

# O-NITROTOLUENE

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## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> 2-Methyl nitrobenzene 2-Nitrotoluene Toluene, o-nitro		Oily liquid  Sinks in water.	Light yellow  Characteristic aromatic nitro compound odor
Keep people away. Avoid contact with liquid 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.			
<b>Fire</b>	Combustible. POISONOUS GASES MAY BE PRODUCED IN FIRE. Wear goggles, self-contained breathing apparatus and rubber overclothing (including gloves). Extinguish with water spray, carbon dioxide, or dry chemical.		
<b>Exposure</b>	CALL FOR MEDICAL AID.  VAPOR If inhaled, may cause headache, dizziness, nausea, vomiting, and difficult breathing. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID If swallowed or skin is exposed, may cause headache, dizziness, nausea, vomiting, and difficult breathing. 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.		
<b>Water Pollution</b>	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.		

<b>1. CORRECTIVE RESPONSE ACTIONS</b> Stop discharge Collection Systems: Pump; Dredge	<b>2. CHEMICAL DESIGNATIONS</b> 2.1 CG Compatibility Group: 42; Nitrocompound 2.2 Formula: C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub> 2.3 IMO/UN Designation: 6.1/1664 2.4 DOT ID No.: 1664 2.5 CAS Registry No.: 88-72-2 2.6 NAERG Guide No.: 152 2.7 Standard Industrial Trade Classification: 51140
<b>3. HEALTH HAZARDS</b> 3.1 <b>Personal Protective Equipment:</b> Wear butyl rubber gloves, protective working clothes, self-contained breathing apparatus, and protective shoes. 3.2 <b>Symptoms Following Exposure:</b> INHALATION, INGESTION, OR SKIN: Headache, flushing of face, dizziness, dyspnea (difficult breathing), cyanosis, nausea, vomiting, muscular weakness, increased pulse and respiratory rate, irritability, and convulsions. SKIN: Irritation. 3.3 <b>Treatment of Exposure:</b> Call a physician. INHALATION: Remove from source of exposure and rest. EYES: Wash with cold water. SKIN: Wash and scrub body surface including ear canals and nails. INGESTION: Gastric lavage followed by saline catharsis. Get medical aid. 3.4 TLV-TWA: 2 ppm 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 <b>Toxicity by Ingestion:</b> Grade 2; LD <sub>50</sub> 0.5 to 5 g/kg. 3.8 <b>Toxicity by Inhalation:</b> Currently not available. 3.9 <b>Chronic Toxicity:</b> Chronic exposure may produce a reversible anemia. Increased number of leucocytes and methemoglobin blood level, decreased number of erythrocytes and hemoglobin level. Impaired function of liver. 3.10 <b>Vapor (Gas) Irritant Characteristics:</b> Currently not available 3.11 <b>Liquid or Solid Characteristics:</b> No appreciable hazard. Practically harmless to skin. 3.12 <b>Odor Threshold:</b> 0.05 mg/l. 3.13 <b>IDLH Value:</b> 200 ppm 3.14 <b>OSHA PEL-TWA:</b> 5 ppm 3.15 <b>OSHA PEL-STEL:</b> Not listed. 3.16 <b>OSHA PEL-Ceiling:</b> Not listed. 3.17 <b>EPA AEGL:</b> Not listed	

<b>4. FIRE HAZARDS</b> 4.1 <b>Flash Point:</b> 203°F O.C. 223°F C.C. 4.2 <b>Flammable Limits in Air:</b> Currently not available 4.3 <b>Fire Extinguishing Agents:</b> Water, CO <sub>2</sub> , and dry chemical 4.4 <b>Fire Extinguishing Agents Not to Be Used:</b> Currently not available 4.5 <b>Special Hazards of Combustion Products:</b> Toxic fumes may be generated. 4.6 <b>Behavior in Fire:</b> Generates toxic fumes. 4.7 <b>Auto Ignition Temperature:</b> Currently not available 4.8 <b>Electrical Hazards:</b> Currently not available 4.9 <b>Burning Rate:</b> Currently not available 4.10 <b>Adiabatic Flame Temperature:</b> Currently not available 4.11 <b>Stoichiometric Air to Fuel Ratio:</b> 41.6 (calc.) 4.12 <b>Flame Temperature:</b> Currently not available 4.13 <b>Combustion Molar Ratio (Reactant to Product):</b> 11.5 (calc.) 4.14 <b>Minimum Oxygen Concentration for Combustion (MOCC):</b> Not listed	<b>7. SHIPPING INFORMATION</b> 7.1 <b>Grades of Purity:</b> Technical, 99.5% 7.2 <b>Storage Temperature:</b> Currently not available 7.3 <b>Inert Atmosphere:</b> Currently not available 7.4 <b>Venting:</b> Currently not available 7.5 <b>IMO Pollution Category:</b> B 7.6 <b>Ship Type:</b> 2 7.7 <b>Barge Hull Type:</b> 1  <b>8. HAZARD CLASSIFICATIONS</b> 8.1 <b>49 CFR Category:</b> Poison 8.2 <b>49 CFR Class:</b> 6.1 8.3 <b>49 CFR Package Group:</b> II 8.4 <b>Marine Pollutant:</b> Yes 8.5 <b>NFPA Hazard Classification:</b> <table border="0"> <tr> <td>Category</td> <td>Classification</td> </tr> <tr> <td>Health Hazard (Blue).....</td> <td>2</td> </tr> <tr> <td>Flammability (Red).....</td> <td>1</td> </tr> <tr> <td>Instability (Yellow).....</td> <td>4</td> </tr> </table> 8.6 <b>EPA Reportable Quantity:</b> 1000 pounds 8.7 <b>EPA Pollution Category:</b> C 8.8 <b>RCRA Waste Number:</b> Not listed 8.9 <b>EPA FWPCA List:</b> Yes	Category	Classification	Health Hazard (Blue).....	2	Flammability (Red).....	1	Instability (Yellow).....	4
Category	Classification								
Health Hazard (Blue).....	2								
Flammability (Red).....	1								
Instability (Yellow).....	4								
<b>5. CHEMICAL REACTIVITY</b> 5.1 <b>Reactivity with Water:</b> No reaction 5.2 <b>Reactivity with Common Materials:</b> No reaction 5.3 <b>Stability During Transport:</b> Stable 5.4 <b>Neutralizing Agents for Acids and Caustics:</b> Not pertinent 5.5 <b>Polymerization:</b> Will not occur 5.6 <b>Inhibitor of Polymerization:</b> Not pertinent	<b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b> 9.1 <b>Physical State at 15° C and 1 atm:</b> Liquid 9.2 <b>Molecular Weight:</b> 137.13 9.3 <b>Boiling Point at 1 atm:</b> 431.6°F = 222°C = 495.2°K 9.4 <b>Freezing Point:</b> 14°F = -10°C = 263.2°K 9.5 <b>Critical Temperature:</b> Currently not available 9.6 <b>Critical Pressure:</b> Currently not available 9.7 <b>Specific Gravity:</b> 1.1622 at 19°C/15°C 9.8 <b>Liquid Surface Tension:</b> 42.29 dynes/cm = 0.04229 N/m at 15°C 41.67 dynes/cm = 0.04167 N/m at 20°C 40.50 dynes/cm = 0.04050 N/m at 30°C 41.76 dynes/cm = 0.04176 N/m at 19.5°C 9.9 <b>Liquid Water Interfacial Tension:</b> 27.19 dynes/cm = 0.02719 N/m at 20°C 9.10 <b>Vapor (Gas) Specific Gravity:</b> 4.72 9.11 <b>Ratio of Specific Heats of Vapor (Gas):</b> Currently not available 9.12 <b>Latent Heat of Vaporization:</b> 151 Btu/lb = 83.8 cal/g = 3.5 X 10 <sup>5</sup> J/kg 9.13 <b>Heat of Combustion:</b> -11,290 Btu/lb = -6,272 cal/g = -262 X 10 <sup>3</sup> J/kg 9.14 <b>Heat of Decomposition:</b> Currently not available 9.15 <b>Heat of Solution:</b> Currently not available 9.16 <b>Heat of Polymerization:</b> Not pertinent 9.17 <b>Heat of Fusion:</b> Currently not available 9.18 <b>Limiting Value:</b> Currently not available 9.19 <b>Reid Vapor Pressure:</b> Low								
<b>6. WATER POLLUTION</b> 6.1 <b>Aquatic Toxicity:</b> 18 to 20 ppm/6-hour/TL <sub>m</sub> /Minnow/distilled water 35 to 40 ppm/6-hour/TL <sub>m</sub> /Minnow/hard water 10 to 100 ppm/96-hour/TL <sub>m</sub> /Finfish 6.2 <b>Waterfowl Toxicity:</b> Currently not available 6.3 <b>Biological Oxygen Demand (BOD):</b> Currently not available 6.4 <b>Food Chain Concentration Potential:</b> Currently not available 6.5 <b>GESAMP Hazard Profile:</b> Bioaccumulation: (T) Damage to living resources: 2 Human Oral hazard: 1 Human Contact hazard: II Reduction of amenities: XX	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
40	73.530		C	68	1.033	40	3.314
50	73.191		U			50	2.950
60	72.853		R			60	2.652
70	72.514		R			70	2.400
80	72.174		E			80	2.181
90	71.835		N			90	1.989
100	71.497		T			100	1.817
110	71.158		L			110	1.661
120	70.818		Y			120	1.519
130	70.480					130	1.388
140	70.141		N			140	1.267
150	69.801		O			150	1.154
160	69.462		T			160	1.049
170	69.124					170	0.950
180	68.785		A			180	0.856
190	68.445		V			190	0.768
200	68.106		A			200	0.684
210	67.768		I			210	0.604
			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
86	0.065	50	0.003	50	0.00006		C
		55	0.003	55	0.00008		U
		60	0.004	60	0.00009		R
		65	0.004	65	0.00010		R
		70	0.005	70	0.00012		E
		75	0.006	75	0.00014		N
		80	0.007	80	0.00017		T
		85	0.009	85	0.00020		L
		90	0.010	90	0.00023		Y
		95	0.012	95	0.00028		
		100	0.014	100	0.00032		N
		105	0.017	105	0.00038		O
		110	0.020	110	0.00045		T
		115	0.024	115	0.00053		
		120	0.028	120	0.00062		A
		125	0.033	125	0.00073		V
		130	0.039	130	0.00085		A
		135	0.047	135	0.00100		I
		140	0.055	140	0.00118		L
							A
							B
							L
							E