

MEASURING DECOMPOSITION USING SODA LIME DATA FORM 3: SAMPLES

Complete this form for each soil sample.

Name(s) _____

Today's date _____

Soil sampling ID number _____ Sampling date _____

Soil sampling location _____

Type of area sampled (e.g., forest, schoolyard) _____

Soil description _____

Date and time soda lime incubation started _____

Date and time soda lime incubation ended _____

Total # days incubation (should be 2 days) _____

Protocol 4c, Part 2. Prepare soil samples

Before incubation

Weight of container (without lid) (**G**) = _____ g

Weight of container (without lid) and soil (**H**) = _____ g

Total soil wt (I) = H - G = _____ g

Protocol 4c, Part 3. Prepare soda lime

Before incubation

Weight of petri dish bottom = _____ g

Weight of dish and soda lime before drying = _____ g

Weight of dish and soda lime after drying (**J**) = _____ g

Protocol 4c, Part 5. Calculate the amount of CO₂ produced

After incubation and redrying of the soda lime

Weight of dish and soda lime = _____ g

Weight of dish and soda lime after redrying (**K**) = _____ g

Sample soda lime wt gain (L) = K - J = _____ g

MEASURING DECOMPOSITION USING SODA LIME DATA FORM 3: SAMPLES (*continued*)

Calculating the rate of CO₂ production

1. Calculate the corrected weight gain for soda lime using:

$$\begin{array}{rclcl} \text{Corrected} & & \text{sample} & & \text{blank} \\ \text{soda lime} & = & \text{soda lime} & - & \text{soda lime} \\ \text{wt gain} & & \text{wt gain} & & \text{wt gain} \end{array}$$

$$\begin{array}{rclcl} \mathbf{Y} & = & \mathbf{L} & - & \mathbf{C} \\ \text{_____ g} & = & \text{_____ g} & - & \text{_____ g} \end{array}$$

The answer will be in grams of CO₂ produced. For use in the final equation, you'll need to convert this to milligrams:

$$\text{_____ g} \times 1000 \text{ mg/g} = \text{_____ mg CO}_2$$

2. Calculate the dry weight of the total soil sample (using soil weights from this form and moisture content from Part 1, step 5 on the **Measuring Decomposition Using Soda Lime Data Form 1. Soil Moisture Content**):

$$\text{Dry wt} = \text{total soil wt} - (\text{moisture content} \times \text{total soil wt})$$

$$Z = I - (\text{moisture content} \times I)$$

$$\text{_____ g} = \text{_____ g} - (\text{_____} \times \text{_____ g})$$

This answer will be in grams of dry soil. For use in the final equation, you'll need to convert it to kilograms:

$$\text{_____ g} \times 0.001 \text{ kg/g} = \text{_____ kg dry soil}$$

3. Calculate the rate of CO₂ production in milligrams CO₂ produced per day per kilogram of dry soil. Use your answers from the previous two steps in place of the Y and Z in this equation:

$$\text{CO}_2 \text{ production rate} = \frac{\text{Y mg CO}_2 \times 1.69/\text{days incubated}}{\text{Z kg dry soil}} = \text{_____ mg CO}_2/\text{day/kg dry soil}$$