



Substances Too Hazardous for Elementary Schools

The following substances should not be used in the classroom because they present too great a safety hazard.

a. **Acids.** Acids such as hydrochloric, sulfuric, or nitric acid should not be used. Even “dilute” solutions of these acids can cause skin and eye burns. Two acids generally safe to use are vinegar (weak acetic acid) or a weak citric acid solution. When working with acids, always wear chemical splash safety goggles.

b. **Bases.** Sodium hydroxide (lye) and potassium hydroxide are extremely strong bases. Even dilute solutions will irritate the skin and, if splashed in the eyes, may cause injury before one can begin to wash the eye out. For acid-base (pH) activities, the teacher should consider sodium bicarbonate (baking soda) when making a basic solution. When working with bases, always wear chemical splash safety goggles.

c. **Mercury.** Mercury compounds should not be used in the elementary school classroom. Any thermometers or other instruments containing mercury have no place in the elementary classroom and should be properly disposed of. (Mercury thermometers can be identified by their silver colored liquid.) When thermometers are needed, use alcohol-filled thermometers.

d. **Smoke or Vapor Generating Activities.** Smoke of any kind affects the lungs because smoke is composed of particles floating in the air. Vapors released from organic solvents or other chemicals can also affect the lungs. Any classroom demonstration that produces smoke or vapors should be done in a fume hood, near an exhaust fan, or outdoors with students upwind.

e. **Toxic Chemicals.** Toxic chemicals should not be handled by students and are regarded as restricted chemicals. Teachers must obtain technical information on the chemical from the Material Safety Data Sheet (MSDS), the LD₅₀ should not be less than 2,500 mg/kg.

f. **Other Chemicals.** Teachers should use only those chemicals that are approved chemicals for elementary schools by the District Safety Office. In using an approved chemical, teachers must obtain technical information on the chemical from the Material Safety Data Sheet (MSDS) and have approved lesson plans.