

Common Name: **2,4,6-TRINITROPHENOL**

Synonyms: Picric Acid; Carbazotic Acid; Phenol Trinitrate

CAS No: 88-89-1

Molecular Formula: C₆H₃N₃O₇

RTK Substance No: 1946

Description: Odorless, yellow-orange, crystalline solid when dry, or a bright yellow liquid when dissolved in water or an organic solvent

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<p>3 - Health</p> <p>4 - Fire</p> <p>4 - Reactivity</p> <p>DOT#: UN 0154</p> <p>ERG Guide #: 112</p> <p>Hazard Class: 1.1D (Explosive)</p>	<p>FLAMMABLE and REACTIVE SOLID WHEN DRY and a DANGEROUS FIRE and EXPLOSION HAZARD.</p> <p>2,4,6-Trinitrophenol may explosively decompose with heat, shock, friction or concussion.</p> <p><i>Water solutions of 2,4,6-Trinitrophenol are not combustible.</i></p> <p>Use dry chemical, CO₂, water spray, alcohol-resistant foam or other foam as extinguishing agents.</p> <p>POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Nitrogen Oxides</i>.</p> <p>CONTAINERS MAY EXPLODE IN FIRE.</p> <p>Use water spray to keep fire-exposed containers cool. Flow or agitation may generate electrostatic charges.</p> <p>2,4,6-Trinitrophenol may form an ignitable vapor/air mixture in closed tanks or containers.</p>	<p>2,4,6-Trinitrophenol must be kept wet or in solution at all times as <i>dry or crystallized 2,4,6-Trinitrophenol</i> can be detonated by HEAT, SHOCK, FRICTION, STATIC ELECTRICITY or CONCUSSION.</p> <p>2,4,6-Trinitrophenol will react with METALS (such as COPPER, IRON, LEAD, MERCURY and ZINC) to form <i>metal picrates</i> that are extremely shock sensitive and can be detonated by the slightest movement or vibration.</p> <p>2,4,6-Trinitrophenol may react violently with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); REDUCING AGENTS (such as LITHIUM, SODIUM, ALUMINUM and their HYDRIDES); AMMONIA; CONCRETE; PLASTER; GELATIN; and NITROGEN CONTAINING COMPOUNDS.</p>

SPILL/LEAKS

Isolation Distance:

Spills: 800 meters (1/2 mile)

Fire: 1,600 meters (1 mile)

DO NOT OPERATE transmitters within 100 meters (330 feet).

For *dry 2,4,6-Trinitrophenol*, consult a Specialist specifically trained in the clean-up of explosive materials.

Absorb liquids in dry sand, earth, or a similar material and place into sealed containers for disposal.

Use only non-sparking tools and equipment, especially when opening and closing containers of **2,4,6-Trinitrophenol**.

Keep spill wet at all times.

DO NOT wash into sewer.

2,4,6-Trinitrophenol is harmful to aquatic organisms.

PHYSICAL PROPERTIES

Odor Threshold:	Odorless
Flash Point:	302°F (150°C)
Auto Ignition Temp:	572°F (300°C)
Vapor Density:	7.9 (air = 1)
Vapor Pressure:	<1 mm Hg at 68°F (20°C)
Specific Gravity:	1.8 (water = 1)
Water Solubility:	Slightly soluble
Boiling Point:	Explodes above 572°F (300°C)
Melting Point:	252°F (122°C)
Molecular Weight:	229.1

EXPOSURE LIMITS

OSHA: 0.1 mg/m³, 8-hr TWA

NIOSH: 0.1 mg/m³, 10-hr TWA; 0.3 mg/m³, STEL

ACGIH: 0.1 mg/m³, 8-hr TWA

IDLH: 75 mg/m³

The Protective Action Criteria values are:

PAC-1 = 0.3 mg/m³ PAC-2 = 15 mg/m³

PAC-3 = 75 mg/m³

PROTECTIVE EQUIPMENT

Gloves:	Nitrile and Neoprene (1 to 4-hr breakthrough)
Coveralls:	Tychem® Responder® (>8-hr breakthrough for <i>solutions</i>)
Respirator:	>0.1 mg/m ³ - full facepiece APR with <i>P100 filters</i> >1 mg/m ³ - SCBA

HEALTH EFFECTS

Eyes:	Irritation and burns
Skin:	Irritation and burns
Inhalation:	Nose and throat irritation Headache, dizziness, nausea and vomiting

FIRST AID AND DECONTAMINATION

Remove the person from exposure.

Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn. Seek medical attention.

Quickly remove contaminated clothing and wash contaminated skin with large amounts of soap and water. Seek medical attention.

Begin artificial respiration if breathing has stopped and CPR if necessary.

Transfer promptly to a medical facility.