

Picric Acid

Work with picric acid requires special care. The Iowa State University Laboratory Safety Manual has prescriptive requirements for work with chemicals.

KNOW THE HAZARDS OF THE MATERIALS YOU ARE USING

All research activities at Ames Laboratory require approval by the Safety Review Committee. The procedure used for this approval is READINESS REVIEW. Make sure the activity you are working on has been approved via the Readiness Review procedure and that you are authorized to be performing work. Ask your supervisor.

General recommendations for working with picric acid:

Personal Protection

- **Eye Protection:** Splash-proof safety splash goggles.
- **Gloves:** Neoprene
- **Ventilation:** Use in a hood with at least 100 fpm face velocity.
- **Respirator:** Contact ESH&A regarding respiratory protection needs.
- **Clothing:** Lab coat and impervious apron if significant splash potential exists.

First Aid

- Wash any exposed areas of skin with large volumes of water.
- If contact has been made with the eye, flush eyes in eye wash for 15 minutes.
- Notify your supervisor, ESH&A and/or Occupational Medicine (294-2056) if an exposure has occurred.

Handling Precautions

- Picric acid is distributed by the manufacturer wet with greater than 10% water and is classified as a flammable solid.
- **NEVER ALLOW PICRIC ACID TO DRY OUT. DRY PICRIC ACID IS HIGHLY EXPLOSIVE!**
- Use the smallest amount of reagent possible to complete the experiment.
- Dry picric acid is especially explosive when combined with metals such as copper, lead, zinc or iron.
- Picric acid will react with alkaline materials including plaster and concrete to form explosive materials.
- If a container of picric acid is found of unknown age, **DO NOT ATTEMPT TO OPEN IT!** The container could explode from friction on the crystals between the grooves

of the cap and the threads. Call ESH&A for assistance (294-2153).

Storage/Disposal

- Material must be wet at all times. Inspect and add water every six months as needed.
- Materials older than 2 years should be disposed of through ESH&A (294-2153).
- Get rid of bottles of old bottles with metal caps.
- Keep container tightly closed.
- Stored in cool, dry area.
- Keep away from heat, sparks and open flame.

Spill Remediation

- Spills should be diluted with water and not allowed to dry. Use an inert, inorganic absorbent to soak up water-diluted spills of picric acid. A mop and water bucket may also be used.
- Contact ESH&A, 4-2153, for advice and assistance in spill remediation.
- Notify your supervisor of any spill that has occurred.

Physical Properties

CAS: ----- 88-89-1
Formula: ----- $C_6H_3N_3O_7$
Color: ----- Moist, yellow powder
Odor: ----- None
Melting Point: ----- $121^{\circ}C$
Density: ----- 7.9

References

Picric Acid Safety, from University of Wisconsin-Madison Web site, Department of Environmental Health, Safety & Risk Management.

Material Safety Data Sheet, Sigma Company, St. Louis, MO.

Handling of

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DISCLAIMER: This information is not intended to replace the Material Safety Data Sheet (MSDS). Always have access to a current MSDS for each chemical. It is the responsibility of the chemical user to be aware of the associated hazards.

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