C	Hydrometer:

### Sample 3

Calibrated Hydrometer

Temperature:

\_\_\_\_\_ °C

Distance between 500 mL line to  
base of cylinder:

\_\_\_\_\_ cm

2-Minute Reading		
Temperature:	°C	Hydrometer:
24-hour Reading		
Temperature:	°C	Hydrometer:

**Record comments on the back of this page.**

# GLOBE Soil Particle Size Distribution Data Sheet and Field Guide (page 1)

Name: \_\_\_\_\_ Site Name: \_\_\_\_\_

Date: \_\_\_\_\_ Time (local): \_\_\_\_\_

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## Soil Particle Size Distribution Measurements: In the Lab

Horizon # : \_\_\_\_\_

1. Record the soil horizon the sample came from.
2. Record the horizon depths. **Top:** \_\_\_\_\_ cm **Bottom:** \_\_\_\_\_ cm
3. Prepare the dispersing solution by mixing 50 g of Sodium Hexametaphosphate (or other soil dispersing agent such as non-sudsing dishwasher detergent) in 1 L of distilled water. Stir or shake until the dispersing agent has completely dissolved.
4. Weigh 25 g of dried, sieved soil and pour it into a 250 mL or larger beaker.
5. Add 100 mL of the dispersing solution and 50 mL of distilled water to the same beaker. Stir vigorously with a spoon or stirring rod for at least one minute. Be sure the soil is thoroughly mixed and does not stick to the bottom of the beaker. Do not let any of the soil suspension spill out the top. Rinse any soil off the spoon or stirring rod into the beaker using a little distilled water.
6. Let the soil suspension sit for at least 24 hours.
7. While the soil suspension is sitting, measure the distance between the base and the 500 mL mark of the graduated cylinder. Place the meter stick inside the cylinder to get this measurement.

Distance between 500 mL line to base of cylinder: \_\_\_\_\_ cm

8. Read the temperature at which your hydrometer has been calibrated. This value is found on the body of the hydrometer.

Calibrated Hydrometer Temperature: \_\_\_\_\_ °C

9. After at least 24 hours, stir the suspension in the container and pour it into the 500 mL graduated cylinder. Use a squirt bottle to rinse all soil out of the container and into the cylinder.
10. Add enough distilled water to fill the cylinder to the 500 mL mark.

# GLOBE Soil Particle Size Distribution Data Sheet and Field Guide (page 2)

## Soil Particle Size Distribution Measurements: In the Lab, continued

11. Securely cover the top of the cylinder using plastic wrap or other cover. Place your hand over the mouth of the cylinder and mix the soil suspension vigorously by rotating the covered cylinder hand-over-hand at least 10 times. Be sure that the soil is thoroughly mixed in the suspension and that no soil is sticking to the bottom of the cylinder or leaking out of the top.
12. Gently set the cylinder down in a safe place and immediately begin timing with a stopwatch or clock that has a second hand.
13. Record the time that the cylinder was set down to the second: \_\_\_\_\_
14. After 1 minute and 30 seconds has passed, carefully lower (do not drop) the hydrometer into the cylinder and let it float in the soil suspension. Carefully steady the hydrometer to stop its bobbing motion.
15. At exactly 2 minutes after the cylinder was set down, read the line on the hydrometer that is closest to the surface of the soil suspension.

**2-minute reading.** Hydrometer: \_\_\_\_\_

16. Remove the hydrometer, rinse it away from the cylinder, dry it and gently put it down in a safe place.
17. Suspend the thermometer in the suspension for about one minute.
18. At the end of a minute, lift the thermometer from the suspension enough so that you can read the temperature.

**2-minute reading.** Temperature: \_\_\_\_\_ °C

19. Rinse the thermometer off and dry it.
20. Leave the cylinder undisturbed for 24 hours. After 24 hours, take another hydrometer and temperature reading.

**24-hour reading.** Hydrometer: \_\_\_\_\_ Temperature: \_\_\_\_\_ °C

21. Discard the soil suspension by pouring it into a special pail and spill the contents outside in a special place for discarding soil materials.