

# SAFETY ALERT

## Picric Acid, Storage and Handling

### Who needs to read this?

Staff/Students who have/use/store/purchase Picric Acid

### Background Details

On 2 July 2013 a quantity of Picric Acid was found in B308 requiring disposal by external authorities due to the explosive nature and condition of the compound. Since then, subsequent quantities have been found in various locations across campus also requiring disposal.

### General Information

Picric Acid (2,4,6 - trinitrophenol) can be a very useful chemical reagent and is often found in laboratories. It is used for staining of cells during biology experiments.

Wetted picric acid is classified as a flammable solid (DG class 4.1) while dry Picric Acid is a highly explosive (DG class 1.1). Dry picric acid is highly unstable and sensitive to shock, heat or friction, especially when it is combined with metals such as copper, lead, zinc and iron. It will also react with alkaline materials including plaster and concrete to form explosive materials. ***The use of Picric Acid should be avoided wherever possible.***

### Identification of the Chemical

The normal appearance of solid Picric Acid is a fine, moist yellow powder, with the consistency of a clumpy paste, which tends to adhere to the sides of the bottle. Picric Acid makes a clear yellow, odourless solution, sometimes with un-dissolved solid powder at the bottom.





## Handling & Storage Requirements

Picric acid is distributed by the manufacturer in wet form with greater than 30% water and is classified as a flammable solid (DG class 4.1.). Labels must clearly display the:

- DG class
- Health and Safety statements
- Date purchased/date opened

## Recommendations:

All staff and students who are required to handle and store picric acid are to:

- Ensure minimum quantities are ordered and stored.
- All purchases of picric acid to be controlled through Purchasing Officer/Manager/Supervisor.
- Ensure that the chemical register is kept up to date on Chemaalert.
- Store in its original container within a polyethylene secondary container in a cool, dry, well-ventilated area, out of direct sunlight and away from sources of heat.
- Store with other inorganic acids.
- Visually inspect the bottle for identification and expiration date.
- Ensure that it is stored with at least 10% moisture content with regular inspections to ensure that the minimum moisture content is maintained.
- Ensure that a maintenance log of use and any water additions.
- Whether solid or in solution, there should be no crystals within the bottle, around the threads or cap as these unstable picrate salts are often more unstable and explosive than pure picric acid.
- Ensure that metal spatulas are not used in the handling of the chemical
- If the picric acid cannot be substituted, purchase as a 1% solution in water rather than a wetted dry solid.

## Training & Supervision Recommendations:

All staff and students who are required to use picric acid are to:

- Complete a laboratory induction that includes all controls in relation to Picric acid use, location of all safety equipment of eye wash, first aid kit, emergency contacts, correct PPE and spills management.
- Complete a risk assessment of all methods prior to commencing work with the chemical.



### Spills Management Recommendations:

Areas that require the use of picric acid need to:

- Ensure that the correct spills kit is available within the laboratory and that staff are trained in its use.
- Ensure that staff follows the correct procedures for safe disposal of containers of spilled product and contaminated absorbent material.

### Disposal Recommendations:

- Any Picric Acid which is known or suspected to be dry or has not been regularly maintained **MUST** be treated as **HIGHLY EXPLOSIVE**. In these cases, the area/lab/store must be secured to prevent access and the **Health and Safety Department must be notified IMMEDIATELY on 9266 4900 or 0401 103 830**.
- Any wetted Picric Acid older than 2 years must be disposed through the regular chemical disposal process – Contact the Health and Safety Department on 9266 4900 for more information on disposal.

### Who do we call with questions?

Please contact Health and Safety on 9266 4900 or [healthandsafety@curtin.edu.au](mailto:healthandsafety@curtin.edu.au).

**Date of Issue** : 29 October 2013