



## **Peroxidizable Materials**

Some of our laboratories use peroxides or peroxide forming materials. Peroxy compounds are examples of chemicals that present special problems in the laboratory because they can be violently reactive or explosive. Peroxides are among the most hazardous substances handled in the chemical laboratory. They are generally low-power explosives that are sensitive to shock, sparks, or other accidental ignition. They are far more shock sensitive than explosives such as TNT. The EH&S website includes a representative list of [potentially unstable chemicals](#) (including peroxide-formers).

Peroxidizable chemicals shall be used and stored taking special precautions:

1. Containers shall be dated (on an appropriate label or directly on the containers) when received in a Stockroom. Items that are not purchased from a stockroom shall be dated and labeled when received in the laboratory. Labels have been printed and are available from your Department Safety Representative or EH&S.
2. Containers shall be dated when first opened.
3. Before distilling or refluxing any known or suspected peroxide-containing mixture or solution, check it carefully for the presence of peroxides. These need to be removed before proceeding. To check for the presence of peroxides, a semi-quantitative testing kit using treated paper strips is available in the Chemistry Stockroom or may be purchased through VWR.
4. Low concentrations of peroxides can be removed by appropriate techniques but only under careful supervision of experienced personnel.
5. In all situations where there is a question of excessive peroxide buildup, the Safety Representative or EH&S Hazardous Waste Staff should be contacted for proper disposal procedures.
6. If an old container of peroxide-forming material is found, call the EH&S Hazardous Waste Staff for proper handling procedures. If the container is compromised (such as damaged, rusty, or bulging), if the container is not labeled and is suspected to be a peroxide, or if peroxide crystals have formed call the EH&S Hazardous Waste Staff. However unlikely, peroxides can explode on contact and deserve careful attention.

For more information refer to:

1. [“Prudent Practices in the Laboratory: Handling & Disposal of Chemical,”](#) 2011, National Research Council, National Academy Press, Washington, D.C.
2. “Handbook of Laboratory Safety,” 1990, 3<sup>rd</sup> ed., CRC Press, Boston, Mass.

## **Most Common Peroxides Used in Labs at Harvard University**

THF (Tetrahydrofuran)

Diethyl ether

Dioxane

### **PEROXIDIZABLE MATERIAL**

DATE RECEIVED    \_\_/\_\_/\_\_

DATE OPENED      \_\_/\_\_/\_\_

DATE(s) TESTED    \_\_/\_\_/\_\_

                          \_\_/\_\_/\_\_

#### **GENERAL STORAGE GUIDELINES**

<b>Container</b>	<b>Storage Time Limit</b>
Unopened	No more than 1 year from receipt
Opened	No more than 6 months after opening

**Note:** Chemical-specific storage recommendations are contained in the Harvard University Chemical Hygiene Plan.