

SAFE USE OF PERCHLORIC ACID

Perchloric acid is a strong acid used for complete digestions of organic material. It is normally supplied in bottles of up to one gallon in capacity at 70-72% strength. In many respects, its hazards are similar to those of nitric acid, as both are strong oxidants. **Perchloric acid presents an additional hazard in that perchloric acid mist and vapor can condense in ventilation systems to form metallic perchlorates, which can be explosive.**

Researchers using or anticipating using perchloric acid in their experiments should keep the following in mind:

1. There are no fume hoods currently on campus that can safely accommodate perchloric acid digestions. Any remaining wash-down hoods have been decommissioned and will not be reactivated due to the high cost of remediating these hoods of perchlorate contamination.
2. Solvents must never be stored near a designated perchloric acid area at any time. These areas should be posted with a label stating "**Perchloric Acid Use Only. Organic Chemical Prohibited**".
3. When diluting perchloric acid (or any other acid) always add **ACID TO WATER**, not the reverse.
4. Perchloric acid will attack researcher's tissues as easily as it will attack sample tissue. To prevent injury, goggles or face shield, gloves, and apron must be worn when handling perchloric acid.
5. Because of the potential for explosion, no work should be done in a hood previously used for perchloric acid digestions until it has been thoroughly decontaminated. If you suspect any fume hood in your laboratory has been previously used for perchloric acid digestions, contact the MSU EHS at 355-0153 to have your hood tested for perchlorate contamination.
6. Perchloric acid waste must not be mixed with any other waste. It should be put into acid-resistant bottles (preferably the original acid container), clearly labeled, and treated as hazardous chemical waste.
7. Perchloric acid should be stored segregated from all other chemicals and inside secondary containment (such as a pyrex baking dish or plastic dish pan). It must not be stored near organic acids such as acetic acid, near bases, or near other organic or flammable material.

The MSU EHS Hazardous Waste Professionals can dispose of unneeded perchloric acid at no charge to your laboratory. If you have further questions about safe use, storage and handling of perchloric acid, please contact MSU EHS at 355-0153.