

Many of the organic solvents commonly used at Stony Brook University (SBU) have the potential to form explosive peroxide crystals. There are four classes of peroxide forming chemicals that must be properly handled, stored and labeled; they are:

Class A – Severe Peroxide Hazard (dispose within 3 months after opening*)

Spontaneously decompose and may become explosive with exposure to air.

- Butadiene (liquid monomer)
- Isopropyl ether
- Sodium amide (sodamide)
- Chloroprene (liquid monomer)
- Potassium amide
- Tetrafluoroethylene (liquid monomer)
- Divinyl acetylene
- Potassium metal
- Vinylidene chloride

Class B – Concentration Hazard (test for peroxide formation or dispose within 6 months after opening*)**

Require external energy for spontaneous decomposition. Form explosive peroxides when distilled, evaporated or otherwise concentrated.

- Acetal
- Diethylene glycol dimethyl ether (diglyme)
- 4-Methyl-2-pentanol
- Acetaldehyde
- Diethyl ether
- 2-Pentanol
- Benzyl alcohol
- Dioxanes
- 4-Penten-1-ol
- 2-Butanol
- Ethylene glycol dimethyl ether (glyme)
- 1-Phenylethanol
- Cumene
- Furan
- 2-Phenylethanol
- Cyclohexanol
- 4-Heptanol
- 2-Propanol
- Cyclohexene
- 2-Hexanol
- Tetrahydrofuran
- 2-Cyclohexen-1-ol
- Methylacetylene
- Tetrahydronaphthalene
- Decahydronaphthalene

- 3-Methyl-1-butanol
- Vinyl ethers
- Diacetylene
- Methylcyclopentane
- Other secondary alcohols
- Dicyclopentadiene
- Methyl isobutyl ketone

Class C – Shock and Heat Sensitive (dispose within 6 months after opening*)

Highly reactive and can auto-polymerize as a result of internal peroxide accumulation. The peroxides formed in these reactions are extremely shock and heat sensitive.

- Acrylic acid
- Chlorotrifluoroethylene
- Vinyl acetate
- Acrylonitrile
- Methyl methacrylate
- Vinylacetylene (gas)
- Butadiene (gas)
- Styrene Vinylpyridine
- Vinyladiene chloride
- Chloroprene
- Tetrafluoroethylene (gas)
- Vinyl chloride (gas)

Class D – Potential Peroxide Forming Chemicals (dispose if peroxide crystals are present*)

May form peroxides but cannot be clearly categorized in Class A, B, or C.

*Manage as hazardous chemical waste. Contact the SBU Environmental Health and Safety Department @ 2-6410 to coordinate the proper disposal of these chemicals.

Note: If crystals are present or if liquid has been allowed to evaporate, do not touch or move the container.

**These chemicals (Class B Peroxide-Forming Chemicals) may be tested for peroxides using kits available from chemical suppliers. If tested and no peroxides are present, the chemical label may be re-dated and initialed, and the chemical kept for an additional 6 months.

REMEMBER - Date all peroxide-forming compounds when received and when opened.