

3-NITROPHENOL

NIP

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 3-Hydroxynitrobenzene m-Hydroxynitrobenzene m-Nitrophenol		Crystalline solid Colorless to pale yellow Sinks and mixes with water.
Keep people away. Avoid contact with solid, dust and vapor. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.		
Fire	Fire data not available. POISONOUS GASES MAY BE PRODUCED WHEN HEATED. Wear goggles and self-contained breathing apparatus.	
Exposure	CALL FOR MEDICAL AID. SOLID OR DUST If inhaled, swallowed, or if skin is exposed, may cause headache, lethargy, nausea, and cyanosis. Irritating to eyes. Move to fresh air. 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 and have victim induce vomiting. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.	
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 Stop discharge Collection Systems: Dredge	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: HOcH_2NO_2 2.3 IMO/UN Designation: 6.1/1663 2.4 DOT ID No.: 1663 2.5 CAS Registry No.: 554-84-7 2.6 NAERG Guide No.: 153 2.7 Standard Industrial Trade Classification: 51243
3. HEALTH HAZARDS	
3.1 Personal Protective Equipment: Wear butyl rubber gloves, protective clothing and shoes, and self-contained breathing apparatus.	
3.2 Symptoms Following Exposure: INHALATION: Inhalation or ingestion causes headaches, drowsiness, nausea, and blue color in lips, ears, and finger nails (cyanosis). EYES: Contact with eyes causes irritation. SKIN: Can be absorbed through intact skin to give same symptoms as for inhalation.	
3.3 Treatment of Exposure: Call a physician. INHALATION: Remove victim to fresh air; give artificial respiration if needed. EYES: Flush with water for 15 minutes. SKIN: Wash contaminated areas with soap and water. INGESTION: Remove by gastric lavage or emesis and catharsis.	
3.4 TLV-TWA: Not listed.	
3.5 TLV-STEL: Not listed.	
3.6 TLV-Ceiling: Not listed.	
3.7 Toxicity by Ingestion: Grade 2; LD_{50} = 0.5 to 5 g/kg.	
3.8 Toxicity by Inhalation: Currently not available.	
3.9 Chronic Toxicity: Chronic exposure adversely affects the neurohumoral regulation. Higher doses affect activity of all organs and systems such as gastritis, enteritis, colitis, hepatitis, neuritis, hyperplasia of the spleen, and hinders oxidation processes.	
3.10 Vapor (Gas) Irritant Characteristics: Currently not available	
3.11 Liquid or Solid Characteristics: Currently not available	
3.12 Odor Threshold: Limit concentration-acceptable odor concentration = 350.3 mg/l.	
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:**
Not pertinent (solid).
- 4.2 **Flammable Limits in Air:** Currently not available
- 4.3 **Fire Extinguishing Agents:** Currently not available
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Currently not available
- 4.5 **Special Hazards of Combustion Products:** Dangerous toxic fumes of NO_x .
- 4.6 **Behavior in Fire:** Currently not available
- 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 **Stoichiometric Air to Fuel Ratio:** 32.1 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 9.5 (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:**
Separate from combustible, organic, or other readily oxidizable materials.
- 5.3 **Stability During Transport:** Currently not available
- 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:**
9 to 10 ppm/6-hour/MLD/Minnow/distilled water/22°C
20 to 22 ppm/6-hour/MLD/Minnow/hard water/22°C
- 6.2 **Waterfowl Toxicity:** Waterfowl should not be exposed to more than 25 ppm.
- 6.3 **Biological Oxygen Demand (BOD):**
4.2%, 0.94 days
- 6.4 **Food Chain Concentration Potential:**
Currently not available
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 2
Human Contact hazard: 1
Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Currently not available
- 7.2 **Storage Temperature:** Currently not available
- 7.3 **Inert Atmosphere:** Currently not available
- 7.4 **Venting:** Currently not available
- 7.5 **IMO Pollution Category:** B
- 7.6 **Ship Type:** 2
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Keep Away From Food
- 8.2 **49 CFR Class:** 6.1
- 8.3 **49 CFR Package Group:** III
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** 100 pounds
- 8.7 **EPA Pollution Category:** B
- 8.8 **RCRA Waste Number:** Not listed
- 8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
- 9.2 **Molecular Weight:** 139.11
- 9.3 **Boiling Point at 1 atm:** At 70 mm Hg 381.2°F = 194°C = 467.2°K
- 9.4 **Freezing Point:** 206.6°F = 97°C = 370.2°K
- 9.5 **Critical Temperature:** Currently not available
- 9.6 **Critical Pressure:** Currently not available
- 9.7 **Specific Gravity:** 1.485 at 20°C 1.2797 at 100°C (Liquid)
- 9.8 **Liquid Surface Tension:** Currently not available
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** 4.8 (Calculated)
- 9.11 **Ratio of Specific Heats of Vapor (Gas):**
Currently not available
- 9.12 **Latent Heat of Vaporization:** Currently not available
- 9.13 **Heat of Combustion:** -8515 Btu/lb = -4731 cal/g = -198 X 10³ J/kg
- 9.14 **Heat of Decomposition:** Currently not available
- 9.15 **Heat of Solution:** Currently not available
- 9.16 **Heat of Polymerization:** Currently not available
- 9.17 **Heat of Fusion:** Currently not available
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

3-NITROPHENOL

NIP

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
212	79.889		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E

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
70	1.377	381	1.354		C U R R E N T L Y		C U R R E N T L Y
80	1.755				N O T		N O T
90	2.235				A V A I L A B L E		A V A I L A B L E
100	2.848						
110	3.628						
120	4.621						
130	5.887						
140	7.500						
150	9.555						
160	12.172						
170	15.506						
180	19.754						
190	25.165						
200	32.059						