

Top 10 Incompatible Chemicals

When incompatible chemicals are stored very closely in a chemical storage unit, it may result in violent reactions such as fires, explosions and toxic release. Incorrect storage of incompatible chemicals is one of the most common causes of chemical accidents. It is important to ensure that any incompatible chemicals are stored at least 10 feet away from each other, and at least 15 feet away if there is a risk of a violent reaction. There are many sets of chemicals which should never be stored together. Below is a list of 10 of the most commonly used chemicals and the incompatible chemicals which should not be stored with them.

1. *Sodium hypochlorite*

Sodium hypochlorite (bleach) is a common disinfectant, is widely used in chemical manufacturing, paper production, and food processing. Sodium hypochlorite that is used in industrial settings is often much stronger than the form used for household applications. Sodium hypochlorite should never be stored with or in a manner it may come into contact with **strong acids, ammonia or materials containing ammonia, or strong oxidizing agents**.

2. *Chlorine*

Chlorine is a compressed gas that is also frequently used in chemical manufacturing. Chlorine should never be stored with **ammonia, any flammable compressed gasses (especially acetylene and hydrogen), benzene, butadiene, any petroleum gases, sodium carbide and turpentine**.

3. *Acetone*

Acetone is often used to clean down surfaces in laboratories and manufacturing plants. Acetone should not be stored in a chemical storage cabinet which holds **bromine, chlorine, nitric acid, sulfuric acid, or hydrogen peroxide**.

4. *Iodine*

Iodine is a chemical used in schools, universities and several workplaces. Its primary uses are to test for the presence of starch and to serve as a disinfectant. It should not be stored with acetylene, ammonia and hydrogen.

5. *Caustic Soda*

Caustic soda (Sodium hydroxide) is commonly used in farming, food processing, and chemical manufacturing. It is also used in households and restaurants for cleaning purposes. Caustic soda should not be stored near **any acids** in a chemical storage cabinet.

6. *Nitric Acid*

Nitric acid has several different purposes but is commonly used in manufacturing and chemical laboratories to etch metal, as well as being a component of explosives and fertilizers. Nitric acid should be stored in a chemical store away from substances such as **acetone, acetic acid, alcohol, chromic acid, aniline, hydrocyanic acid, hydrogen sulfide and any flammable substances**.

7. *Hydrogen Peroxide*

This chemical is used for several different purposes. In the household, it is used as a cleaner and for treating wounds. It is used primarily in manufacturing in pulp and paper bleaching. It is also used in the manufacture of laundry detergents. Hydrogen peroxide should never be stored with **copper, chromium, iron, most metals or their salts, alcohols, acetone, organic materials, aniline, nitromethane, flammable liquids, ammonia and oxidizing gases**.

8. *Zinc Powder*

This substance is widely used in the manufacturing of many products including paint, cosmetics and batteries. It is also used as a reducing agent and for casting molds. Zinc powder should not be stored near **Sulphur**.

9. *Mercury*

Mercury is used in products such as thermometers and barometers, as well as in fluorescent lamps and dental amalgams. Compounds of mercury are also used to develop certain medicines. Mercury should never be stored near **acetylene, fulminic acid and ammonia**.

10. *Oxygen*

Oxygen is used in metal cutting, to facilitate oxy-acetylene welding. It is also heavily used in the iron and steel industries, to smelt iron ores into steel. Oxygen is also used for a host of purposes in chemical manufacturing. It is used as a compound to create antifreeze and polyester primers and in several medical applications and in water treatment. Oxygen should be stored away from substances such as **oils, grease and hydrogen and any flammable liquids, solids, or gases** in a chemical store.

This list covers only some of the most commonly used chemicals and is not meant as a definitive list. To ensure safe storage of substances in your chemical store, also refer to the Safety Data Sheet.