

# TETRANITROMETHANE

TNM

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b>		Liquid	Colorless or yellow	Pungent
NCI-C55947 Tetan TNM		Sinks in water.		
<p>Keep people away. Avoid contact with vapor or liquid. Evacuate Wear self-contained breathing apparatus and protective clothing and gloves. Shut off ignition sources and call fire department. Notify local health and pollution control authorities.</p>				
<b>Fire</b>	<p><b>COMBUSTIBLE.</b> May explode when heated. Emits toxic fumes under fire conditions. Wear self-contained breathing apparatus and protective clothing. Extinguish with water spray, dry chemical, CO<sub>2</sub>, or foam.</p>			
<b>Exposure</b>	<p>CALL FOR MEDICAL AID.</p> <p><b>VAPOR</b> May be fatal if inhaled or absorbed through the skin. Irritating to the eyes, nose, throat, and lungs. Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p><b>LIQUID</b> May be fatal if ingested or absorbed through the skin. Effects may be delayed. Causes eye and skin irritation. IF IN EYES: hold eyelids open, flush with running water for at least 15 minutes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF SWALLOWED: DO NOT INDUCE VOMITING. Keep victim quiet and maintain normal body temperature.</p>			
<b>Water Pollution</b>	<p>Effects of low concentrations on aquatic life are not known. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>			

<p><b>1. CORRECTIVE RESPONSE ACTIONS</b> Stop discharge Collection Systems: Pump; Dredge Do not burn</p>	<p><b>2. CHEMICAL DESIGNATIONS</b> 2.1 CG Compatibility Group: Not listed. 2.2 Formula: C(NO<sub>2</sub>)<sub>4</sub> 2.3 IMO/UN Designation: 5.1/1510 2.4 DOT ID No.: 1510 2.5 CAS Registry No.: 509-14-8 2.6 NAERG Guide No.: 143 2.7 Standard Industrial Trade Classification: 51140</p>
<p><b>3. HEALTH HAZARDS</b></p> <p>3.1 <b>Personal Protective Equipment:</b> Approved respirator, safety goggles, chemical resistant gloves, other protective clothing.</p> <p>3.2 <b>Symptoms Following Exposure:</b> Irritating to mucous membranes, upper respiratory tract, nose and eyes. Absorption into the body leads to the formation of methemoglobin which may lead to cyanosis. Onset may be delayed 2 to 4 hours or longer. Central nervous system depressant.</p> <p>3.3 <b>Treatment of Exposure:</b> EYES: Hold eyelids open and flush with running water for at least 15 minutes. SKIN: Remove contaminated clothing and shoes. Flush affected areas with running water for at least 15 minutes. Wash contaminated clothing before reuse. INGESTION: Call a physician.</p> <p>3.4 TLV-TWA: 0.005 ppm 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 3; LD<sub>50</sub> = 130 mg/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: May cause cyanosis due to formation of methemoglobin. Damage to heart and eyes. 3.10 Vapor (Gas) Irritant Characteristics: Vapors are moderately irritating such that personnel will not usually tolerate moderate or high concentrations. 3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin. 3.12 Odor Threshold: Currently not available 3.13 IDLH Value: 4 ppm 3.14 OSHA PEL-TWA: 1 ppm 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: Not listed. 3.17 EPA AEGL: Not listed</p>	

<p><b>4. FIRE HAZARDS</b></p> <p>4.1 Flash Point: &gt;230°F C.C. 4.2 Flammable Limits in Air: Currently not available 4.3 Fire Extinguishing Agents: Water spray, CO<sub>2</sub>, dry chemical, foam. 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent 4.5 Special Hazards of Combustion Products: Toxic fumes of NO<sub>x</sub>. 4.6 Behavior in Fire: May be explosive. 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: 4.8 (calc.) 4.12 Flame Temperature: Currently not available 4.13 Combustion Molar Ratio (Reactant to Product): 5.0 (calc.) 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed</p>	<p><b>7. SHIPPING INFORMATION</b></p> <p>7.1 Grades of Purity: 98% 7.2 Storage Temperature: Refrigerate 7.3 Inert Atmosphere: Currently not available 7.4 Venting: None 7.5 IMO Pollution Category: Currently not available 7.6 Ship Type: Currently not available 7.7 Barge Hull Type: Currently not available</p>								
<p><b>5. CHEMICAL REACTIVITY</b></p> <p>5.1 Reactivity with Water: No reaction 5.2 Reactivity with Common Materials: Incompatible with finely divided metals, iron and iron salts, copper, brass, zinc, or rubber. 5.3 Stability During Transport: Stable 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent 5.5 Polymerization: Not pertinent 5.6 Inhibitor of Polymerization: Not pertinent</p>	<p><b>8. HAZARD CLASSIFICATIONS</b></p> <p>8.1 49 CFR Category: Oxidizer 8.2 49 CFR Class: 5.1 8.3 49 CFR Package Group: I 8.4 Marine Pollutant: No 8.5 NFPA Hazard Classification:</p> <table border="1"> <tr> <td>Category</td> <td>Classification</td> </tr> <tr> <td>Health Hazard (Blue).....</td> <td>4</td> </tr> <tr> <td>Flammability (Red).....</td> <td>0</td> </tr> <tr> <td>Instability (Yellow).....</td> <td>4</td> </tr> </table> <p>8.6 EPA Reportable Quantity: 10 pounds 10 pounds 8.7 EPA Pollution Category: A 8.8 RCRA Waste Number: P112 8.9 EPA FWPCA List: Not listed</p>	Category	Classification	Health Hazard (Blue).....	4	Flammability (Red).....	0	Instability (Yellow).....	4
Category	Classification								
Health Hazard (Blue).....	4								
Flammability (Red).....	0								
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<p><b>6. WATER POLLUTION</b></p> <p>6.1 Aquatic Toxicity: Currently not available 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</p>	<p><b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b></p> <p>9.1 Physical State at 15° C and 1 atm: Liquid 9.2 Molecular Weight: 196.03 9.3 Boiling Point at 1 atm: 259°F = 126°C = 399°K 9.4 Freezing Point: 56°F = 13.5°C = 286.7°K 9.5 Critical Temperature: Currently not available 9.6 Critical Pressure: Currently not available 9.7 Specific Gravity: 1.6380 at 20°C 9.8 Liquid Surface Tension: Currently not available 9.9 Liquid Water Interfacial Tension: Currently not available 9.10 Vapor (Gas) Specific Gravity: 6.76 9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available 9.12 Latent Heat of Vaporization: 188 Btu/lb = 104 cal/g = 4.4 X 10<sup>5</sup> J/kg 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: 0.5 psia</p>								
<p>NOTES</p>									

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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
68	102.260		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
	I N S O L U B I L I T Y	80	0.226		C U R R E N T L Y	25	0.165
		90	0.339			50	0.170
		100	0.487			75	0.175
		110	0.676			100	0.180
		120	0.912			125	0.184
		130	1.202			150	0.189
		140	1.551			175	0.194
		150	1.967			200	0.199
		160	2.457			225	0.204
		170	3.027			250	0.208
		180	3.686			275	0.213
		190	4.441			300	0.218
		200	5.299			325	0.223
		210	6.269			350	0.228
		220	7.358			375	0.233
		230	8.575			400	0.237
		240	9.929			425	0.242
		250	11.429			450	0.247
						475	0.252
						500	0.257
						525	0.261
						550	0.266
						575	0.271
						600	0.276