# Chapter NR 665

## APPENDIX V

## EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes or gases or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage and disposal facilities, and to enforcement and license granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator shall, as the rules require, adequately analyze that person's wastes in order to avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid), neutralizes them (e.g., a strong acid mixed with a strong base) or controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

| Group 1–A | Group 1–B |
|---|---|
| Acetylene sludge | Acid sludge |
| Alkaline caustic liquids | Acid and water |
| Alkaline cleaner | Battery acid |
| Alkaline corrosive liquids | Chemical cleaners |
| Alkaline corrosive battery fluid | Electrolyte, acid |
| Caustic wastewater | Etching acid liquid or solvent |
| Lime sludge and other corrosive alkalies | |
| Lime wastewater | Pickling liquor and other corrosive acids |
| Lime and water | Spent acid |
| Spent caustic | Spent mixed acid |
| | Spent sulfuric acid |

Potential consequences: Heat generation; violent reaction.

| Group 2–A | Group 2–B |
|---|---|
| Aluminum | Any waste in Group 1–A or 1–B |
| Beryllium | |
| Calcium | |
| Lithium | |
| Magnesium | |
| Potassium | |
| Sodium | |
| Zinc powder | |
| Other reactive metals and metal hydrides | |

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

| Group 3–A | Group 3–B |
|---|---|
| Alcohols | Any concentrated waste in Group 1–A or 1–B |
| Water | Calcium |
| | Lithium |
| | Metal hydrides |
| | Potassium |
| | $SO_2Cl_2$, $SOCl_2$, $PCl_3$, $CH_3SiCl_3$ |
| | Other water–reactive waste |

Potential consequences: Fire, explosion or heat generation; generation of flammable or toxic gases.

| Group 4–A | Group 4–B |
|---|---|
| Alcohols | Concentrated Group 1–A or 1–B wastes |
| Aldehydes | Group 2–A wastes |
| Halogenated hydrocarbons | |
| Nitrated hydrocarbons | |
| Unsaturated hydrocarbons | |
| Other reactive organic compounds and solvents | |

Potential consequences: Fire, explosion or violent reaction.

| Group 5–A | Group 5–B |
|---|---|
| Spent cyanide and sulfide solutions | Group 1–B wastes |

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

| Group 6–A | Group 6–B |
|---|---|
| Chlorates | Acetic acid and other organic acids |
| Chlorine | Concentrated mineral acids |
| Chlorites | Group 2–A wastes |
| Chromic acid | Group 4–A wastes |
| Hypochlorites | Other flammable and combustible wastes |
| Nitrates | |
| Nitric acid, fuming | |
| Perchlorates | |
| Permanganates | |
| Peroxides | |
| Other strong oxidizers | |

Potential consequences: Fire, explosion or violent reaction.

**Note:** The source of this appendix is "Law, Regulations, and Guidelines for Handling of Hazardous Waste", California department of health, February 1975.