

Carnegie Mellon University Environmental Health & Safety FIRE LAB WORK 	Environmental Health and Safety Picric Acid - Guideline
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1. Purpose

Carnegie Mellon University has developed this guideline to cover general procedures for the safe handling, storage, and disposal of picric acid.

2. Scope

This guideline applies to all Carnegie Mellon faculty and staff that use, handle, store, transport, or dispose of picric acid.

3. Definitions

Picric acid (trinitrophenol) is a yellow, water-soluble chemical that is highly sensitive to heat and shock under certain conditions. Picric acid is especially reactive with metals or metallic salts. Dry picric acid (less than 30% solution) is friction and heat sensitive, and is considered a highly shock sensitive chemical.

Metal caps and lids are especially susceptible to the formation of highly sensitive picrate salts. If dry crystals are present inside the container or cap threads, the friction from removing the cap may be sufficient to detonate the container.

4. Guidelines

a. Purchase

- i. Do not purchase large quantities of picric acid. Purchase the minimum amount of picric acid for your work.
- ii. When possible, purchase picric acid in solution (not as a dry solid).
- iii. Label all picric acid with the date received and be sure to reconcile in your groups chemical inventory.

b. Storage

- i. Store solid picric acid or picrate salts in distilled water (e.g., > 30% hydrated). Visually check the hydration every two months and add distilled water as necessary.
- ii. Label all picric acid with date of last hydration. Maintain an inventory of your picric acids and dates of hydration.
- iii. Do not store picric acid (solution or solid) in containers with metal caps or ground glass stoppers; these are especially susceptible to the formation of highly sensitive picrate salts.

c. Handling and Use

- i. After each use, wipe the bottleneck and cap threads with a damp cloth before closing the container of picric acid.
- ii. Do not use metal spatulas with picric acid solids.
- iii. DO NOT TOUCH, MOVE OR OPEN a container of dry picric acid; a minor disturbance or the friction caused by opening a crystallized lid can cause an explosion. CALL EH&S IMMEDIATELY at 412-268-8182 for stabilization and disposal.

d. Disposal

- i. Picric acid must be properly disposed through the University's chemical waste program, as long as the chemical is hydrated and no crystal formation is evident.
- ii. If the picric acid is dry and/or crystal formation is evident, CALL EH&S IMMEDIATELY at 412-268-8182 for stabilization and disposal. DO NOT TOUCH, MOVE OR OPEN CONTAINER. When in doubt, call EH&S for a determination.

For additional questions or concerns please contact EH&S: safety@andrew.cmu.edu