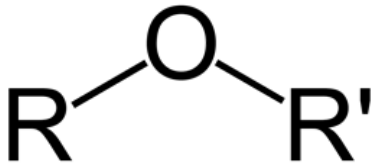
DEPARTMENT OF
ENVIRONMENTAL HEALTH AND SAFETY

EHS Fact Sheet
Peroxide Formers

A significant number of laboratory solvents can undergo autoxidation under normal storage conditions to form unstable and potentially dangerous peroxide-by-products. Peroxide formers, generally ethers, are materials which react with oxygen to form peroxides that can explode under impact, heat, or friction. They are capable of causing serious injury or death, and for this reason, it is imperative that all researchers learn to safely handle peroxide forming compounds.

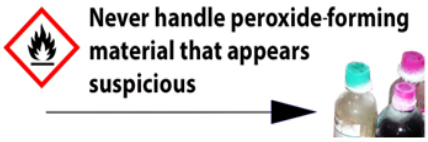


Hazard Categories

Class A: Compounds that can spontaneously decompose during storage.
-Maximum storage is 3 months.
-Examples include divinyl ether, isopropyl ether, potassium metal, sodium amid and vinylidene chloride.

Class B: Compounds that require the addition of a certain amount of energy to explosively decompose.
-Maximum storage is 12 months.
-Examples include acetyl, cyclohexene, diacetylene, dicyclopentadiene, diethyl ether, dioxanes, 1,2-dimethoxyethane, methyl acetylene, methyl cyclopentane, methyl isobutylketone, tetrahydrofuran, vinyl ethers and tetrahydronapthalene.

Class C: Compounds that have the potential to form peroxide polymers, which is a dangerous form that can precipitate easily are extremely heat and shock-sensitive.
-Maximum storage is 12 months.
-Examples include acrylic acid, acrylonitrile, butadiene, chloroprene, styrene, vinyl chloride, chlorotrifluoroethylene, methyl methacrylate, tetrafluroethylene, vinyl acetate, and vinyl pyridine.



Emergency Procedures

Eye or skin exposure: Wash the area for at least 30 minutes using a safety shower or eyewash station.

Ingestion: Call 911 and do not induce vomiting unless otherwise directed.

Inhalation: Move from exposure to fresh air Regardless of the exposure, seek medical attention!

Chemical Management and Safe Handling

- Minimize quantity of peroxide forming chemicals in the lab.
- Date all peroxidizables upon receipt and opening. EHS has example labels for use.
- Periodically test contents for peroxides using peroxide test strips; record the test date and results on the container
- Segregate them from incompatible materials such as oxidizers, halogens, reducing agents, static electricity, and sources of heat.
- Do not open containers with evidence of peroxide formation, which can include crystal formation around the lid or in the liquid, or any visible discoloration.
- Contact EHS for disposal at expiration date or when there are signs of peroxide formation.
- Never work alone with peroxidizables.

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