Peroxide-Forming Materials

Idaho State University | Evironmental Health, Safety, and Sustainability

Standard Operating Procedure

Revision Date 7/10/2023

Potential Safety Hazards

Reactivity – Peroxide-forming materials are made when a substance combines with oxygen and creates an unstable chemical.

Explosion Risk – Peroxides are shock sensitive and may cause an explosion. Many common agents and solvents have the potential to become peroxides.

Safe Work Practices

Inventory Management

- Avoid storing peroxide-forming materials past the manufacturer's expiration date. Peroxide formers should be used entirely or discarded before the expiration date.
- Minimize the amount of peroxide-forming materials stored in a laboratory. Acquire only the amount expected to be used in the near future.
- Affixing a label stating "Warning Peroxide Former" to alert others and write the date it was received and the date the container was opened.
- Peroxide levels must never exceed 20 parts per million (ppm).
- Purchase peroxide formers with inhibitors added by the manufacturer when possible.

Engineering Controls

- Always use an exhausted enclosure (fume hood, or glove box) when handling peroxides.
- Store peroxides away from light and heat in a flammable cabinet.

Chemical Hygiene

- Change gloves frequently, even if they do not appear to be contaminated.
- Thicker rubber latex gloves are advised when handling peroxides for a longer period of time.
- Wash hands each time after removing gloves.
- Prohibit all food and beverages in all chemical laboratories to minimize the risk of ingestion.

Personal Protective Equipment (PPE)

- Appropriate PPE includes the following:
    - eye protection
    - gloves
    - long pants
    - closed toed shoes
    - lab coat

Preparedness for a Peroxide Spill

Spill Awareness

- Recognition of a spill typically involves visual observation of the liquid solution form of the material that is not contained.

Spill Response

Small Spill - less than 500ml

- Use personal protective equipment.
- Confine and absorb the Spill using pads or absorbent.
- Place contaminated items in a labeled bag.
- Request an EHSS waste pick-up.

Large Spill - more than 500ml

- Contact EHSS at (208) 282 2310
- Mark the contaminated area with tape or signs to keep others from entering.
- Evacuate the area.

Unneeded Material

Manage peroxide solutions and contaminated items as hazardous waste and dispose via the Environmental Health Safety & Sustainability Department (https://www.isu.edu/ehs/).