

Acids That Deserve Special Attention

Description

Nitric acid is corrosive and its oxides are highly toxic. Because nitric acid is also an oxidizing agent, it may form flammable and explosive compounds with many materials (e.g., ethers, acetone and combustible materials).. Nitric acid should only be used in a fume hood and should be stored away from combustible materials.

Paper towels used to wipe up nitric acid spills may ignite spontaneously.



Perchloric acid may form unstable, and potentially explosive compounds with many organic compounds and metals. Perchloric acid should be used with extreme caution and only in a fume hood designed for perchloric acid. Please contact EH&S prior to using perchloric acid in a fume hood. Perchloric acid container should be placed on a glass tray that is deep enough to hold the contents of the bottle. Perchloric acid must be dated when received into the lab and again when opened. It should be disposed of one year from receipt or 6 months from opening, whichever may come first.



Picric acid can form explosive compounds with many combustible materials, especially when dry. When the moisture content decreases to less than 10%, picric acid will become unstable and may explode from being shaken, exposed to sudden changes of temperature, or from the friction created by opening the cap. Picric acid should be dated, stored as a flammable solid and not kept for extended periods.



Chromic acid and chromerge solutions— need to be handled with extreme care. If these are being used as cleaning solutions for glassware, it is recommended that they be replaced by other non-chromic acid cleaners such as “No-Chromix”. Their disposal is expensive. Chromic acid may be used with care if there are no other alternatives.



Hydrofluoric acid (HF) is extremely corrosive and will weaken glass. All forms (dilute, concentrated, or vapor) can cause serious burns. Burns from HF may not be felt immediately, will potentially cause severe tissue necrosis, and can be very painful. Inhalation of HF mists or vapors can cause serious respiratory tract damage and can be fatal. Therefore, hydrofluoric acid should be used in a suitable fume hood with proper gloves, safety glasses, and a lab coat being worn. HF will damage glass so this compound may only be stored in compatible containers such as high or low-density polyethylene or Teflon.

For more information on Hydrofluoric Acid, please check our webpage here: <https://www.ehs.ufl.edu/departments/research-safety-services/chemical-and-lab-safety/hydrofluoric-acid/>