2,5-DINITROPHENOL

DNE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid crystal	Yellow	Sweet musty
gamma-Dinitrophenol 2,5-DNP	Sinks and mixes slowly with water.		

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.

Fire	Flammable. May exploed 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.
Exposure	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. 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.
Water Pollution	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.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge
Contain
Collection Systems: Pump; Dredge
Chemical and Physical Treatment:
Neutralize
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Currently not available; Phenol
2.2 Formula: $(NO_2)_2C_6H_3OH$
2.3 IMO/UN Designation: 6.1/1599
2.4 DOT ID No.: 1599
2.5 CAS Registry No.: 329-71-5
2.6 NAERG Guide No.: 153
2.7 Standard Industrial Trade Classification: 51140

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Self-contained breathing apparatus, butyl rubber gloves, goggles, protective shoes and laboratory coat.
3.2 Symptoms Following Exposure: INHALATION, INGESTION OR SKIN ABSORPTION: Fatigue, thirst, sweating, flushing of face, nausea, vomiting, abdominal pain, diarrhea; restlessness, anxiety, excitement occasionaly leading to convulsions; fever, tachycardia, labored respiration, cyanosis, and sometimes muscle cramps. Loss of consciousness, cessation of breathing and death. EYES: Causes dilation of pupils or posterior subcapsular opacities or cataracts. SKIN: Discoloration, irritation, and dermatitis.
3.3 Treatment of Exposure: Call a doctor. INHALATION: Remove from contaminated area. Administer oxygen and artificial respiration as needed. EYES: Flush with water. SKIN: Wash with soap and water. INGESTION: Gastric lavage and saline cathartics. OTHER: If patient is feverish use cold packs and alcohol sponges.
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; LD_{50} below 50 mg/kg.
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Liver and kidney damage, cataracts, skin lesions and peripheral neutritis.
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: Currently not available
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, CO_2, foam.
4.4 Fire Extinguishing Agents Not to Be Used: Currently not available
4.5 Special Hazards of Combustion Products: Vapors are toxic.
4.6 Behavior in Fire: Can detonate or explode when heated under confinement.
4.7 Auto Ignition Temperature: Currently not available
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: Currently not available
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric 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: May detonate when heated under confinement.
5.4 Neutralizing Agents for Acids and Caustics: Currently not available
5.5 Polymerization: Currently not available
5.6 Inhibitor of Polymerization: Currently not available

6. WATER POLLUTION

6.1 Aquatic Toxicity: 100 ppm/fish/critical concentration 30 ppm/Minnow/toxic threshold
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 100 ppm caused 50% decrease in oxygen utilization.
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: 35% water.
7.2 Storage Temperature: Cool.
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: Currently not available
9.4 Freezing Point: 226.4°F = 108°C = 381.2°K.
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 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: (est.) –6130 Btu/lb = –3406 cal/g = -142.5×10^5 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
	INSOLUBLE		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT