DEPARTMENT OF
ENVIRONMENTAL HEALTH AND SAFETY

EHS Fact Sheet
Oxidizers

Oxidizing Materials
For lab safety purposes, an oxidizing material (or oxidizer) is defined as a material that may, generally by yielding oxygen, cause or enhance the combustion of other materials (combustible or flammable materials).

Examples of Oxidizing Materials:
- Nitrates and nitrites
- Bromates
- Chlorates and perchlorates
- Chlorites and hypochlorite's
- Persulfates
- Chromates and dichromate's
- Permanganates
- Inorganic peroxides
- Bleach
- Hydrogen peroxide
- Perchloric acid
- Nitric acid
- Oxygen

An organic peroxide is an oxidizing material that is an inherently unstable compound containing both oxygen and a fuel. Organic peroxide examples include ketone and benzoyl peroxides.

Hazards
The primary hazard of oxidizing materials is the ability to cause, enhance, or support combustion of combustible or flammable materials. This reaction may be spontaneous at room temperature or may occur with slight heating. An oxidizer can cause materials that do not normally burn readily in air to burn rapidly.

GHS Pictogram for Oxidizing Materials/Oxidizers

Depending on the oxidizing material, the oxidizer can be:
- Corrosive (either acidic or basic)
- Toxic
- Irritant
- Shock sensitive if it's an organic peroxide

For compound-specific hazards, please consult the safety data sheet for additional information.

Usage
- As with any hazardous material, the lab needs to incorporate the hazards and safe handling procedures in the lab operating procedures/protocols.
- As with all lab procedures/protocols, the PI must ensure all lab personnel have been trained and the training documented.
- Wear appropriate PPE such as chemical safety goggles, gloves and lab coat.
- Use engineering controls such as fume hoods.
- Segregate from combustible and flammable materials.
- Store organic peroxides by themselves.
- For compound-specific usage, always consult the safety data sheet.

Spills
- Clean up small spills using absorbent material.
- Wear appropriate PPE and have adequate ventilation.
- Avoid combustible or flammable materials.
- Collect clean up material for waste disposal.
- For large spills, evacuate the area and contact EHS.

Disposal
Oxidizer waste needs to routed through the EHS Materials Management section. Please contact EHS for more information.

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