O-CHLORONITROBENZENE

CNO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
1-Chloro-2-nitrobenzene
o-Nitrochlorobenzene

Solid crystals Yellow Aromatic

Sinks in water.

Keep people away. AVOID CONTACT WITH SOLID AND DUST.
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

Combustible.
POISONOUS GASES ARE PRODUCED IN FIRE.
Vapor may explode if ignited in an enclosed area.
Wear goggles and self-contained breathing apparatus.
Extinguish with water, foam, carbon dioxide or dry chemical.

Exposure

CALL FOR MEDICAL AID.
DUST
Irritating to eyes, nose, and throat.
If inhaled can cause headache, langour, cyanosis, shallow respiration, and coma.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

SOLID
Irritating to skin and eyes.
POISONOUS IF SWALLOWED OR SKIN IS EXPOSED.
Remove contaminated clothing and shoes.
Flush affected area 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.

Water Pollution

Dangerous to aquatic life in high 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
Contain
Collection Systems: Pump; Dredge
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $C_6H_4ClNO_2$
2.3 IMO/UN Designation: 6.1/1578
2.4 DOT ID No.: 1578
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: 152
2.7 Standard Industrial Trade Classification: 51489

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Rubber gloves, self-contained respirator, goggles, protective clothing, and safety shoes.
3.2 Symptoms Following Exposure: INHALATION: Headache, languour, anemia. Irritation of nose and throat, cyanosis, shallow respiration, convulsions, and coma. EYES: Irritation. SKIN: Irritation. INGESTION: Forms methemoglobin giving rise to cyanosis and blood changes.
3.3 Treatment of Exposure: Call a physician. INHALATION: Remove from exposure. If indicated give artificial respiration. EYES: Wash with water for at least 15 minutes. Get medical aid. SKIN: Wash with soap and running water. INGESTION: Give emetic, gastric lavage. Get medical aid.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD_{50} = 50 to 500 mg/kg.
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Weight loss, anemia, weakness and irritability.
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
3.11 Liquid or Solid Characteristics: Currently not available
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: 261°F C.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Water spray, foam, carbon dioxide, dry chemical (Water or foam may cause frothing).
4.4 Fire Extinguishing Agents Not to Be Used: Currently not available
4.5 Special Hazards of Combustion Products: Ignites at high temperatures with evolution of nitrogen oxide and chloride fumes.
4.6 Behavior in Fire: Volatile solid which gives off flammable vapors when heated; may form explosive mixtures with air.
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: 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: Currently not available
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Currently not available
5.6 Inhibitor of Polymerization: Currently not available

6. WATER POLLUTION

6.1 Aquatic Toxicity: 96-hour TL_m Finfish, 100 to 1000 ppm.
6.2 Waterfowl Toxicity: Currently not available
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: Currently not available
7.2 Storage Temperature: Cool
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: 1

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: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	1
Instability (Yellow).....	1

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: 157.56
9.3 Boiling Point at 1 atm: 474.8°F = 246°C = 519.2°K
9.4 Freezing Point: 90.5°F = 32.5°C = 363.7°K
9.5 Critical Temperature: Currently not available
9.6 Critical Pressure: Currently not available
9.7 Specific Gravity: 1.368 at 22°C (solid)
9.8 Liquid Surface Tension: 43.63 dynes/cm = 0.04363 N/m at 35°C
9.9 Liquid Water Interfacial Tension: Currently not available
9.10 Vapor (Gas) Specific Gravity: 5.4
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: Currently not available
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

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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
75 80 85 90 95 100 105	85.334 85.139 84.945 84.752 84.559 84.367 84.174		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE	90	26.400

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	250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470	0.689 1.874 2.972 3.991 4.940 5.825 6.653 7.430 8.160 8.846 9.494 10.105 10.683 11.231 11.751 12.245 12.715 13.162 13.589 13.996 14.385 14.757 15.114		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE