



CHEMICALS THAT CAN FORM EXPLOSIVE PEROXIDES

Topic:
Explosive
chemicals

Date:
11/01/2016

Page:
1 of 6

Chemicals that can form explosive peroxides can be divided into three classes, depending on the risk they pose and the length of time for which they have been stored. You should be aware that the lists are not exhaustive. There may be substances that can form peroxides but are not listed in any of the tables. The column marked "Labelling" is for guidance purposes; for example, if the substance is supplied in suspension the R-phrases may vary somewhat.

Category 1.

Solvents and chemicals where dangerous levels of explosive peroxides may form during storage without being concentrated, i.e. without evaporation. Peroxides are formed only because the substance has been exposed to air.

Recommended storage time in unopened state: 1 year

Recommended storage time once opened: 3 mnths.

Check for formation of peroxides after opening: every 3 mnths.

Recommended to be sent as hazardous waste after: 6 mnths.

Name	CAS no.	Formula	Labelling
1,3-Butadiene (Butadiene)	106-99-0	CH ₂ CHCHCH ₂ liquid	H224 Carc 1A H350 Muta 1B H340
2-Chloro-1,3 butadiene (Chloroprene; Neoprene)	126-99-8	CH ₂ CCICHCH ₂	H225 H332 H302 H319
1,1-Dichloroethylene (Vinylidene chloride)	75-35-4	Cl ₂ CCH ₂	H224 H332 H371
Diisopropyl ether (Isopropyl ether)	108-20-3	(CH ₃) ₂ CHOCH(CH ₃) ₂	H225 EUH319 EUH066 H336
Divinyl acetylene	31014-03-6	CH ₂ CHCCCHCH ₂	
Potassium amide		KNH ₂	
Potassium metal	07/09/7440	K	EUH014 H260 H314
Sodium amide (Sodamide)	7782-92-5	NaNH ₂	EUH014 H260 EUH319 H314
Tetrafluoroethylene	116-14-3	F ₂ CCF ₂	

Category 2.

Solvents and chemicals where dangerous levels of explosive peroxides may form when becoming concentrated, e.g. by evaporation or distillation.

Recommended storage time in unopened state: 18 mnths.

Recommended storage time once opened: 6 mnths.

Check for formation of peroxides after opening: every 3 mnths. Recommended to be sent as hazardous waste after: 12 mnths.



CHEMICALS THAT CAN FORM EXPLOSIVE PEROXIDES

Topic:
Explosive
chemicals

Date:
11.01.16

Page:
2 of 6

Name	CAS no.	Formula	Labelling
Benzyl alcohol	100-51-6	 (C ₆ H ₅)CH ₂ OH	H332 H302
Bis(2-methoxy ethyl)ether (Diethylene glycol dimethyl ether; diglyme	111-96-6	CH ₃ OCH ₂ CH ₂ OCH ₂ CH ₂ OCH ₃	H226 EUH019 Repr 1B H360F Repr 1B H360D
1,3-Butadiyne (Diacetylene; Buta-1,3-diyne)	460-12-8	CHCCCH	
Butyl vinyl ether (1-(ethenoxy)butane; Vinyl n-butyl ether)	111-34-2	CH ₃ CH ₂ CH ₂ CH ₂ OCHCH ₂	H225 EUH319
Cyclohexanol	108-93-0	C ₆ H ₁₁ OH	H332 H302 H335 H315
Cyclohexene	110-83-8	C ₆ H ₁₀	H225 H311 H302
Cyclopentene	142-29-0	C ₅ H ₈	H225 H312 H302 H319 H335 H315 H412 H413
Decahydronaphthalene (cis/trans mixture) (Decalin)	91-17-8	C ₁₀ H ₁₈	H332 H314 H411 H413
Dicyclopentadiene (1,3-Cyclopentadiene; 3a,4,7,7a-tetrahydro-4,7- methanoindene)	77-73-6	 C ₁₀ H ₁₂	H225 H332 H302 H319 H335 H315 H411
1,1-Diethoxyethane (Acetal; Acetaldehyde diethyl acetal	105-57-7	 CH ₃ CH ₂ OC(CH ₃)OCH ₂ CH ₃	H225 H319 H315







CHEMICALS THAT CAN FORM EXPLOSIVE PEROXIDES

Topic:
Explosive
chemicals

Date:
11/01/2016

Page:
3 of 6

Diethyl ether (Ether; Ethyl ether)	60-29-7	$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$	H224 EUH019 H302 EUH066 H336
1,2-Dimethoxyethane (Ethylene glycol dimethyl ether; glyme)	110-71-4	$\text{CH}_3\text{OCH}_2\text{CH}_2\text{OCH}_3$	H225 EUH019 H332 H360FD
1,2-Dioxane (o-Dioxane)	5703-46-8	 $\text{C}_4\text{H}_8\text{O}_2$	
1,3-Dioxane (m-Dioxane)	505-22-6	 $\text{C}_4\text{H}_8\text{O}_2$	H225 EUH019 H332 H312 H302
1,4-Dioxane (p-Dioxane; Dioxane)	123-91-1	 $\text{C}_4\text{H}_8\text{O}_2$	H225 EUH019 H319 H335 Carc 2 H340 EUH066
Divinyl ether (Vinyl ether)	109-93-3	$\text{CH}_2\text{CHOCHCH}_2$	
Ethyl vinyl ether (Ethoxyethene; Vinyl ethyl ether)	109-92-2	$\text{CH}_3\text{CH}_2\text{OCHCH}_2$	H225 EUH019 H319 H335 H315
4-Heptanol	589-55-9	$\text{CH}_3(\text{CH}_2)_2\text{CH}(\text{OH})(\text{CH}_2)_2\text{CH}_3$	
2-Hexanol	626-93-7	$\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$	H226 H319 H335 H315
3-Methyl-1-butanol (Isoamyl Alcohol; 3-Methylbutanol)	123-51-3	$(\text{CH}_3)_2\text{CHCH}_2\text{CH}_2\text{OH}$	H226 H302 H335 H315 H318
Methylcyclopentane	96-37-7	 C_6H_{12}	H225 H302 H319 H335 H315 H304
4-Methyl-2-pentanol (Methyl Isobutyl Carbinol; sec-Hexyl Alcohol)	108-11-2	$(\text{CH}_3)_2\text{CHCH}_2\text{CH}(\text{OH})\text{CH}_3$	H226 H335



CHEMICALS THAT CAN FORM EXPLOSIVE PEROXIDES

Topic:
Explosive
chemicals

Date:
11/01/2016

Page:
4 of 6

Methyl isobutyl ketone (2-methyl-4-pentanone)	108-10-1	$\text{CH}_3\text{COCH}_2\text{CH}(\text{CH}_3)_2$	H225 H332 H319 H335 EUH066
2-Pentanol (sec-Amyl Alcohol; Pentan-2-ol)	6032-29-7	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$	H226 H332
4-Penten-1-ol	821-09-0	$\text{CH}_2\text{CHCH}_2\text{CH}_2\text{CH}_2\text{OH}$	H226
1-Phenylethanol (alpha-Methylbenzyl alcohol; 1-phenylethan-1-ol)	98-85-1	 $\text{C}_8\text{H}_{10}\text{O}$	H302 H315 H318
2-phenylethanol (Phenethyl alcohol; 1-Phenyl-2-ethanol; Hydroxyethylbenzene)	60-12-8	$\text{C}_8\text{H}_{10}\text{O}$	H312 H302 H319 H315
2-Phenylpropane (Cumene; Methyl ethyl benzene; Isopropylbenzene;	98-82-8	 $\text{CH}_3\text{CH}(\text{C}_6\text{H}_5)\text{CH}_3$	H226 H335 H411 H413 H304
2-Propanol (Isopropanol; Isopropyl alcohol)	67-63-0	$\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$	H225 H319 H336
1-Propyne (Methyl acetylene)	74-99-7	CH_3CCH	H220 H280 H335
Tetrahydrofuran (1,4-Epoxybutane)	109-99-9	 $\text{C}_4\text{H}_8\text{O}$	H225 EUH019 H319 H335
1,2,3,4- Tetrahydronaphthalene (Tetrahydronaphthalene; Tetralin)	119-64-2	 $\text{C}_{10}\text{H}_{12}$	EUH019 H319 H315 H411 H413



CHEMICALS THAT CAN FORM EXPLOSIVE PEROXIDES

Topic:
Explosive
chemicals

Date:
11/01/2016

Page:
5 of 6

Category 3.


Solvents and chemicals where peroxides may be formed by polymerisation. Recommended storage time in unopened state: 18 mnths.

Recommended storage time once opened: 6 mnths.

Check for formation of peroxides after opening: every 3 mnths.

Recommended to be sent as hazardous waste after:

12 mnths.

Name	CAS no.	Formula	Labelling
Acrylic acid (2-Propenoic acid, Vinylformic Acid)	79-10-7	CH ₂ CHCOOH	H226 H332 H312 H302 H314 H400
Acrylonitrile (2-Propenenitrile)	107-13-1	CH ₂ CHCN	H225 H330 H311 H301 H335 H315 H318 H317 Carc1A H350 H411
Butadiene (1,3-butadiene)	106-99-0	CH ₂ CHCHCH ₂	GASS H220 Carc 1A H350 Muta 1B H340
Chloroprene (2-Chloro-1,3- butadiene. Neoprene)	126-99-8	CH ₂ CClCHCH ₂	H224 H332 H302 H319
Chlorotrifluoroethylene (Trifluorochloroethylene, Trifluorovinyl Chloride)	79-38-9	CF ₂ CFCI	GASS H220 H331
Methyl methacrylate, (Methyl 2-Methyl-2- Propenoate, 2- Methylacrylic acid methyl ester, Methyl 2- methylpropenoate)	80-62-6	CH ₂ C(CH ₃)COOCH ₃	H225 H335 H315 H317
Styrene (Vinyl benzene, styropol)	100-42-5		C ₈ H ₁₀ O H226 H332 H319 H315
Tetrafluoroethylene (Perfluoroethene, Tetrafluorethene)	116-14-3	CF ₂ CF ₂	GASS




CHEMICALS THAT CAN FORM EXPLOSIVE PEROXIDES

Topic:
Explosive
chemicals

Date:
11/01/2016

Page:
6 of 6

Vinyl acetate (Acetic acid ethenyl ester, Ethenyl acetate)	108-05-4	$\text{CH}_3\text{COOCHC}_2$		H225
Vinyl acetylene (1-Buten-3-yne)	689-97-4	CH_2CHCCH	GAS	
Vinyl chloride (Chloroethene, Chloroethylene)	75-01-4	CH_2CHCl	GASS	H220 Carc 1A H350
Vinylpyridine	1337-81-1		$\text{C}_7\text{H}_7\text{N}$	
Vinylidene Chloride (1,1-Dichloroethene)	75-35-4	CCl_2CH_2		H224 H332 H371