

NOAA Fisheries, Northeast Fisheries Science Center Effective Date:

1. Purpose:

This Standard Operating Procedure (SOP) outlines the safe practices for the management and storage of lithium-ion batteries within the laboratory environment at the NOAA Fisheries, Northeast Fisheries Science Center. The goal is to minimize the risks associated with lithium-ion batteries, including fire, explosion, and exposure to hazardous materials.

2. Scope:

This SOP applies to all personnel involved in the handling, use, and storage of lithium-ion batteries within any laboratory space at the Northeast Science Center.

3. Regulatory References:

- OSHA (Occupational Safety and Health Administration) General Duty Clause (29 CFR 1910.1000 et seq.): Requires employers to provide a workplace free from recognized hazards. While there isn't a specific OSHA standard for lithium-ion battery storage, this clause mandates addressing known hazards.
- NFPA (National Fire Protection Association) Standards (e.g., NFPA 704, NFPA 1): While not federal regulations, these are widely recognized best practices for fire safety and hazardous materials, often referenced by federal agencies.
- DOT (Department of Transportation) Regulations (49 CFR Parts 100-185): Pertain to the transportation of hazardous materials, which may be relevant if batteries are moved between facilities.

4. Responsibilities:

- **Laboratory Personnel:** Responsible for adhering to this SOP, using batteries safely, and reporting any concerns or incidents.
- **Supervisors/Principal Investigators (PIs):** Responsible for ensuring that laboratory personnel are trained on this SOP and that the necessary safety equipment and storage facilities are provided.
- Environmental Safety and Occupational Health (ESOH) Office: Responsible for developing, implementing, and updating this SOP, providing guidance, and ensuring compliance.

5. Procedures:

5.1 Procurement and Inventory:

- Maintain an inventory of all lithium-ion batteries in use or storage within the laboratory. Include details such as type, voltage, and quantity.
- Purchase batteries from reputable suppliers.

5.2 Safe Handling and Use:

- Use only chargers specifically designed for the battery being charged.
- Do not overcharge batteries. Disconnect them from the charger once fully charged.
- Avoid physical damage to batteries (punctures, crushing, dropping).
- Do not expose batteries to extreme temperatures (high or low).

• Monitor batteries during charging and use for any signs of overheating, swelling, or leakage.

5.3 Storage:

- **Preferred Method:** Store lithium-ion batteries in **non-conductive containers** and ideally within **fire-resistant cabinets or lockers** specifically designed for flammable materials.
- If flammable storage lockers are not immediately available for all batteries, store them:
 - In a cool, dry, and well-ventilated area.
 - Away from flammable materials.
 - In non-conductive containers to prevent short circuits.
 - Use **burn-proof bags or cases** as an additional layer of safety within the storage area.
- Store batteries with a charge level between 30-50% for long-term storage, if feasible.
- Damaged or defective batteries should be segregated immediately in a non-flammable, non-conductive container and labeled clearly as "Damaged Do Not Use" pending proper disposal.
- Batteries and other solid material **cannot** be stored in the same cabinet with liquid flammable materials.

5.4 Emergency Procedures:

- **Overheating/Smoke:** If a battery begins to overheat, smoke, or swell, immediately move it to a safe, non-combustible location if it is safe to do so.
- Fire:
 - Activate the fire alarm.
 - Evacuate the area.
 - Report the incident to your supervisor and the ESOH Office immediately.
- Leakage: Avoid contact with any leaking electrolyte. Wear appropriate personal protective equipment (PPE), such as gloves and eye protection. Contain the leak with inert material (e.g., sand, vermiculite) and contact the ESOH Office for proper cleanup and disposal procedures.

5.5 Disposal:

- Do not dispose of lithium-ion batteries in regular trash.
- Follow the Northeast Science Center's procedures for waste disposal.

6. Training:

• All personnel who handle and store lithium-ion batteries must receive training on this SOP and the associated hazards.

7. Review:

• This SOP will be reviewed and updated at least annually or as needed.