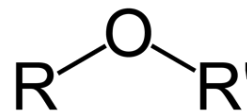




A significant number of laboratory solvents can undergo autoxidation under normal storage conditions to form unstable and potentially dangerous peroxide-by-products. Peroxide formers, generally ethers, are materials which react with oxygen to form peroxides that can explode under impact, heat, or friction. 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: Divinyl ether, isopropyl ether, potassium metal, sodium amide, vinylidene chloride

Class B: Compounds that require the addition of a certain amount of energy to explosively decompose

-Maximum storage is 12 months

-Examples: acetyl, cyclohexene, diacetylene, dicyclopentadiene, diethyl ether, dioxanes, 1,2-dimethoxyethane, methyl acetylene, methyl cyclopentane, methyl isobutylketone, tetrahydrofuran, vinyl ethers, tetrahydronaphthalene

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: acrylic acid, acrylonitrile, butadiene, chloroprene, styrene, vinyl chloride, chlorotrifluoroethylene, methyl methacrylate, tetrafluoroethylene, vinyl acetate, vinyl pyridine

Emergency Procedures

- Eye/skin exposure wash area for at least 30 minutes using safety shower/eyewash
- Ingestion call 911, do not induce vomiting unless otherwise directed
- Inhalation move from exposure to fresh air.

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 label
- Periodically test contents for peroxides using peroxide test strips; record test date and results on the container
- Segregate from incompatible materials such as oxidizers, halogens, reducing agents, static electricity, and sources of heat.
- Do not open containers with evidence of peroxide formation (crystal formation around the lid or in the liquid, or any visible discoloration)
- Dispose of at expiration date, or when there are signs of peroxide formation
- Never work alone with peroxidizables



Never handle peroxide-forming material that appears suspicious

