

Table 7.4
Categories of Compatible Chemicals

1. **Metals.** All metals except mercury (see item 8). Phosphorus should also be stored here (red only; white or yellow phosphorus is not recommended for school usage). Flammable solids should be stored in the flammables cabinet. *Location:* Keep separate from oxidizers (including ammonium nitrate), halogens, organic compounds, and moisture.

2. **Oxidizers.** All except ammonium nitrate. Includes nitrates, nitrites, permanganates, chlorates, perchlorates, peroxides, and hydrogen peroxide (30 percent or greater). *Location:* Keep separate from metals, acids, organic materials, and ammonium nitrate. Preferably, isolate oxidizers from the flammable liquids storage cabinet by a minimum of eight meters (25 feet) or by a one-hour fire wall.

3. **Ammonium nitrate.** Store in isolation from all other chemicals, especially acids, powdered metals, flammable liquids, chlorates, nitrites, sulfur, and finely divided organic combustible materials.

4. **Bases.** Strong bases—sodium hydroxide, potassium hydroxide, and other regulated bases—and ammonium hydroxide. Store in a dedicated corrosive-chemicals storage cabinet that has an interior constructed entirely of corrosion-resistant materials.

5. **Acids.** Inorganic (except nitric acid) and regulated organic acids. *Location:* Store in a dedicated corrosive-chemicals storage cabinet that has an interior constructed entirely of corrosion-resistant materials.

Table 7.4 (continued)

6. **Nitric acid.** Must be stored separately from acetic acid. *Location:* Store either in an isolated compartment in the acids cabinet or in special Styrofoam containers available for that purpose from vendors of chemicals. Fuming nitric acid should never be used.

7. **Flammables.** Preferably, isolated from all oxidizers by a minimum of eight meters (25 feet) or by a one-hour fire wall. *Location:* Store in a dedicated flammables storage cabinet painted with heat- or flame-resistant paint.

8. **Poisons.** Cyanides (no longer recommended for school programs), mercury and mercury compounds, nicotine, and other poisons. *Location:* Use a lockable drawer remote from the acids storage cabinet.

9. **Compressed gases.** Cylinders must be chained or strapped to the wall, with caps on tight. *Location:* (a) keep oxidizing gases remote from flammable liquids, metals, and flammable gases; (b) keep flammable gases remote from oxidizers and oxidizing gases by a distance of eight meters (25 feet) or by a one-hour fire wall.

10. **Low-hazard chemicals.** Many of the salts not otherwise specified (of course, *not* the nitrates), weak bases, oxides, carbonates, sulfides, dyes, indicators, stains, noncorrosive organic acids, amino acids, sugars, and so forth. Store on open shelves that have earthquake barriers.

Figure 7.1
Sample Layout of Preparation/Storage Area

