Peroxide Forming Chemicals

Many ethers and similar compounds tend to react with air and light to form unstable peroxides. Some of the more common peroxide-forming chemicals include p-dioxane, ethyl ether, tetrahydrofuran, acetaldehyde, and cyclohexene. The following storage practices will help minimize hazards associated with these types of chemicals.

- Store peroxide-forming chemicals in airtight bottles or cans away from light.
- Label containers with date received and date opened.
- Discard peroxide formers 3 to 6 months after opening, depending on the chemical (see table below).
- Discard unopened containers of peroxide-forming chemicals in accordance with the manufacturer's expiration date or 18 months after the date received.

**ALL** peroxide formers must be disposed through EHS if they've been:
- open for greater than 6 months
- unopened for more than one year,
- or are past the manufacturer’s expiration date

All chemicals received should be checked against the list of peroxide forming chemicals. If a chemical is peroxidizable then the following procedure should be followed:

1. Determine from list if chemical has 3 or 6-month limit after opening.
2. Write date received on a sticker, tape or label.
3. Write a 3 or 6 under the date.

**Common Peroxide Forming Chemicals**

<table>
<thead>
<tr>
<th>3 MONTH LIMIT</th>
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<tbody>
<tr>
<td>ABSOLUTE ETHERS (Ethyl Ether Anhydrous)</td>
</tr>
<tr>
<td>Bis (2-Methoxyethyl) Ether (Diethylene-Glycol Dimethyl Ether; Diglyme)</td>
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<tr>
<td>DIETHYLENE GLYCOL Dimethyl ETHER (DIGLYME)</td>
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<tr>
<td>Diethylether (Ethyl Ether; Ether)</td>
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<tr>
<td>Dimethoxyethane (Glyme)</td>
</tr>
<tr>
<td>Dioxane (Diethylene Oxide)</td>
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<tr>
<td>Di-Isopropyl Ether</td>
</tr>
<tr>
<td>Divinyl Acetylene</td>
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<tr>
<td>Ethyl Ether</td>
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6 MONTH LIMIT

Acetal
Acrolein (Propenal; Acrylic Aldehyde; Allyl Aldehyde)
Acrylic Acid
Acrylonitrile (Propene Nitrile; Vinyl Cyanide)
Alkyl-Substituted Cycloaliphatics (Methyl Ethyl Cyclo_____ane)
ALL OTHER ETHERS
Allyl Glycidyl Ether
n-Amyl Ether
Anisole
Butadiene (Erythrene)
n-Butyl Glycidyl Ether
Butyl Vinyl Ether
2 Chloro 2,3 Butadiene
Chloroethylene
Chloromethyl Ether
Chloroprene (2-Chloro-1, 3-Butadiene; Chlorobutadiene)
Chlorotrifluoroethylene
Cyclopentene
Methycyclopentane
Methyl 1-Butylketone (2-Hexanone; N-Butyl Methylketone)
Methyl Acetylene (Allylene; Propyne)
Methyl Acrylate
Methyl Ether Ether
Methyl Isobutyl Ketone
Methyl Methacrylate
Methylvinyl Ether
Olefins (Unsaturated Hydro Carbon Propene, Hexene,)
Perfluoroethylene
Phenyl Ether
Propyne
Styrene (Phenylethylene;Vinylbenzene;Cinnamene)
Tetrafluoroethylene (Perfluoroethylene)
Tetrahydrofurancelin (Tetralin)
Vinyl Acetate
Vinyl Acetylene
Vinyl Chloride (Chloroethylene; Chloroethene)
Vinyl Ethers
Vinyl Pyridine