

**Office of Research Safety**  
**Laboratory Safety Manual**  
**806 Chemical Storage and Handling**

1. Proper chemical storage and transport is extremely important in order to maximize personal safety with respect to chemical spills, chemical incompatibilities, and fire or explosion control.
  1. Common examples of improper storage practices.
    1. Chemicals are stored in alphabetical order by name. It is much better to store chemicals according to the hazard class.
    2. Chemicals are stored in a laboratory hood while the hood is used for other designated purposes.
    3. Chemicals are stored on shelves above eye level.
    4. Storage shelves are so crowded that it would be impossible to put even one more container on the crowded shelf, or so crowded that when a single bottle is to be removed, other nearby containers must be moved to get at the bottle of interest.
    5. Chemicals are put on laboratory bench tops and not returned for several days, long after their usefulness on the bench top has past.
    6. Tiers of shelves are not adequately secured, and can topple easily.
    7. Inventory control is either poor or non-existent; many containers are not identified with appropriate information.
    8. Chemical bottles are allowed to deteriorate due to corrosion. Leaks may develop.
2. Transporting Chemicals Many incidents that occur in laboratories are the result of improperly carrying chemicals from one place to another or from the transferring of chemicals from one container to another. Laboratories use many chemicals that may pose a threat to personal injury when mishandled; therefore it is best to practice safety with regards to all chemicals in a laboratory.
  1. Transporting large bottles of acids, solvents, or any other liquids should be done with the use of a cart. However, if a cart is not available for such use, only one bottle at a time should be transported with both hands: one on the neck of the bottle, while the other is placed underneath of the bottle. The use of bottle carries is highly recommended. Bottles should not be picked up by the cap or by the glass ring near the neck of the bottle.
  2. If a cart is used for transporting chemicals, the cart should be stable. Bottles should not be placed near the edge of the cart, near each other nor near other glassware during transport. Incompatible chemicals should not be placed on the same cart. (Please see incompatibility chart of this manual)
  3. In order to avoid exposure to passengers on elevators, freight-only elevators should be used when transporting chemicals.
3. Storing Chemicals
  1. Specific instructions on chemical storage may be obtained from the MSDS or on the container label.
  2. Ensure that all containers are in good condition and are properly labeled, including the date of purchase.
  3. Date all containers when opened.
  4. Store incompatible chemicals separately, as opposed to alphabetically. Incompatible chemicals should not be stored close to each other.
  5. Ensure that all storage locations are dry and adequately ventilated.
  6. Secure all storage shelves and cabinets to prevent tipping. Shelves should not be overloaded.
  7. Liquid chemicals should be placed below eye level.
  8. Flammable liquids should be stored in approved safety cabinets.
  9. The date of purchase, as well as the date of opening, of each peroxide forming chemical should be indicated on the corresponding container.
  10. Secure gas cylinders away from heat sources.
  11. All chemicals in a lab should have a definite storage place and should be returned to this place after being used.
  12. Chemicals should never be stored on the floor.
  13. Appropriate containers, such as those used in experiments, for storage or for waste, should be used according to the type of chemical. Often the MSDS will provide the specific information.
  14. Containers must be checked often (at least weekly) for any signs of chemical leakage.
  15. All containers must have caps and covers that are securely in place whenever the container is not in use.
  16. Chemicals should be stored as close as possible to the area where they are used in order to minimize the distance that the chemical is transported.

17. Keep chemical inventory to a minimum and do not store excess quantities of any hazardous materials.
  18. Separate all chemicals according to compatibility groups and store them in labeled storage areas or cabinets.
  19. Containers must be in good condition and compatible with its contents. Degraded, spilled or leaking containers must be disposed of as hazardous waste.
  20. All containers must be legibly labeled with chemical name, concentration, and a hazard warning. Abbreviations may be used if definitions are posted.
  21. Extra labeling is required for high hazard materials requiring specific storage conditions - peroxide formers, air and water reactives, and select agents.
  22. Peroxide formers and other chemicals that degrade over time must be dated when received and opened and disposed of within 1 year or tested for the presence of organic peroxides - see Guidelines Work with Organic Peroxide Forming Materials for more information.
  23. Avoid storing excess quantities of flammable materials and use a flammable storage cabinet where necessary (see sheet).
  24. Do not keep flammable materials in a "domestic: or household refrigerator". Use a flammable storage refrigerator (see sheet). Refrigerators should have the correct label.
  25. Maintain an accurate chemical inventory by keeping CisPro up to date.
  26. In shared areas, space and equipment should be labeled with the user and lab name.
4. KSU Chemical Compatibility Storage Guidelines
1. Separate each of the following classes of chemicals from each other by storing in separate cabinets or by using appropriate tubs or containers. Polypropylene tubs are commonly used for this purpose. All containers should be clearly labeled, and all storage locations should be labeled according to compatibility group.
  2. It is important that all lab personnel understand lab procedures for storage of hazardous materials, including where these materials are kept in the lab.
  3. **Mineral (Inorganic) Acids** - Examples: hydrochloric acid, sulfuric acid, phosphoric acid, boric acid, and hydrobromic acid.
  4. **Oxidizers** - Examples: bromic acid, perchloric acid, chromic acid, nitric acid, many perchlorates, permanganates, bromine, chlorine, fluorine, silver nitrate.
    1. Oxidizers should not be stored directly on wooden shelves or on paper shelf liners, spills may react and ignite spontaneously.
    2. Perchloric acid presents special hazards; it must be isolated from oxidizable materials and dehydrating agents..
    3. Hypochlorite solutions (e.g., bleach) are oxidizers; however, they will release chlorine gas on contact with acids, so store them separately.
  5. **Bases/Caustics** - Examples: aqueous ammonia, ammonium hydroxide, potassium hydroxide, and sodium hydroxide.
  6. **Organic Solvents/Acids** - Examples: acetone, methanol, isopropyl ether, methylene chloride, carbon tetrachloride, acetic acid, citric acid, benzene, tetrahydrofuran.
  7. If space is limited, labs may wish to separate flammable and non-flammable organic liquids in flammable storage cabinets.
  8. **Highly Toxic/Carcinogenic** - Examples: sodium azide, acrolein, arsenic pentoxide, pentachlorophenol, hydrazine, botulinum toxin, acrylamide, methyl isocyanate, phorbol esters.
  9. **Pyrophoric Materials** - Examples: diethyl aluminum chloride, lithium, white or yellow phosphorus, trimethyl aluminum.
  10. **General "Dry" Lab Chemicals** - Examples: This would include many of the relatively innocuous or unreactive materials commonly found in laboratories.
  11. **Gases** -Segregate according to hazard class. Acutely toxic and toxic gases should be stored in gas cabinets or fume hoods. Cylinders should be double-chained or double-strapped to a substantial, fixed surface. Cylinders should be turned off at the cylinder valve when not in use and should be capped when stored. See SB Gas Cylinders.
  12. **Water Reactives** - Examples: sodium, potassium, calcium, aluminum tribromide, calcium oxide, acid anhydrides, metal hydrides.
  13. **Controlled Substances** - Narcotics and other controlled substances should be stored in a secure, locked location such as a drawer or safe. See SB Controlled Substances
5. Specific Storage Requirements
1. Peroxide Formers
    1. In the presence of air and light, certain chemicals, such as ethers, liquid paraffins, and olefins can form peroxides. More specific examples include isopropyl ether, diethyl ether, tetrahydrofuran and dioxane. In some cases, peroxides can be formed even if the containers have not been opened. Therefore, safety precautions should be taken in laboratories working with such chemicals. See SB Peroxides
    2. Chemicals should always be dated.
    3. Unopened containers of ethers should be discarded after one year, unless inhibitors have been added.

However, once these bottles have been opened, they should only be kept for 6 months.

4. Store in a cool, dry and well ventilated location.
  5. These chemicals should be kept away from heat, shock, friction and impact.
2. Corrosives
    1. Should be kept in acid resistant cabinets or on polyethylene trays.
    2. Must never be stored on high shelves.
    3. Should be kept away from metal containers and from heat sources, which will result in the decrease of the evaporation rate of these chemicals.
    4. Corrosives shall not be stored under sinks or in other areas where plumbing, equipment, or shelving could be damaged by corrosive effects.
    5. Strong acids (Ph<2) and strong bases (Ph>12.5) shall be stored separately. Where amounts are small, separation can be achieved by either all the acids or all the bases being stored in separate containers such as bottle carriers, spill pans, or other secondary containment.
3. Flammable Liquids
    1. Flammable liquids have flash points below 100 F. Combustible liquids have flash point 100 F.
    2. All secondary containers of flammables greater than 4 liters shall be of the safety can type meeting NFPA standards.
    3. Keep no more than a day's supply of solvent on bench tops, unless in approved safety can.
    4. Storage of more than 25 gallons of flammable liquids shall be in flammable liquid storage cabinets meeting OSHA or NFPA 30 Flammable Liquid Codes.
    5. Flammables shall not be stored in the same cabinet as oxidizers or water-reactive materials.
    6. Only compatible compounds should be stored inside of a cabinet.
    7. Paper, cardboard, or other flammable material should not be stored inside of a flammable-liquid cabinet. Cabinets should not be overloaded. Various sizes of flammable-liquid storage cabinets have different quantity limits determined by the manufacturer
    8. Cabinet doors should be kept closed.
    9. Kent City Fire Department does not require cabinets to be vented.
    10. If these chemicals need to be cooled, they are to be placed in explosion-proof refrigerators only.
      1. **Never store flammable liquids in a standard or domestic refrigerator.**
      2. If flammable liquids must be refrigerated or cooled they must be kept in an approved "flammable storage" refrigerator or freezer. These units are available from many vendors. Domestic refrigerators have a variety of ignition sources inside the cabinet, such as lights, switches, defrost coils, etc. that could ignite vapors. Flammable storage refrigerators have no ignition sources inside the cabinet. In extremely rare occasions it may be necessary to use an "explosion proof" refrigerator or freezer (i.e., one with no interior or exterior ignition sources) in hazardous locations.
      3. Refrigerators used for food storage should be labeled with a "Store No Chemicals" label. Refrigerators used for storage of non-flammable chemicals should be labeled with "Store No Food" label.
      4. Environmental rooms (cold/warm rooms) have many ignition sources and little or no air circulation from outside. They should never be used for storage of flammable or other hazardous materials. Small quantities of hazardous materials (e.g. 500 ml ) may be used in these spaces but they should not be stored there.
4. Explosives
    1. Should only be kept in minute quantities and in specially designated areas.
5. Water Reactives
    1. These chemicals should be kept away from exposure to moisture or accidental contact with water.
6. Perchloric Acid (Concentrated, 70%)
    1. Store on glass or ceramic trays that are large enough to hold the volume of the container in case of a spill.
    2. Separate perchloric acid from sulfuric acid, organic material and metals.
    3. Store perchloric acid in a dust-free area.
    4. Perchloric acid should be used only in wash-down fume hoods of non-combustible construction.
    5. Perchloric acid and organic chemicals should never be used in the same fume hood.
7. Highly Toxic, Carcinogenic Or Mutagenic Chemicals
    1. These chemicals should be kept in restricted access with to authorized personnel only

The following tables detail chemical incompatibilities that should be avoided.

**Table 1. Strong Oxidizer-Reducer Incompatibilities**

(Chemical Safety and Disposal Guide, University of Wisconsin-Madison Safety Department)

When combined, strong oxidizers and reducers can result in a violent reaction. Therefore, contact between these chemicals must be avoided.

<p><b><u>OXIDIZERS</u></b>  Benzoyl peroxide  Bromine  Chloramides  Chlorimides  Hydrogen peroxide solutions  Metal peroxides (i.e. sodium, barium, zinc)  NBS (N-bromosuccinimide)  NCS (N-chlorosuccinimide)  Osmium tetroxide</p> <p><b>Salts and Solutions of:</b>  Bromates  Bromites  Chlorates  Chlorites  Chromates  Dichromates  Hypochlorites  Iodates  Manganates  Nitrates  Nitrites  Percarbonates  Perchlorates  Periodates  Permanganates  Persulfates  Selenates  Vanadates</p>	<p><b><u>REDUCERS</u></b>  <b>Group I metals:</b> Cs, K, Li, Na, Rb and some of these salts  <b>Group II metals:</b> Be, Mg, Ca powder, and some salts of these metals, including Grignard reagents, Ba and Sr  <b>Transition metals:</b>  Co, Cr, Fe, Mn, Ni, and V carbonyls  Al, Fe, Ni, Zn powders  <b>Catalysts:</b> Pd, Pt, Rh, and Ru  <b>Others:</b>  Alkenes  Alkynes  Amines  Anilines  Carbon powder  Hydrazine  Hydroxylamine  Indoles  Phenols  Pyrroles  Mercaptans  Phosphines  Phosphorous (any color)  Hydrides  Sulfides  Silicone hydrides  Sodium dithionite or hydrosulfite  <b>Solid Salts and solution of:</b>  Hypophosphites  Phosphites  Sulfites  Sulfides  Thiocyanates</p>
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	Thiosulfates Cyanides Sulfur powder
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**Table 2. Toxic Gas Generation**

(Chemical Safety and Disposal Guide, University of Wisconsin-Madison Safety Department)

Toxic gases can be produced when certain chemicals are mixed together, whether in a spill or breakage in a package. The following table represents the production of these gases with respect to the chemicals used to produce them.

COMPOUND	MIXED WITH	PRODUCES
Ammonium Salts	Strong Base	Ammonia
Azide Salts	Strong Acid	Hydrazoic Acid
Bromide Salts	Strong Acid	Hydrogen Bromide
Bromide Salts	Strong Oxidizer	Bromine Vapor
Bromites and Bromates	Strong Acid	Bromine & Bromine Oxides
Chloride Salts	Strong Acid	Hydrogen Chloride
Chloride Salts	Strong Oxidizer	Chlorine Gas
Chlorite or Chlorate Salts	Strong Acid	Chlorine and Chlorine Oxides
Cyanide Salts	Any Acid	Hydrogen Cyanide
Ferrocyanide or Ferrocyanide Salts	Strong Acid	Hydrogen Cyanide
Fluoride Salts	Strong Acid	Hydrogen Fluoride
Hypochlorite Salts	Any Acid	Chlorine
Iodide Salts	Strong Acid	Hydrogen Iodide
Methyl, Nitroso Amides (Diazald)	Any Base	Diazomethane
Nitrite Salts	Strong Acid	Nitric Oxides
Sulfide or Bisulfide Salts	Any Acid	Hydrogen Sulfide
Sulfite or Bisulfite Salts	Any Acid	Sulfur Dioxide

**Table 3. Water or Moist Air Incompatibilities**

(Chemical Safety and Disposal Guide, University of Wisconsin-Madison Safety Department)

Certain chemicals used in laboratories have the potential to react with water. Therefore such chemicals should not be kept in damp areas or in places where they might accidentally contact water, such as under sinks.

**Immediate Violent Reaction with Water**

Aluminum chloride, anhydrous  
 Boron tribromide  
 Chlorosulfonic acid  
 Diketene  
 Fuming sulfuric acid (Oleum)  
 Magnesium chloride, anhydrous  
 Methyl fluorosulfonate  
 Oxalyl chloride  
 Phosphorus pentachloride  
 Phosphorus pentoxide  
 Silicon tetrachloride  
 Titanium tetrachloride  
 Triethyl oxonium hexafluorophosphate  
 Trifluoroacetic anhydride  
 Trimethyl oxonium hexafluorophosphate  
 Trifluoromethane sulfonic anhydride

**Reaction with Water that Slowly Accelerates to Violence**

Acetyl chloride  
 Alkyl isocyanates  
 Chloroformate esters  
 Methane sulfonyl chloride  
 Phosphorus tribromide  
 Phosphorus trichloride

**Reaction with Water that Slowly Accelerates to Violence**

Sulfur mono-, di-, and tetra-chlorides  
 Sulfur trioxide  
 Sulfuryl chloride  
 Thionyl chloride  
 Thiophosphoryl chloride

**Produces Chlorine Spontaneously**

Sulfuryl chloride  
 Phosphorus pentachloride

**Produces Chlorine Due to Water Absorption**

Calcium hypochlorite

**Produces Chlorine Due to Carbon Dioxide Absorption**

Calcium hypochlorite  
 Sodium hypochlorite solution  
 Methyl ethyl ketone peroxide in dimethyl  
 Dimethyl phthalate  
 Hydrogen peroxide solution  
 Pyruvic acid  
 Trichloromethyl carbonate

**Immediate Violent Reaction with Water & Ignition in Air as a Result of Reaction**

Calcium carbide  
 Group 1A, 2A, 3A alkyls, amides, hydrides and nitrides  
 Lithium aluminum hydride  
 (lithium tetrahydridoaluminate)  
 NaK (sodium-potassium alloy)  
 Potassium metal  
 Sodium metal

**Absorption of Atmospheric Water Causes Heat &/or Pressure Build-up**

Alkyl chloroformates  
 Calcium chloride, anhydrous  
 Chloroacetone  
 Chloroacetaldehyde

**Absorption of Atmospheric Water Causes Slow Hydrogen Chloride Release**

Arsenic, antimony, and bismuth trichloride  
 Dichlorodimethyl silane  
 Silicon, titanium, vanadium, germanium,  
 And tin tetrachloride, anhydrous  
 Toluenesulfonyl chloride

**Absorption of Atmospheric Water is Continually diluting salt**

Antimony trichloride  
 Ferric perchlorate  
 Mercuric nitrate  
 Sodium sulfide, nonanhydrate  
 Trichloroacetic acid  
 Zinc Chloride

**Self-Pressurizing:**

Chloroformate esters  
 Chromic acid (spent)  
 Diethyl pyrocarbonate  
 Formic acid  
 Methyl formate



## Controlled Substances

### Psychotropic Drugs

The use of psychotropic drugs such as narcotics for research purposes is regulated by the Federal government. Narcotics are classified as Schedule I - V, or as a "Listed Chemical". Schedule I narcotics have the highest potential for abuse, and no legitimate medical uses, Schedule V narcotics have limited potential for abuse and Listed Chemicals are generally for drug precursors. [Lists of controlled substances](#) are available electronically, as well as the [Drug Abuse Prevention and Control Act](#) itself.

### Before Using Controlled Substances

Laboratories wishing to use controlled substances and listed chemicals for research purposes must register with the Purchasing Department. These substances can only be used if specifically authorized by the Department Chair, if an appropriate storage location is available in the lab and if an accurate inventory is maintained at all times.

### Storage Requirements

Labs are required to have a proper drug storage location for controlled substances:

- The cabinet shall be equipped with a pin-tumbler type or combination lock.
- If a padlock or combination lock is used, the hasp shall be installed so that there is no access to the mounting screws or bolts when the door is closed and the lock is fastened.
- Hinges shall be installed in such a manner as to prevent access to mounting screws or bolts or to the hinge pins when the door is closed.
- The combination or key (if any) shall at all times remain in the physical custody of the individual authorized by the Department Chair to maintain a storage cabinet for controlled substances. When users share a storage cabinet, responsibility for the key is

given to the authorized individual in possession of the storage cabinet.

### **Restricted Access**

Access to controlled substances must be restricted to specific personnel who will be using these materials. Controlled substances cannot be stored in a cabinet with other, general use chemicals, even if it locks.

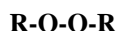
### **Inventory and Disposal**

Labs must maintain an accurate inventory of all controlled substance and listed chemicals.

**Office of Research Safety**  
**Laboratory Safety Manual**  
**807 Peroxidizable Materials**

**1. What are organic peroxides?**

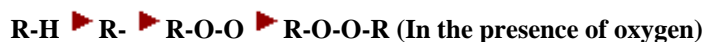
2. Organic peroxides are a class of compounds that have unusual stability problems that make them among the most hazardous substances found in the laboratory. The lack of stability is due to the presence of an oxidation and reduction center within the same molecule.



**R = organic side chains**

**O-O = Peroxo bridge**

As a class, organic peroxides are considered to be powerful explosives and are sensitive to heat, friction, impact, light, as well as to strong oxidizing and reducing agents. Peroxide formers react with oxygen even at low concentrations to form peroxy compounds. Autoxidation of organic material proceeds by a free-radical chain mechanism and commonly affects organic solvents.



The instability of the molecule (R-O-O-R) can cause auto-decomposition simply by bumping or jarring the container, addition of heat, light, or opening the cap. The risk associated with the peroxide increases if the peroxide crystallizes or becomes concentrated by evaporation or distillation. Peroxide crystals may form on the container plug or the threads of the cap and detonate as a result of twisting the lid.

**3. Classes of Peroxide Formers**

- Aldehydes
- Ethers - especially cyclic ethers and those containing primary and secondary alcohol groups
- Compounds containing benzylic hydrogen atoms (particularly if the hydrogens are on tertiary carbon atoms)
- Compounds containing the allylic structure, including most alkenes.
- Vinyl and vinylidene compounds.

**4. Preventing Formation of Organic Peroxides**

No single method of inhibition of peroxide formation is suitable for all peroxide formers. Use of different inhibitors is discussed in the literature (0.001 to 0.01% hydroquinone, 4-tert-butylcatechol (TBC) or 2,6-di-tert-butyl-p-methylphenol (BHT)); however, limiting size of container and regular testing (every 3 months) and disposal is probably more effective (and certainly easier) for managing peroxide formation.

Ethers and other organic peroxide formers should be stored in cans, amber bottles, or other opaque containers, and ideally under a blanket of inert gas, such as nitrogen. It is preferable to use small containers that can be completely emptied rather than take small amounts from a large container over time. Containers of ether and other peroxide-forming chemicals should be marked with the date they are opened, and marked with the date of required disposal.

**5. Common laboratory chemicals that form peroxides during storage include:**

Acetal	Diisopropyl ether	Sodium amide
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Butadiene	Dioxane	Styrene
Cumene	Dimethyl ether	Tetrahydrofuran
Cyclohexene	Divinyl acetylene	Tetrahydronaphthalene
Cyclooctene	Ethyl ether	Tetralin
Decahydronaphthalene	Ethylene glycol dimethyl ether (glyme)	Vinyl acetate
Decalin	Isopropyl ether	Vinyl acetylene
Diacetylene	Methyl acetylene	Vinyl chloride
Dicyclopentadiene	Methylcyclopentane	Vinyl ethers
Diethylene glycol	Potassium metal	Vinylidene chloride

## 6. Peroxide Detection Tests

From *Prudent Practices in the Laboratory: Handling and Disposal of Chemicals*, 1995

The following tests will detect most (but not all) peroxy compounds and all hyperperoxides. NOTE: These tests should not be used for testing materials potentially contaminated with inorganic peroxides (i.e., potassium).

**Option 1.** Add 1-3 ml of the liquid to be tested to an equal volume of acetic acid, add a few drops of 5% potassium iodide (KI) solution and shake. The appearance of a yellow to brown color indicates the presence of peroxides.

**Option 2.** Addition of 1 ml of a freshly prepared 10% KI and 10 ml of an organic solution in a 25 ml glass cylinder should produce a yellow color if peroxides are present.

**Option 3.** Add 0.5 ml of the liquid to be tested to a mixture of 1 ml of 10% KI solution and 0.5 ml of dilute hydrochloric acid to which a few drops of starch solution have been added just before the test. The presence of a blue-black color within a minute indicates the presence of peroxides.

**Option 4.** Peroxide test strips that turn an indicative color in the presence of peroxides. Care must be taken to follow manufacturer instructions for effective detection. In general, the strips must be air dried until the solvent evaporates and then exposed to moisture for proper operation.

Results of peroxide detection tests must be indicated on the container with test date, test results/method, and initials of the authorized person conducting the test.

## 7. Peroxidizable Materials Handling

Peroxidizable materials should be purchased in amounts that are expected to be used within six months to one year. This practice will help ensure that others are used up before the manufacturer's expiration date.

Peroxidizable materials, either opened or unopened, should be disposed of or tested for peroxides upon reaching the manufacturer's expiration date, or upon one year after receipt. If positive for peroxides, the peroxides may be removed or the materials may be disposed of by submitting a "Request for Chemical Pick-up" to Chemical Hygiene Officer. Please be sure to label the date that the test for peroxides was performed and the date peroxides removed (if applicable). The new expiration date will be three months after the date tested for materials in List A, and one year after the date tested for materials in List B.

Containers should be marked with the date opened and, in the absence of a manufacturer's expiration date, with the date received. Containers should also be marked with the date that the last test for peroxides was done.

Ethers should be disposed of without opening if there are visible crystals around the cap, or if the container is in a grossly corroded condition. Crystals visible in the container should be brought to the attention of the instructor, principal investigator or staff research assistant.

Leave at least 10 percent bottoms when distilling peroxidizable materials. The flask can be rinsed with equal amounts of a solvent such as ethanol and considered as waste.

Test for peroxides before distilling (even previously unopened ethers) and upon three months after opening List A and after one year of opening List B materials:

List A \_\_\_\_\_ Peroxide hazard on storage

Test or dispose in 3 months

Isopropyl ether; Divinyl acetylene; Vinylidene chloride; Potassium metal; Sodium amide

List B \_\_\_\_\_ Peroxide hazard on concentration

Test or dispose in 12 months

Isopropyl ether; Diethyl ether; Divinyl acetylene; Tetrahydrofuran; Vinylidene chloride  
Diacetylene; Potassium metal; Methyl acetylene; Sodium amide; Dioxane; Acetal  
Decahydronaphthalene (Decalin); Tetrahydronaphthalene (Tetralin)  
Ethylene glycol dimethyl ether; Cyclohexene; Vinyl ethers  
Diethylene glycol dimethyl ether; Dicyclopentadiene