

2,6-DINITROPHENOL

DNH

CAUTIONARY RESPONSE INFORMATION

Common Synonyms beta-Dinitrophenol o-o-Dinitrophenol DNP	Solid crystal Yellow Sweet, musty odor
Sinks and mixes slowly with water.	
<p>Keep people away. AVOID CONTACT WITH SOLID AND DUST. Avoid inhalation. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Evacuate area in case of large discharges. Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	<p>Flammable. May explode if subjected to heat or flame. POISONOUS GAS IS PRODUCED WHEN HEATED. Evacuate surrounding area. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Combat fires from safe distance or protected location.</p>
Exposure	<p>CALL FOR MEDICAL AID. DUST. POISONOUS IF INHALED OR IF SKIN IS EXPOSED. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>SOLID POISONOUS IF SWALLOWED. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED, and victim is CONSCIOUS, have victim drink water or milk.</p>
Water Pollution	<p>HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
 Stop discharge
 Contain
 Collection Systems: Pump; Dredge
 Do not burn

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Currently not available; Phenol
 2.2 **Formula:** (NO₂)₂C₆H₄OH
 2.3 **IMO/UN Designation:** 6.1/1599
 2.4 **DOT ID No.:** 1599
 2.5 **CAS Registry No.:** 573-56-8
 2.6 **NAERG Guide No.:** 153
 2.7 **Standard Industrial Trade Classification:** 51140

3. HEALTH HAZARDS

3.1 **Personal Protective Equipment:** Safety glasses, self-contained breathing apparatus, protective clothing, butyl rubber gloves and protective shoes.

3.2 **Symptoms Following Exposure:** INHALATION, INGESTION AND SKIN ABSORPTION: Headache, anorexia, nausea, vomiting, abdominal pain, diarrhea, fever, pain in chest, difficult breathing, profuse sweating and thirst, dizziness and fatigue. SKIN: Discoloration and irritation. Corrosive to skin.

3.3 **Treatment of Exposure:** Call a doctor. INHALATION: Remove from contaminated area. Administer oxygen and artificial respiration if needed. EYES: Flush with water. SKIN: Wash with soap and water. INGESTION: Gastric lavage and saline cathartics. OTHER: To reduce fever, use cold packs and alcohol baths.

3.4 **TLV-TWA:** Not listed.
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 4; LD₅₀ below 50 mg/kg
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** Liver and kidney damage as well as development of cataracts. May cause skin discoloration and dermatitis.
 3.10 **Vapor (Gas) Irritant Characteristics:** Not pertinent
 3.11 **Liquid or Solid Characteristics:** Causes smarting of the skin and first-degree burns on short exposure; may cause second-degree burns on long exposure.
 3.12 **Odor Threshold:** 0.021 ppm.
 3.13 **IDLH Value:** Not listed.
 3.14 **OSHA PEL-TWA:** Not listed.
 3.15 **OSHA PEL-STEL:** Not listed.
 3.16 **OSHA PEL-Ceiling:** Not listed.
 3.17 **EPA AEGL:** Not listed

4. FIRE HAZARDS

4.1 **Flash Point:** Currently not available
 4.2 **Flammable Limits in Air:** Currently not available
 4.3 **Fire Extinguishing Agents:** Water, dry chemical, CO₂, foam
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
 4.5 **Special Hazards of Combustion Products:** Dissociation into irritating nitrogen oxides.
 4.6 **Behavior in Fire:** Can explode when heated under confinement.
 4.7 **Auto Ignition Temperature:** Currently not available
 4.8 **Electrical Hazards:** Not pertinent
 4.9 **Burning Rate:** Not pertinent
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** 30.9 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 10.0 (calc.)
 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

5.1 **Reactivity with Water:** No reaction
 5.2 **Reactivity with Common Materials:** No reaction
 5.3 **Stability During Transport:** Stable
 5.4 **Neutralizing Agents for Acids and Caustics:** Currently not available
 5.5 **Polymerization:** Not pertinent
 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

6.1 **Aquatic Toxicity:** 46.3-51.6 ppm/48 hr/bluegill/TL₅₀/20°C
 6.2 **Waterfowl Toxicity:** 25 ppm
 6.3 **Biological Oxygen Demand (BOD):** Currently not available
 6.4 **Food Chain Concentration Potential:** Currently not available
 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

7.1 **Grades of Purity:** Mixture 2, 3-, 2, 4-, and 2, 6-isomers.
 7.2 **Storage Temperature:** Avoid heat.
 7.3 **Inert Atmosphere:** Currently not available
 7.4 **Venting:** Currently not available
 7.5 **IMO Pollution Category:** Currently not available
 7.6 **Ship Type:** Currently not available
 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

8.1 **49 CFR Category:** Poison
 8.2 **49 CFR Class:** 6.1
 8.3 **49 CFR Package Group:** II
 8.4 **Marine Pollutant:** Yes
 8.5 **NFPA Hazard Classification:** Not listed
 8.6 **EPA Reportable Quantity:** Not listed.
 8.7 **EPA Pollution Category:** Not listed.
 8.8 **RCRA Waste Number:** Not listed
 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 **Physical State at 15° C and 1 atm:** Solid
 9.2 **Molecular Weight:** 184.11
 9.3 **Boiling Point at 1 atm:** Not pertinent
 9.4 **Freezing Point:** 145.4-147.2°F = 63-64°C = 336.2-337.2°K
 9.5 **Critical Temperature:** Not pertinent
 9.6 **Critical Pressure:** Not pertinent
 9.7 **Specific Gravity:** (est.) 1.68
 9.8 **Liquid Surface Tension:** Not pertinent
 9.9 **Liquid Water Interfacial Tension:** Not pertinent
 9.10 **Vapor (Gas) Specific Gravity:** 6.35
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
 9.12 **Latent Heat of Vaporization:** Not pertinent
 9.13 **Heat of Combustion:** -6156 Btu/lb = -3420 cal/g = -143.1 X 10⁵ J/kg
 9.14 **Heat of Decomposition:** Not pertinent
 9.15 **Heat of Solution:** Not pertinent
 9.16 **Heat of Polymerization:** Not pertinent
 9.17 **Heat of Fusion:** Currently not available
 9.18 **Limiting Value:** Currently not available
 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	S L I G H T L Y S O L U B L E		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT