

## Two Groups of Hazards

### Physical Hazards

#### Flammable Liquids and Combustible Liquids

Any liquid having a flashpoint below 100 deg. F (37.8 deg. C°), except any mixture having components with flashpoints of 100 deg. F° (37.8 deg. C°) or higher, the total of which make up 99 percent or more of the total volume of the mixture

**Examples:** Isopropyl alcohol, Acetone

#### Compressed Gases

1. A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 deg. F° (21.1 deg. C°)
2. A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 deg. F° (54.4 deg. C°) regardless of the pressure at 70 deg. F° (21.1 deg. C°)
3. A liquid having a vapor pressure exceeding 40 psi at 100 deg. F° (37.8 deg. C°) as determined by ASTM D-323-72

**Examples:** Oxygen, Chlorine, Nitrous Oxide, Acetylene, Liquid Nitrogen

#### Explosives

A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature

**Examples:** Nitroglycerin, dry picric acid

#### Organic peroxides

An organic compound that contains the bivalent -O-O-structure and which may be considered a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical

**Example:** Dry picric acid

#### Reactives

A chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature

**Examples:** Alkali metals, some hydrides, phosphorus, sodium

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### Oxidizers

A chemical, other than a blasting agent or explosive as defined in 29CFR1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases

**Examples:** Potassium permanganate, sodium nitrate, nitrites, chlorates

### Health Hazards

#### Carcinogens

A chemical is considered to be a carcinogen if:

- it has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen; or
- it is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or,
- it is regulated by OSHA as a carcinogen.

**Examples:** Benzene, Carbon tetrachloride

#### Reproductive Toxins

Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis)

**Examples:** Ethylene oxide, lead

#### Irritants

A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact

**Examples:** Sodium hydroxide, Potassium hydroxide, Hydrochloric acid

#### Corrosives

A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact (This term shall not refer to action on inanimate surfaces.)

**Examples:** Acetyl bromide, Potassium hydrogen sulfate, Sulfur chlorides, Zinc chloride, solution

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### Sensitizers

A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical

**Example:** Formaldehyde (CH<sub>2</sub>O)

### Hepatotoxin

A chemical which produces liver damage

**Examples:** Acetylene tetrachloride, Ethylene bromide

### Nephrotoxins

A chemical which produces kidney damage

**Example:** Naproxen Sodium (Ibuprofen), Uranium