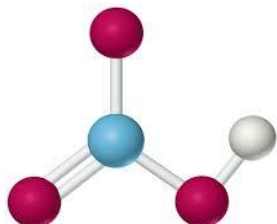


Spotlight On Safety

www.ehs.ucr.edu

SAFE USE OF NITRIC ACID



Nitric acid is a strong acid/ oxidizer. It contributes oxygen to reactions that may include flammable or combustible materials. Nitric acid is commercially available concentrated at 70%. Concentrations above 90% are called fuming nitric acid. On contact with air, fuming nitric acid gives off white or red fumes that are extremely corrosive and reactive with combustible materials. Follow the safety tips below to prevent any injuries or damage.

Incompatibilities

- ✦ Nitric acid reacts vigorously and violently with combustibles/flammables (including flammable organic solvents), bases, reducing agents, many metals and metal compounds
- ✦ Reaction products of nitric acid with organic chemicals or ammonia may also be **explosive**

Consequences

- ✦ Vapors, fumes and liquid nitric acid can severely burn the eyes and skin
- ✦ Nitric acid vapors and fumes are irritating to the respiratory system
- ✦ Inhalation of high concentrations of nitric acid vapor must be reported immediately (delaying treatment can result in lung edema and **death**)

Safety Precautions

- ✦ Gloves, splash goggles, face shield and an impervious apron must be worn when handling high concentrations of nitric acid
- ✦ All work with nitric acid should be done in a fume hood. Ensure that the hood is cleared of all flammable materials and any materials not directly involved in your experiment)
- ✦ When diluting nitric acid, add the acid to water **slowly**

Storage

- ✦ Store nitric acid in the original container (dilute solutions must be stored in acid-resistant bottles)
- ✦ Don't store nitric acid near materials with which it may react, such as bases, combustible materials(alcohol), and organic chemicals (acetone, acetic anhydride, and acetic acid)
- ✦ Store nitric acid in its own storage cabinet near floor level.
- ✦ If a dedicated storage cabinet is not available, store nitric acid with inorganic acids, segregated from the other acids in secondary containment (a plastic bin, tub or tote)

Spills

- ✦ If less than a few milliliters of concentrated acid or 100's of milliliters of dilute acid is spilled, the spill can be neutralized by adding soda ash or sodium bicarbonate and rinsing a lot with water
- ✦ If the spill is large (greater than 1 liter of concentrated acid or more than you have materials to handle), evacuate the laboratory, close the doors, and call EHS at 951-827-5528 during normal business hours and UCRPD at 951-827-5222 after hours, holidays, and weekends.

For more information please visit www.ehs.ucr.edu or call 951-827-5528.