

Appendix F – Peroxide Forming Chemicals Common to Research

Below is a table of peroxide-forming chemicals grouped by specific hazard description.

Table F.1 – Common Peroxide-Forming Chemicals

Group A – Chemicals that form explosive levels of peroxide without concentration		
Safe Storage Time After Opening – 3 months		
Chemical Name	CAS Number	Synonym(s)
1,1-Dichloroethylene	75-35-4	Vinylidene Chloride
2-Chloro-1,3-Butadiene ^{1,3}	126-99-8	Chloroprene
Butadiene ^{1,3}	106-99-0	
Divinyl acetylene	821-08-9	
Isopropyl ether	108-20-3	
Tetrafluoroethylene	116-14-3	
Vinyl ether	109-93-3	Divinyl ether
Group B – Chemicals that form explosive levels of peroxides on concentration		
Safe Storage Time After Opening – 12 months		
Chemical Name	CAS Number	Synonym(s)
2-Butanol	78-82-2	
2-Cyclohexan-1-ol	822-67-3	
2-Hexanol	626-93-7	
2-Pentanol	6032-29-7	
3-Methyl-1-Butanol	123-51-3	
4-Heptanol	589-55-9	
4-Methyl-2-Pentanol	108-11-2	
Acetal	105-57-7	
Acetaldehyde	75-07-0	
alpha-Methyl-Benzyl Alcohol	98-85-1	Phenyl ethanol
Benzyl alcohol	2100-51-6	
Cyclohexanol	108-93-0	
Cyclohexene	110-83-8	
Cyclooctene	931-87-3	
Cyclopentene	42-29-0	

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Decahydronaphthalene	91-17-8	
Diacetylene	460-12-8	
Dicyclopentadiene	77-73-6	
Dioxane	123-91-1	1,4 Dioxane
Diethylene glycol Dimethyl ether	110-71-4	Diethylene Glycol, Dimethyl Ether, and Glyme
Ethyl ether	60-29-7	Diethyl ether
Furan	110-71-4	
Isopropyl benzene	98-82-8	Cumene
Methylcyclopentane	96-37-7	
Methyl Isobutyl Ketone	108-10-1	
Penten-1-ol	821-09-0	
Propyne	74-99-7	Methyl Acetylene
Tetrahydrofuran	109-99-9	
Tetrahydronaphthalene	119-64-2	
Group C – Chemicals which may autopolymerize as a result of peroxide accumulation Safe Storage Time After Opening (inhibited chemicals) – 12 months Safe Storage Time After Opening (uninhibited chemicals) – 24 hours Note: Do not store inhibited chemicals in this group under inert atmospheres		
Chemical Name	CAS Number	Synonym(s)
1,1-Dichloroethylene	75-35-4	Vinylidene Chloride
2-Chloro-1, 3-Butadiene 1,3	126-99-8	
Acrylic Acid 2	79-10-7	
Acrylonitrile 2	107-13-1	
Butadiene 1,3	106-99-0	
Buten-3-yne	689-97-4	Vinyl acetylene & Butenyne
Chlorotrifluoroethylene	79-38-9	
Methyl Methacrylate 2	80-62-6	
Phenethyl alcohol	60-12-8	Phenyl ethanol
Styrene	100-42-5	
Tetrafluoroethylene	116-14-3	
Vinyl Acetate	108-05-4	
Vinyl chloride	75-01-4	Monochloroethylene