



Guidelines for the Safe Use of Picric Acid

2,4,6-trinitrophenol, also known as Picric Acid (CAS 88-89-1) , is a trinitro-aromatic compound related to trinitrotoluene (TNT) is used as a staining agent and reagent in laboratory procedures. The hazards associated with Picric Acid go beyond its acidic properties; it is unstable and has the ability to react with other materials and create explosive compounds.

Dry and dehydrated Picric Acid is an odourless bright yellow crystal; it is slightly soluble in water. It is highly unstable and highly sensitive to shock, heat or friction – it is a high-powered EXPLOSIVE. Dry Picric Acid can form very shock-sensitive, explosive picrate salts when in contact with concrete, amines, bases, and metals (copper, lead, mercury, and zinc); these unstable picrate salts are often more unstable and explosive than pure Picric Acid. When wet with 10% or more water, it is less hazardous.

Picric Acid that is wet with less than 30% water is an odourless, wet slurry of yellow crystals and has the consistency of wet sand and is DANGEROUSLY REACTIVE.

Picric Acid that with less than 5% water is classified as:

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Handling Information

Picric Acid is highly reactive with a wide variety of materials and easily forms picrate salts, which can be more reactive and shock sensitive than the acid. Metal picrates are extremely shock sensitive and will detonate with the slightest motion or vibration, they can be formed with metals such as copper, nickel, lead, iron and zinc. Calcium picrate is formed by the reaction of

Disposal of Picric Acid

Picric Acid should be disposed of as a hazardous waste within two years of initial receipt.

If:

- An old container of Picric Acid is found;
- There are crystals in the container;
- The Picric Acid does not appear to be wet; OR
- You cannot be determined what state the Picric Acid;

DO NOT TOUCH THE CONTAINER! Only experienced and knowledgeable personnel should handle Picric Acid in these situations - even a minor disturbance can be dangerous (crystals may have formed between the lid and the container). Attempting to open the container can result in an explosion.

Carefully inspect the container without moving it, looking for identification and an expiration date.

- If there is the slightest indication of crystallization or low water level (it should look like a wet paste), contact McGill Security Services immediately (**3000** Downtown Campus or **7777** Macdonald Campus, **55-555** MNI). Secure the area, restricting access) and lightly mist any crystals on the outside of the bottle with a spray bottle containing water.
- If there is no indication of crystallization or low water level, post a warning sign on the cupboard or area where the Picric Acid was discovered: "*Potentially Explosive Picric Acid – Do Not Touch*" and contact Hazardous Waste Management (514-398-5066 or www.mcgill.ca/hwm) and request a chemical pick-up

Dry Picric Acid or picrate salts should not be touched or moved under any circumstances!

References:

Handling of Picric Acid by Laboratory Personnel (HSE Tool #22). Department of Health, Safety and Environment, University of British Columbia. Version 1/24/2005.

Safe Use and Management of Picric Acid

