Peroxide Forming Compound Policy

Certain chemical compounds can form explosive peroxides during use or storage. These chemicals can react with oxygen to create organic peroxides – compounds that can explode upon impact, heat, or friction. Peroxide-forming compounds can be divided into hazard classes based on the method of reaction as described in the tables below. All principal investigators, and lab staff must follow these guidelines for the control and safe use of peroxide formers:

- DO NOT OPEN a container of peroxide forming chemical that has obvious crystal formation. Do not handle container or force open lid. Treat as potentially explosive material. Immediately call EH&S for assistance (x-1815, x-1348).
- Purchase peroxide formers with inhibitors (ex: BHT) added by the manufacturer whenever possible.
- Purchase the smallest quantity possible.
- All peroxide formers purchased through Science Supply will come equipped with peroxide labels affixed (see **Figure 1)**. Date the peroxide former upon receipt, and upon opening.
- Test peroxide formers according to the schedule found on the tables below.
- Discard any **TABLE 1** peroxide formers within 3 months of receipt, regardless of opening.
- Discard any **TABLE 2** or **TABLE 3** peroxide formers within 6 months of opening or 12 months of receipt.
- Store peroxide formers under inert conditions whenever possible.
- Store peroxide formers away from light, heat, and high temperatures.
- Avoid distillation or evaporation of peroxide formers without testing for the existence of peroxides. Most explosions occur when peroxides are concentrated.

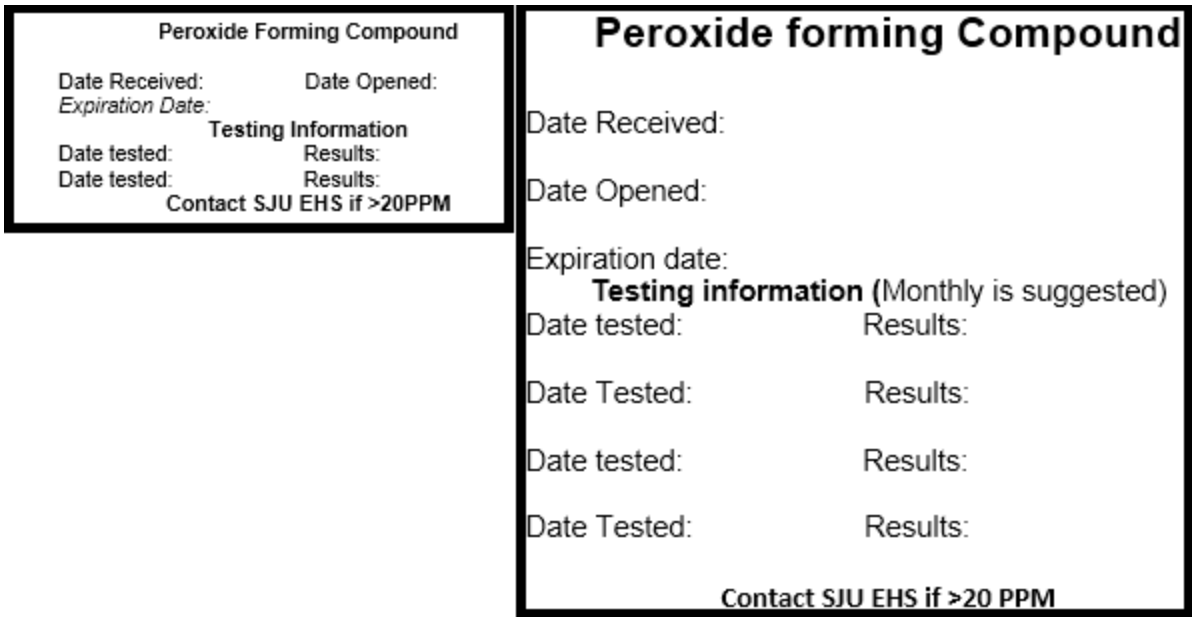

Figure 1: Peroxide forming compound label

TABLE 1: Severe Peroxide Hazard

These chemicals must be tested every month for peroxide formation, discard after 3 months upon receipt, regardless of opening.

Isopropyl ether	Potassium amide	Divinylacetylene
Potassium metal	Sodium amide (sodamide)	Vinylidene chloride
Butadiene (liquid monomer)	Chloropropene (liquid monomer)	Tetrafluoroethylene (liquid monomer)

TABLE 2: Concentration Hazard

These chemicals must be tested every 3 months for peroxide formation, discard after 12 months upon receipt, regardless of opening.

Acetal	Diethyl Ether	Methyl isobutyl ketone
Acetaldehyde	Diethylene glycol dimethyl ether	4-Methyl-2-pentanol
Benzyl alcohol	2-Pentanol	2-Butanol
Dioxanes	4-Penten-1-ol	Cumene
Ethylene glycol dimethyl ether	1-Phenylethanol	Cyclohexanol
2-Phenylethanol	2-Cyclohexen-1-ol	4-Heptanol
2-Propanol	Cyclohexene	2-Hexanol
Tetrahydrofuran	Decahydronapthalene	Methylacetylene
Tertrahydronaphthalene	Diacetylene	3-Methyl-1-butanol
Vinyl ethers	Dicyclopentadiene	Methylcyclopentane
	OTHER SECONDARY ALCOHOLS	

TABLE 3: Shock and Heat Sensitive

These chemicals must be tested every 3 months for peroxide formation, discard after 12 months upon receipt, regardless of opening.

Acrylic Acid	Chlorotrifluoroethylene	Vinyl acetate
Acrylonitrile	Methyl methacrylate	Vinylacetylene (g)
Butadiene (g)	Styrene	Vinyl chloride (g)
Chloroprene	Tetrafluoroethylene (g)	Vinylpyridine
Vinyladiene chloride		

NOTE: This list is not comprehensive, it lists commonly used reagents.