Overview:
- Upon exposure to oxygen, peroxide forming chemicals can create shock, heat, or friction sensitive peroxides, which can initiate explosions upon concentrating, evaporating, or distilling them.
- It is important to understand, use, store, test and dispose of this class of chemicals properly.
- Examples: Diethyl Ether, Tetrahydrofuran (THF), Dioxane, and Isopropyl Ether
- Have Safety Data Sheets (SDS) available.

Testing and Labeling Tips:
- Never test containers of unknown age or origin
- Chemicals that reach their expiration date should be tested regularly or disposed of.
- Each peroxide forming chemical container must be tested at least every 6 months upon opening.
- Results of the peroxide test, the test date and initials of tester must be marked on the outside of the container by the neck * on an EHS test label:

<table>
<thead>
<tr>
<th>Date</th>
<th>Test 1</th>
<th>Test 2</th>
<th>Test 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Test with a dip strip and pipette according to directions on package:

<table>
<thead>
<tr>
<th>Deactivate or Dispose</th>
<th>Peroxides Are Present</th>
<th>Use with Precaution*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Be able to interpret the results and what actions to take if peroxides are present:

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25 ppm</td>
<td>Considered safe for general use</td>
</tr>
<tr>
<td>25-100 ppm</td>
<td>Not recommended for distilling or otherwise concentrating</td>
</tr>
<tr>
<td>&gt;100 ppm</td>
<td>Avoid handling and contact EH&amp;S for assistance with safe disposal</td>
</tr>
</tbody>
</table>

Storage Tips:
- Label date received, date opened, and expiration date.
- Do not refrigerate at or below the temperature at which the peroxide forming compound freezes or precipitates.
- Put in tightly closed, properly labeled container in a flammable storage cabinet, away from flames, heat, sources of ignition, light, oxidizers and oxidizing acids.
- Never purchase uninhibited peroxide formers.
- Purchase only the quantity that is required in a one-month period.
- Bottles should not have crystals in solution or around cap.

Disposal: The lab must ensure results of less than 10 ppm before requesting pickup from EHS.
- Dilute small quantities (25 g or less) of peroxides with water to a concentration of 2% or less and then transfer to a polyethylene disposal bottle.
- Reduce peroxide with reducing agent (e.g., ferrous sulfate or sodium bisulfite) until no peroxide is shown to be present by dip strip test. Do not add it to a container holding other wastes for disposal.
- Properly fill out the EHS Hazardous Waste label, place in a DOT box and submit an online request: http://tinyurl.com/ehshazwaste.

Approved by: Brenda Coolbaugh, ACHO
Last revised by: Ed Evans
Revision date: 12/15/15

The most recent version of this document is available electronically at the EHS website: