

Be aware that every chemical substance you handle during the day, whether it is a liquid, solid, vapor, or dust, could cause you great harm if you aren't protected. Your first line of defense is knowing what each chemical can do to you physically and how it can affect your health. With that knowledge tucked under your toolbelt, you can take correct precautions.

Physical hazards

OSHA found that many chemicals cause fires and explosions. These chemicals are physical hazards. Here are the chemical categories which are considered physical hazards, based on scientific evidence:

- Flammable, combustible, or explosive material.
- Compressed gas.
- Organic peroxide.
- Oxidizer.
- Pyrophoric (spontaneously igniting substance).
- Unstable (reactive) or water-reactive material.

Health hazards

OSHA found that many chemicals cause health conditions including heart ailments, lung, liver, and kidney damage, cancer, reproductive problems, burns, and dermatitis.

Such health effects can be acute or chronic.

Acute health effects are those which appear rapidly after a brief exposure to the chemical(s).

Chronic health effects are those which appear during and/ or after long-term exposure to a chemical(s).

If there is enough evidence that exposure to a chemical causes acute or chronic health effects, that chemical is a health hazard. Many chemicals are health hazards.

Here are the general chemical categories that are health hazards:

- Carcinogens (cancer-causers) like benzene and formaldehyde.
- Toxic agents like lawn and garden insecticides and arsenic compounds.
- Irritants like bleaches or ammonia.
- Corrosives like battery acid or caustic sodas.
- Sensitizers like creosote or epoxy resins.
- Reproductive toxins like thalidomide or nitrous oxide.
- Organ-specific agents like sulfuric acid (affects skin) or asbestos (affects lungs).

You can determine chemical hazards by looking at the chemical's label and/or its material safety data sheet (MSDS). To minimize exposure, follow the directions you will find there.

Protect yourself by understanding MSDSs and chemical labels, wearing appropriate personal protective equipment like gloves and goggles, following appropriate safe work practices, and knowing proper emergency response. Talk to your safety director about these methods of protection.

This document provides general information about a safety and health topic and is only intended for use in facilitating discussions with employees in safety meetings. It does not address all hazards, OSHA or local requirements related to the topic or accompanying photograph. This document cannot be relied on to determine whether a site specific situation meets all safety and health requirements. Assurance Safety Consulting is not responsible for any health and safety violation or injury at a job site.