

WELCOME TO OUR

Quarterly Safety Newsletter

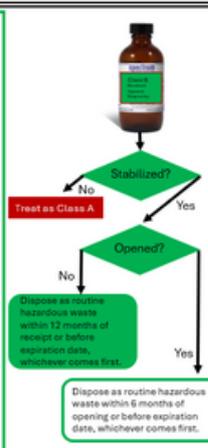
we're so glad you're here!

Class B Peroxide Forming Chemicals Without peroxide testing*

<p>Properties:</p> <p><u>Peroxide forms on concentration.</u></p> <ul style="list-style-type: none"> Peroxide formation through autooxidation is slower. Distillation/evaporation will accelerate peroxide formation and concentrate the peroxides, which can explode with heat, spark, or shock. 	<p>Examples:</p> <ul style="list-style-type: none"> Acetal Cumene Cyclohexane Cyclooctene Cyclopentene Diacetylene Dicyclopentadiene Diethylene glycol dimethyl ether (diglyme) Diethyl ether Dioxane (p-dioxane) s.g. 1,4 dioxane Ethylene glycol dimethyl ether (eglyme) Furan Methyl acetylene Methyl cyclopentane Methyl-isobutyl ketone Tetrahydrofuran Tetrahydrofurfuralene Vinyl ethers
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Safe Handling

- *Always test for peroxide before each use in procedures that involve heating, distillation, or evaporation. ≤ 10 ppm is generally safe, but do not evaporate to dryness!
- Purchase what you will use within 12 months.
- Purchase stabilized form unless procedure calls for a pure substance.
- Write on PFC label:
 - Received date.
 - Opened date.
 - Dispose by date.
- Store in a cool, dark place.
- Use an explosion-proof refrigerator when needing cold storage.
- Always inspect around the lid, neck and bottom of bottle for signs of peroxides before opening.
- Dispose as routine hazardous waste within 12 months of receipt (unopened bottle), within 6 months of opening, or before expiration date, whichever comes first.
- Dispose as high-hazard waste all containers kept after the dates in #7.



HI, DID YOU KNOW? Policy Update

USC's policy for managing peroxide-forming chemicals (PFCs) has been revamped with more clarity and precision. This recent update includes:

- Enhanced details on labeling, storage, tracking, peroxide testing, and disposal to keep your workspace safe and compliant.
- Downloadable reference guides, peroxide testing methodology, container labels, and peroxide test logs are now available for printing.
- PFC inventory tracking on Campus Optics!

[FIND OUT MORE](#)

Hazard and Risk Alert

Chemicals like 1,4-dioxane, diethyl ether, tetrahydrofuran, and vinyl pyridine, can form dangerous peroxides when exposed to air. These peroxides can turn containers into explosive hazards, sensitive to shock, heat, or ignition, and significantly increase disposal costs.

To minimize risks:

- Choose peroxide formers with inhibitors and buy only what you need to use before peroxides form.
- Mark containers with the date received, date opened, and discard date.
- Follow a defined schedule to discard these chemicals in their original containers based on their peroxide former class.



[DISCARD SCHEDULE](#)

A few Reminders



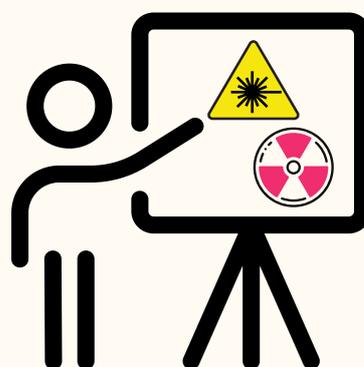
1. Verify your PFCs on Campus Optics every 3 months!



2. Post PFC inventory on storage cabinets, refrigerators, gloveboxes, etc.

Hazardous Waste Refresher on Blackboard!

3. If you generate chemical waste, you must complete the EH&S Hazardous Waste training annually. New researchers attend [initial in-person training](#) and subsequent annual refresher in Blackboard. Current researchers who are not yet registered in Blackboard must attend in-person training again. After this, you'll be enrolled in Blackboard for future refreshers.



4. Sign up for in-person Laser and X-ray training!



Coming Up

FALL SEMESTER TRAINING

Mark your calendars! Do not miss any safety training required to work in our laboratories. New dates are available for Chemical Lab Safety, Hazardous Waste, BSL-2 and others!

[TRAINING SCHEDULE](#)



Coming Up

HAZARDOUS WASTE AUDIT

The South Carolina Department of Environmental Services conducts periodic audit of hazardous waste management at USC for compliance to hazardous waste training, storage, and disposal guidelines.

[PREPARE YOUR LAB!](#)



RADIATION SAFETY CORNER

Ordering Radioactive Materials?

Read the tips below to ensure you receive your material in a compliant and timely manner!

- Complete the [request form](#) and submit it to radsafe@mailbox.sc.edu.
- When submitting a requisition, be sure to categorize the purchase as “radioactive” so that it comes to Radiation Safety for timely approval.
- Radioactive materials may **NOT** be ordered with a credit card.
- ALL radioactive materials must be shipped directly to Radiation Safety at Benson School for processing.



SEE FULL CASE STUDY



BIOSAFETY CORNER

🔧 Keep It Clear: Why Clutter Has No Place in Your Biosafety Cabinet



A biosafety cabinet (BSC) is your frontline defense when working with biohazardous materials—but only when used correctly. One of the most common and overlooked safety risks in the lab is cluttering the BSC workspace.

🚫 Why Clutter Is a Problem

- **Disrupted Airflow:** BSCs rely on laminar airflow to contain and filter contaminants. Too many items block this flow, reducing the cabinet's effectiveness.
- **Cross-Contamination:** Crowded surfaces increase the risk of accidental spills, splashes, and contamination between materials.
- **Difficult Decontamination:** More items mean more surfaces to clean—and more places for hazardous agents to hide.
- **Reduced Efficiency:** A cluttered workspace slows down your workflow and increases the chance of mistakes.

✅ Best Practices

- Only place essential materials inside the BSC.
- Arrange items from clean to dirty to maintain workflow direction.
- Keep grilles clear—never block front or rear airflow vents.
- Remove unnecessary items immediately after use.
- Disinfect all surfaces before and after each session.

Remember: **A clean BSC is a safe BSC.**

Keeping your workspace clear protects you, your colleagues, and your research.

News and Articles

ACCIDENTS WITH PEROXIDE-FORMING CHEMICALS

1. Peroxide explosion injured researcher while conducting Rotovap procedure.
2. Explosion of “empty” bottle while processing hazardous waste.
3. Hydrogen peroxide incident and accidents (historical review).

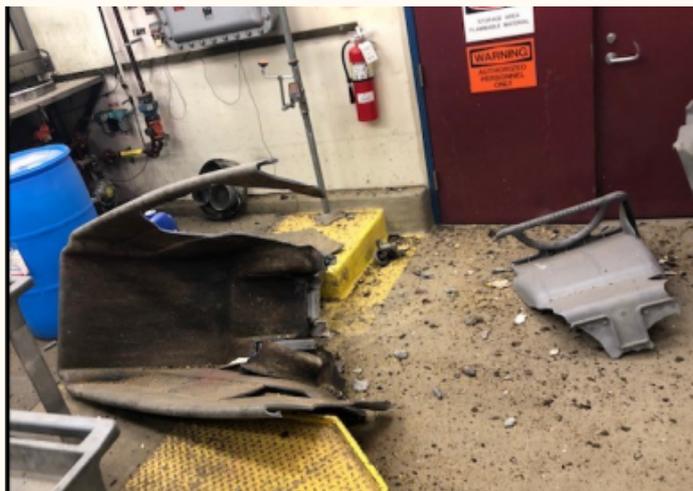


Figure 1: Damaged cart and glass fragmentation from the detonation.



Figure 2. The lower round-bottomed flask from the rotovap exploded inside the metal water bath.

Contact us today

HAVE ANY QUESTIONS ABOUT RESEARCH SAFETY?

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LET'S CHAT!