Types of Compounds Known to Autooxidize to Form Peroxides

- Aldehydes
- Ethers, especially cyclic ethers and those containing primary and secondary alkyl groups (never distill an ether before it has been shown to be free of peroxide)
- Compounds containing benzylic hydrogens
- Compounds containing allylic hydrogens (C=C-CH), including most alkenes; vinyl and vinylidene compounds
- Compounds containing a tertiary C-H group (e.g., decalin and 2,5-dimethylhexane)

Classes of Chemicals That Can Form Peroxides Upon Aging

Class I: Unsaturated materials, especially those of low molecular weight, may polymerize violently and hazardously due to peroxide initiation.

Acrylic acid	Methyl methacrylate	Vinyl chloride
Acrylonitrile	Styrene	Vinyl pyridine
Butadiene	Tetrafluoroethylene	Vinylidene chloride
Chlorobutadiene (chloroprene)	Vinyl acetate	
Chlorotrifluoroethylene	Vinyl acetylene	

Class II: The following chemicals are a peroxide hazard upon concentration (distillation/evaporation). A test for peroxide should be performed if concentration is intended or suspected.

Acetal	Dicyclopentadiene	Methyl acetylene
Cumene	Diethylene glycol dimethyl ether (diglyme)	Methyl cyclopentane
Cyclohexene	Diethyl ether	Methyl-i-butyl-ketone
Cyclooctene	Dioxane (p-dioxane)	Tetrahydrofuran
Cyclopentene	Ethylene glycol dimethyl ether (glyme)	Tetrahydronaphthalene
Diacetylene	Furan	Vinyl ethers

Class III: Peroxides derived from the following compounds may explode without concentration.

Organic	**Inorganic**
Divinyl ether	Potassium metal
Divinyl acetylene	Potassium amide
Isopropyl ether	Sodium amide (sodamide)
Vinylidene chloride	