

Principal Investigator: _____




Date Approved: _____

This document covers basic chemical safety information for peroxide-forming particularly hazardous substances. The use of any peroxide-forming particularly hazardous substance is subject to pre-approval by the Principal Investigator (PI) and/or Supervisor. PI and/or Supervisor may use the sheet attached to this SOP to document any lab specific training for Peroxide-Forming Particularly Hazardous Substances. **DO NOT USE PEROXIDE-FORMING PARTICULARLY HAZARDOUS SUBSTANCES UNTIL YOU HAVE OBTAINED THE NECESSARY PRE-APPROVAL.**

Peroxide-Forming Particularly Hazardous Substances

Peroxide-forming chemicals (PFCs) are flammable organic liquids which are capable of forming potentially explosive R-O-O-R' peroxide bonds (where R = organic group) upon exposure to air or oxidizing impurities. Peroxides formed in a chemical container are particularly likely to accumulate within the threads of the screw cap, and may explode when subjected to heat, light, friction or mechanical shock (e.g. unscrewing the cap). It is particularly dangerous to allow these materials to evaporate to dryness, such as during distillation, leaving the crystals of peroxide on the surfaces of the container.

Carcinogens, reproductive toxicants, and substances with a high degree of acute toxicity are considered particularly hazardous. This SOP covers particularly hazardous substances capable of forming organic peroxides (Peroxide-forming PHS).

Personal Protective Equipment & Personnel Monitoring		
 Lab Coat	 Gloves	 Eye Protection
Flame resistant lab coat	Nitrile or chloroprene gloves typically provide adequate protection against minor splashes. Consult with your PI or supervisor to determine whether any materials involved in your process require alternative hand protection.	ANSI Z87.1-compliant safety glasses or safety goggles if a splash hazard is present

Labeling & Storage

Peroxide-forming PHS should be stored in a flammable storage cabinet with self-closing hinges or in a refrigerator rated for flammable storage. Primary containers should be labeled according to the UNC Charlotte Chemical Hygiene Plan. The secondary container's label must contain the chemical name and corresponding hazards. Also, if not plainly visible (e.g. through a cabinet window), labelling must be applied to storage locations where these are stored. Containers greater than 1 gallon (4L) in size are not recommended, but must be stored in a flammable storage cabinet if present. All Peroxide-forming PHS must be stored away from combustible materials and oxidizers.

Peroxide-forming PHS must be marked with receiving date and opening date. They must be disposed of within the sooner of 12 months from the date of opening, 18 months of the date of receipt if unopened, or the expiration date as specified by the manufacturer if unopened. If the receiving and opening date is not known, promptly dispose of as hazardous waste.

Engineering Controls, Equipment & Materials

Fume Hood

It is advisable to use a fume hood when working with these materials. If your protocol does not permit the handling of such materials in a fume hood, contact EHS to determine whether additional respiratory protection is warranted.

Cautions & Considerations

Static Electricity

Large containers of PFCs are discouraged given the strict limits on prolonged storage. If required due to high demand, all large containers should always be grounded, and should be bonded to the receiving container during transfer. Always transfer flammable chemicals from glass containers to glassware or from glass container/glassware to plastic. Transferring these types of chemicals between plastic containers or unbonded metal containers may lead to a fire due to static discharge.

Housekeeping

Spills

Notify others in the area of the spill, including your supervisor. Evacuate the location where the spill occurred. Call 911 from any campus phone (or 704-687-2200 from a cell phone). Report any exposure to EHS at 704-687-1111. Remain on-site (at a safe distance) to provide detailed information to first responders.

Decontamination

Decontamination methods will vary based on the materials handled and equipment being used. Please review the chemical Safety Data Sheet for guidance on cleaning materials.

Waste

Refer to the UNC Charlotte Chemical Hygiene Plan for details. Note: Empty containers of PFC's can still pose a hazard.

First Aid & Emergencies

Skin or Eye Contact

Remove contaminated clothing and accessories; flush affected area with water. If symptoms persist, get medical attention.

Inhalation

Move person into fresh air. If symptoms persist, get medical attention.

Ingestion

Rinse mouth with water. If symptoms persist, get medical attention.

Name	Signature	Date