

Perchloric Acid Safe Use and Storage

Use of Perchloric Acid

1. Always wear goggles, neoprene or rubber gloves and lab coats when pouring or handling perchloric acid (less than 70 %).
2. Working with solutions of 70% or more requires a face shield, heavy duty gloves, and lab coat. Special handling procedures are identified below.
3. Perchloric acid work must be with standard analytical procedures from well recognized sources unless specifically approved by the department head.
4. A current MSDS should be kept in the laboratory. Lab personnel working with perchloric acid should read the MSDS prior to commencing work.
5. Clean up spills immediately. Neutralize the liquid with sodium carbonate, clean the area with wet rags or spill pillows. Materials should be kept wet and sealed in a plastic bag. Do not allow materials to dry. Contact RMS immediately for pickup of materials or if you need assistance with cleanup.
6. A preventive maintenance program must be in effect for perchloric acid hoods and other hoods where hazardous materials are used.
7. Never heat perchloric acid in a hood unless the hood has been designed for use with perchloric acid and has a functioning wash-down system. Flush the system for at least 20 minutes at the end of each work session.

Storage and Waste Disposal

1. The maximum quantity within the lab is 450 grams (1 pound). It should be inspected monthly and if discolored should be disposed of immediately.
2. The storage of anhydrous perchloric acid is not allowed at UNLV. Storage for a short time, even less than 10 days poses a severe risk of explosion.
3. Perchloric acid should be stored separately from many other compounds including acetic acid, acetic anhydride, alcohols, aniline, bismuth and bismuth alloys, combustible materials, dehydrating agents, ethyl benzene, hydriotic acid, hydrochloric acid, grease, iodides, ketones, other organic materials, oxidizers and pyridine.
4. Perchloric acid should be stored in its original container with label intact and be placed in a ceramic or plastic container large enough to contain the entire contents. Never store it in a wooden cabinet or shelves lined with paper.
5. Waste should be collected in the original container if possible and not mixed.
6. Anhydrous perchloric acid may not be used or stored at UNLV. Anhydrous perchloric acid reacts violently with many organic materials posing a serious explosion hazard.
7. Opened bottles should not be stored longer than one year from the date opened. Unopened containers may be stored for a maximum of two years from the date received. If an "old" bottle of perchloric acid is discovered in the lab, do not open or move the bottle. Immediately call RMS for pickup.