

FACT SHEET: Peroxide Forming Chemicals

Safe Use and Handling



Peroxide forming chemicals have the potential to form shock-sensitive, explosive crystals if not properly stored and maintained. Because of this hazard, it is important to understand how to safely work with and store peroxide forming chemicals. Peroxide formers are found throughout Tulane's research and clinical laboratories. Some of the most commonly used peroxide forming chemicals are tetrahydrofuran (THF), 1,4-dioxane, and ethers.

NEED TO KNOW:

1. Use appropriate personal protective equipment (PPE) when handling flammable liquids, especially those that may produce peroxides. A flame-resistant lab coat should be used.
2. If crystallization, discoloration, and/or stratification is noted, the chemical has become shock sensitive. Use **extreme caution**, do **NOT** touch the container and immediately call OEHS for disposal.
3. Purchasing peroxide forming chemicals should be on an as-needed basis. Do **NOT** stockpile and always mark the date of receipt.
4. Prior to working with peroxide forming chemicals, call OEHS to ensure your space and procedures are compliant.

HAZARDS ASSOCIATED WITH PEROXIDE FORMING CHEMICALS:

- Peroxide formers can become shock sensitive if left untested and allowed to form crystals. Any slight movement can cause an explosion.
- Do **NOT** store peroxide formers near other flammable materials as it can increase the intensity of a fire/explosion.
- Peroxide formers that require refrigeration must be kept in a "explosion proof" rated refrigerator. They should only be stored in a refrigerator if the manufacturer specifically recommends it. For general storage, they should be kept in a designated area in the lab away from flammable and reactive materials.
 - * If you do not have an appropriate refrigerator, please reach out to OEHS at oehs@tulane.edu for assistance.

USE AND TESTING:

- When received by lab, peroxide formers must be marked immediately with date of receipt. Peroxide formers must be tested (if unopened) 6 months after date of receipt.
- Labels* should be placed on chemical container to keep track of testing dates.
- Containers opened for the first time/not opened six months, must be tested for peroxides and marked with testing date under date opened. Every test conducted must be recorded.
- The following testing kits can be used to test for peroxides:
 - EMD Millipore Mquant Peroxide Test Strips cat# M-1100110002 (Fisher).
 - Haztech Systems Peroxide Teststrips cat# NC9253631 (Fisher).
 - Quantofix Peroxide Test Strips cat# Z-101680 (Sigma Aldrich).

PEROXIDE FORMING CHEMICAL

Date Received: _____ Date Opened: _____

TESTING REQUIRED EVERY 6 MONTHS

PEROXIDE TEST RECORD (Contact OEHS if concentration >100 ppm)

TEST DATE	TESTER'S INITIALS	PEROXIDES (PPM)	NEXT TEST DATE

* OEHS will be providing labels during lab visits and you can request labels by reaching out to OEHS at oehs@tulane.edu.

DISPOSAL OF PEROXIDE FORMING CHEMICALS

If a peroxide meets any of the following criteria, it must be disposed by OEHS:

- Peroxide concentrations \geq 100 ppm.
- A year has passed without use of testing.
- Expiration date marked on container has passed.
- Crystallization, discoloration, and stratification are present (signs that the chemical has become shock sensitive).

To request disposal by OEHS, use the waste tab in [SciShield](#).

NOTE: While awaiting disposal, keep chemicals secure and separate from other reactive or flammable materials.

MORE INFO:



ADDITIONAL RESOURCES:

- UCSC EHS: [Classification List of Peroxide Forming Chemicals](#)
- OSHA: [Laboratory Safety Guidance](#)