

# PERCHLORIC ACID

## Hazard Description

Perchloric acid is extremely hazardous, and every effort must be made to find safer alternatives, its use should be avoided when possible. Perchloric acid is bought as a 70-72% solution (the dihydrate) and in this form it is simply an extremely corrosive liquid. Its major hazard, however, is the variety of ways it can be involved in explosions and fires. The materials can be sensitive to heat, friction or shock, and even the most trivial of mishandling can have catastrophic results.

## Prior to use of Perchloric Acid

- Complete a research specific laboratory risk assessment.
- Ensure that all required materials are available in case of spill, emergency and waste collection.
- Perchloric acid requires an SOP prior to purchase or use. The SOP should be submitted to the Safety Office for review. Once approved, ensure the SOP is signed off on by the supervisor and that appropriate personnel are trained.

## Handling

- All operations involving perchloric acid must be conducted in a fume hood.
  - **No other organic chemicals or oxidizable materials should be present in the perchloric acid fume hood at any time.**
- Do not handle perchloric acid on a wooden surface or around oxidizable materials, which may ignite spontaneously or explode after contact with perchloric acid liquid or vapor.
- Treat wet digestions with nitric acid before adding perchloric acid to destroy any easily oxidizable material.
- **Personal protective equipment (PPE) must always be worn when handling perchloric acid.**
- Transfer perchloric acid over a suitable containment tray to limit extent and spread of spillage and to facilitate clean-up and disposal.
- **Never work with perchloric acid while alone in the lab.**
- For small spills, follow as per spill procedures, in addition, remove all ignition sources and do not use sawdust or other flammable absorbents.

## Emergency Procedures

Always review SDS of purchased product for manufacture specific recommendations. Look at SDS for other modes of exposure.

## Contacts

### Emergency: 911

UW Special Constables: 519-888-4911 or ext. 22222

Poison Control: 1-800-268-9017

Whenever 911 is called, if possible, UW Special Constables should also be informed to make them aware of the emergency on campus and allow them to support as needed. Ask them to meet the paramedics and direct them to the incident location.

Inhalation	<ul style="list-style-type: none"><li>▪ Remove individual from contaminated area</li><li>▪ Call 911 for transport to hospital</li><li>▪ Corrosive substances may cause severe lung damage if inhaled</li><li>▪ Perform CPR and artificial respiration if necessary</li></ul>
Skin Contact	<ul style="list-style-type: none"><li>▪ Call 911 for transport to hospital</li><li>▪ Remove contaminated clothing and quickly but gently wipe material off skin</li><li>▪ Flush with water</li></ul>
Eye Contact	<ul style="list-style-type: none"><li>▪ Call 911 for transport to hospital</li><li>▪ Flush eyes using eyewash station for a minimum of 15 minutes</li></ul>

## Storage

Storage Group OA – Oxidizing Acids

## Hazardous Waste

- Must be disposed of as per the [University's Hazardous Waste Standard](#).
- Perchloric acid stocks should be inspected monthly and prolonged storage should be avoided due to the potential formation of shock sensitive perchloric salts. **Do not mix waste with organic waste!**