

OBJECTIVES

- **Investigate** the use of an electroscope.
- **Use** an electroscope and other materials to analyze properties of static electricity.
- **Determine** the number of the kinds of electric charge.

MATERIALS LIST

- roll of cellophane tape
- wool pad
- 2 polystyrene rods
- 2 PVC rods
- demonstration capacitor
- electroscope
- flint glass rod
- insulated copper wire
- insulated wire with 2 alligator clips
- meterstick
- nylon cord
- silk cloth
- silk thread
- support stand with clamp
- suspension support for rod

When objects made of two different materials are rubbed together, electron movement causes a surplus or deficiency of electrons on each object, and hence a net negative or positive charge. When an object has an electric charge, it attracts some things and repels others. In this experiment, you will develop charges on different objects and distinguish between the types of charges. You will also use an electroscope to examine the transfer of charges and the conductivity of different materials.

SAFETY

- **Put on goggles.**
- **Never put broken glass or ceramics in a regular waste container. Use a dustpan, brush, and heavy gloves to carefully pick up broken pieces and dispose of them in a container specifically provided for this purpose.**

PROCEDURE**Preparation**

1. Read the entire lab, and plan what steps you will take.
2. If you are not using a datasheet provided by your teacher, prepare an observation table in your lab notebook with two wide columns. Label the columns *Experiment* and *Observation*. For each part of the lab, you will write a brief description of what you do in each step under *Experiment*. In the *Observation* column, record your observations of what happens.

Electric Charge

3. Cut four strips of cellophane tape 20 cm long. Fold over a tab at the end of each tape. Tape strips to the lab table, and label the strips A, B, C, and D with a pencil.
4. Vigorously rub tapes A and B with a wool pad. Grasp the tabbed ends of A and B and carefully remove the tapes from the table. Slowly bring the tapes close together, but do not allow them to touch. Observe how they affect one another. Record your observations in your lab notebook. Carefully place tapes A and B back on the lab table.