

October 2001

Revised: September 2007

Picric acid is a common laboratory chemical that can become dangerous and result in bodily harm or extensive property damage if not managed properly.

Proper management can reduce the risk of explosion.

Deactivation services provided by a specialty contractor are recharged to the associated laboratory personnel.

University of Washington
Environmental Health and Safety
Box 354110
www.ehs.washington.edu

Picric Acid

CHARACTERISTICS

- Picric acid is a trinitroaromatic compound that is a flammable solid when purchased wet with 30% water, by mass.
- Picric acid is a high-powered explosive when allowed to dehydrate. As an explosive, picric acid is not shock sensitive, but when in contact with metals can form shock sensitive metal picrates.
- Picric acid can be detonated by extreme heat, a blasting cap, or an electric charge.

PHYSICAL APPEARANCE

Dehydrated picric acid appears as a yellow-orange colored, dry crystalline solid with visible air pockets below the surface. When wet with 30% water, picric acid is an orange colored, compact, crystalline solid with the consistency of wet sand. When dissolved in water or an organic solvent, picric acid forms a bright yellow solution.

HANDLING PRACTICES

Purchase picric acid in small quantities with phenolic resin caps only. Do not break the seal on the container until the material is needed. Store picric acid away from incompatible materials including metallic compounds. When picric acid is purchased, weigh the container and note the weight on the bottle. After the reagent is opened and an aliquot is taken note the weight of the container. Prior to subsequent use weigh the container. If the weight is less than the previous weight, add water to the container as

needed to maintain hydration at 30%.

After each use, wipe down the bottle neck, cap and threads with a wet clothe before resealing.

INCOMPATIBILITY

Extreme heat, blasting caps, or an electric charge can detonate picric acid. Do not allow picric acid to contact metal that is readily oxidized, or transfer the material to a container with a metal cap or metal spatula. Picric acid can form explosive metal picrates. Lead, iron and copper should be considered particularly dangerous metals. Metal picrates are extremely shock sensitive and will detonate with the slightest movement or vibration.

DISPOSAL

Complete a Chemical Waste Collection Request Form and submit it to EH&S at Box 354110 or FAX to 206-685-2915. The form is available on the EH&S web page <http://www.ehs.washington.edu/forms/epo/1470.pdf>.

Unstable items requiring special handling are above the baseline services provided by EH&S. The fee for this service is charged to the laboratory budget. Thus it pays to manage these materials carefully in order to both protect your safety and to save your financial resources.

Waste Collection Zones

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| Zone 0 | Offsite Locations | 206-685-2849 |
| Zone 1 | Upper Campus | 206-616-0587 |
| Zone 2 | UWMC | 206-616-0586 |
| Zone 3 | HSB/South Campus | 206-685-3200 |
| Zone 4 | HMC | 206-543-2931 |