



UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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To: UNOLS Community
From: UNOLS RVOC-Safety Committee
Re: Lithium Battery Safety Information
Date: 10 May 2012

Lithium batteries are used extensively in consumer electronics and within the oceanographic research community because of their energy density/size characteristics and recharge capability. They also have the potential to be extremely hazardous if used improperly resulting in fires, poisonous gases, and explosions. Recent information coming from the U.S. Navy, FAA, and manufacturers has indicated that the use of Class D fire extinguishers may not be effective when combating a lithium battery fire. Depending on the type of lithium battery; lithium non-rechargeable or lithium-ion rechargeable batteries, water may also not be effective. For lithium non-rechargeable batteries, water reacts explosively and can produce poisonous gases. The MSDS's do not have enough information to ensure safe use and handling.

Because of the potential hazards combined with the extensive use of lithium batteries, every ship in the UNOLS fleet should ensure their pre-cruise planning and hazardous material process will capture procedures on how to handle lithium batteries. When lithium batteries are used, it is imperative that the marine techs, crew, and science party are trained and aware of the proper usage, storage, disposal, and how to respond to emergencies. If your hazmat process does not adequately address the use of these unique items such as this, a separate instruction may be needed. UNOLS has no preference on the method as long as the outcome is all personnel handling and/or responding to emergency situations are sufficiently prepared.

For this particular hazardous material, the MSDS alone is not sufficient. Additional information on the hazards and how to deal with lithium batteries may be found on the UNOLS website under:

<http://www.unols.org/committees/rvoc/rvocsc.html>

The website includes information from the U.S. Navy on firefighting procedures, WHOI's "Lithium Battery Safety and Handling Guideline", and the British Natural Environment Research Council (NERC) guidance on the use of lithium batteries.

The next update to the UNOLS Research Vessel Safety Standards, (RVSS) will include an expanded discussion in chapter 9 on lithium batteries. In the interim, based on this UNOLS Safety Circular, each operator shall ensure their hazardous material planning and training process will adequately highlight lithium battery concerns so appropriate training may be accomplished prior to sailing.