M-NITROTOLUENE

NTR

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
3-Methyl nitrobenzene
3-Nitrotoluene
3-Nitrotoluol

Liquid Yellow Characteristic

Sinks and slowly mixes with water.

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.

Fire

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.

Exposure

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.

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
Contain
Collection Systems: Pump; Dredge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 42; Nitrocompound
2.2 Formula: $C_6H_4CH_3NO_2$
2.3 IMO/UN Designation: 6.1/1664
2.4 DOT ID No.: 1664
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: 152
2.7 Standard Industrial Trade Classification: 51140

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Protective clothing, including butyl rubber gloves and boots, safety goggles or face mask, respirator with approved canister or self-contained breathing apparatus.
3.2 Symptoms Following Exposure: INHALATION, INGESTION OR SKIN ABSORPTION: Headache, flushing of face, dizziness, difficult breathing, cyanosis, nausea, vomiting, muscular weakness, increased pulse and respiratory rate, irritability and convulsions. EYES: Slight irrita- tion. SKIN: Slight irritation.
3.3 Treatment of Exposure: Call a doctor. INHALATION: Remove from source of expo- sure and keep quiet. EYES: Flush with cold water. SKIN: Wash and scrub body surface including ear canals and nails. INGESTION: Give emetic, gastric lavage followed by saline cathartic.
3.4 TLV-TWA: 2 ppm.
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 can cause skin, eye, mucous membrane and respiratory irritation. Caused anemia and other blood changes in rats.
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harm- less to skin.
3.12 Odor Threshold: 1.74 ppm.
3.13 IDLH Value: 200 ppm
3.14 OSHA PEL-TWA: 5 ppm.
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: 223°F C.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Carbon dioxide, dry chemical, carbon tetrachloride, or water fog.
4.4 Fire Extinguishing Agents Not to Be Used: Water or foam may cause frothing.
4.5 Special Hazards of Combustion Products: Emits toxic fumes of oxides of nitrogen.
4.6 Behavior in Fire: Emits toxic fumes.
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: 41.6 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 11.5 (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: No reaction
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

6. WATER POLLUTION

6.1 Aquatic Toxicity:
30 ppm/96 hr/fathead minnow/TL_m.
25-20ppm/6 hr/minnow/LC_{Lo}/hard water/21°C
14-18 ppm/6 hr/minnow/LC_{Lo}/Distilled water/23°C
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 53%/1.66 lb/lb/5 days 62%/1.94 lb/lb/10 days 70%/2.19 lb/lb/15 days 80%/2.50 lb/lb/20 days
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: (T)
Damage to living resources: 2
Human Oral hazard: 2
Human Contact hazard: I
Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Currently not available
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Pressure-vacuum
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:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	1
Instability (Yellow).....	4

8.6 EPA Reportable Quantity: 1000 pounds
8.7 EPA Pollution Category: C
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: Liquid
9.2 Molecular Weight: 137.13.
9.3 Boiling Point at 1 atm: 450°F = 232.6°C = 505.8°K.
9.4 Freezing Point: 60.8°F = 16.0°C = 289.2°K.
9.5 Critical Temperature: (est.) 899.2°F = 481.8°C = 754.9°K.
9.6 Critical Pressure: (est.) 611.8 psia = 41.6 atm = 4.22 MN/m^2.
9.7 Specific Gravity: 1.1571 at 20°C.
9.8 Liquid Surface Tension: 39.07 dynes/cm = 0.03907 N/m at 40°C.
9.9 Liquid Water Interfacial Tension: 34.9 dynes/cm = 0.0349 N/m at 40°C.
9.10 Vapor (Gas) Specific Gravity: 4.73.
9.11 Ratio of Specific Heats of Vapor (Gas): (est.) >1.
9.12 Latent Heat of Vaporization: (est.) at boiling point- 155.3 Btu/lb = 86.3 cal/g = 3.61 X 10^5 J/kg
9.13 Heat of Combustion: (est.) –11232 Btu/lb = –6240 cal/g = –261.1 X 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
60	72.566		CURRENTLY NOT AVAILABLE	75	0.967	70	2.292
70	72.242			80	0.963	75	2.149
80	71.919			85	0.960	80	2.022
90	71.594			90	0.956	85	1.910
100	71.270			95	0.953	90	1.810
110	70.945			100	0.949	95	1.719
120	70.622			105	0.946	100	1.638
130	70.297			110	0.942	105	1.563
140	69.973			115	0.938	110	1.495
150	69.648			120	0.935	115	1.433
160	69.325					120	1.376
170	69.000					125	1.323
180	68.676					130	1.274
190	68.351					135	1.229
200	68.028					140	1.186
210	67.704						
220	67.379						
230	67.054						
240	66.731						

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	0.050	70	0.003	70	0.00007		CURRENTLY NOT AVAILABLE
		75	0.004	75	0.00009		
		80	0.004	80	0.00010		
		85	0.005	85	0.00012		
		90	0.006	90	0.00014		
		95	0.007	95	0.00017		
		100	0.009	100	0.00020		
		105	0.010	105	0.00023		
		110	0.012	110	0.00028		
		115	0.015	115	0.00032		
		120	0.017	120	0.00038		
		125	0.021	125	0.00045		
		130	0.024	130	0.00053		
		135	0.029	135	0.00062		
		140	0.034	140	0.00073		