

Potential Peroxide-Forming Chemicals

GROUP A: Chemicals that form explosive levels of peroxides without concentration. Severe peroxide hazard after prolonged storage, especially after exposure to air. All have been responsible for fatalities. Test for peroxide formation before using or discard after 3 months.

Butadiene ^a	Isopropyl ether	Sodium amide
Chloroprene ^a	Potassium amide	Tetrafluoroethylene ^a
Divinyl acetylene	Potassium metal	Vinylidene chloride

GROUP B: Peroxide hazards on concentration. Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.

Acetal	Dicyclopentadiene	2-Pentanol
Acetaldehyde	Diethylene glycol dimethyl-ether (diglyme)	4-Penten-1-ol
Benzyl alcohol	Diethyl ether	1-Phenylethanol
2-Butanol Dioxanes	Ethylene glycol ether acetates (cellosolves)	2-Phenylethanol
Chlorofluoroethylene	Furan	Tetrahydrofuran
Cumene (isopropylbenzene)	4-Heptanol	Tetrahydronaphthalene
Cyclohexene	2-Hexanol	Vinyl ethers
2-Cyclohexen-1-ol	Methyl acetylene	Other secondary alcohols
Cyclopentene	3-Methyl-1-butanol	
Decahydronaphthalene (decalin)	Methyl-isobutyl ketone	
Diacetylene (butadiyne)	4-Methyl-2-pentanol	

GROUP C: Chemicals, which are hazardous due to, peroxide initiation of autopolymerization. The peroxide-forming potential increases for liquids of this group, especially for butadiene, chloroprene and tetrafluoroethylene, such that these materials should be considered as a peroxide hazard. *Test for peroxide formation or discard liquids after 6 months; discard gases after 1 year.*

Butadiene ^a	Chlorotrifluoroethylene	Vinyl acetylene
Chlorobutadiene	Styrene	Vinyl chloride
Chloroprene ^a	Tetrafluoroethylene	Vinyl pyridine
Vinyl acetate	Vinylidene chloride	

^aWhen stored as a liquid monomer. ^bCan form explosive levels of peroxides when stored as liquid. Peroxide accumulation may cause autopolymerization when stored as gas.

Reference from: Clark, D.E., *Peroxides and Peroxide – Forming Compounds, Chemical Health and Safety*, 2001, 8 (5), 12-21.