2,4-DINITROTOLUENE

DTT

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
2,4-Dinitrotoluol
DNT
1-Methyl-2, 4-dinitrobenzene

Solid or heated liquid | Yellow to red solid or yellow liquid | Slight odor

Liquid solidifies. Solid and liquid sink in water.

KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND SOLID.
Avoid inhalation.
Wear 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.
Containers may explode in fire.
Wear goggles and self-contained breathing appartus.
Extinguish with water, dry chemicals, foam, or carbon dioxide.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

LIQUID OR SOLID
POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED.
Will burn skin and eyes.
If swallowed will cause nausea, vomiting or loss of consciousness.
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 SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.

Water Pollution

Effect of low concentrations on aquatic life is unknown.
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: Skim; Dredge
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: 2, 4-$(NO_2)_2C_6H_3CH_3$
2.3 IMO/UN Designation: Solid: 6.1/2038; liquid: 6.1/1600
2.4 DOT ID No.: 1600 (Liquid); 2038 (Solid)
2.5 CAS Registry No.: 121-14-2
2.6 NAERG Guide No.: 152
2.7 Standard Industrial Trade Classification: 51140

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Air-line mask or self-contained breathing apparatus; safety goggles and face shield; rubber gloves and boots; protective clothing.
3.2 Symptoms Following Exposure: Ingestion or overexposure to vapors from hot liquid can cause loss of color, nausea, headache, dizziness, drowsiness, collapse. Hot liquid can burn eyes and skin. Prolonged skin contact with solid can give same symptoms as after inhalation or ingestion.
3.3 Treatment of Exposure: INHALATION: remove victim from exposure; get medical attention for methemoglobinemia. EYES: flush with copious amounts of water and get medical attention. SKIN: wash well with soap and water. INGESTION: induce vomiting, if victim is conscious; give gastric lavage and saline cathartic; get medical attention.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 4; oral LD_{50} = 30 mg/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: May cause liver damage, anemia, neuritis.
3.10 Vapor (Gas) Irritant Characteristics: Not pertinent
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: 404°F C.C.
4.2 Flammable Limits in Air: Not pertinent
4.3 Fire Extinguishing Agents: Water, dry chemical, carbon dioxide from protected location
4.4 Fire Extinguishing Agents Not to Be Used: Currently not available
4.5 Special Hazards of Combustion Products: Nitrogen oxides and dense black smoke are produced in a fire.
4.6 Behavior in Fire: Decomposition is self-sustaining at 280°C. Containers may explode in a fire.
4.7 Auto Ignition Temperature: Not pertinent
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Not pertinent
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 40.5 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 12.0 (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 below 482°F (250°C)
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: 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

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical. Mixtures such as an 80:20 mixture of 2, 4- and 2, 6-isomers are also available. The hazard properties are similar.
7.2 Storage Temperature: Ambient (solid); >90°C (liquid)
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester)
7.5 IMO Pollution Category: A
7.6 Ship Type: 2
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: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	1
Instability (Yellow).....	3

8.6 EPA Reportable Quantity: 10 pounds
8.7 EPA Pollution Category: A
8.8 RCRA Waste Number: U105/D030
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: 182.1
9.3 Boiling Point at 1 atm: Decomposes
9.4 Freezing Point: 158°F = 70°C = 343°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.379 at 20°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: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: 170 Btu/lb = 93 cal/g = 3.9 X 10^5 J/kg
9.13 Heat of Combustion: –8,305 Btu/lb = –4,614 cal/g = –193.0 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: 26.40 cal/g
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
	NOT PERTINENT	211	0.349		NOT PERTINENT		NOT PERTINENT

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
34	0.021		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT
36	0.022						
38	0.022						
40	0.022						
42	0.022						
44	0.023						
46	0.023						
48	0.023						
50	0.024						
52	0.024						
54	0.024						
56	0.024						
58	0.025						
60	0.025						
62	0.025						
64	0.026						
66	0.026						
68	0.026						
70	0.026						
72	0.027						
74	0.027						
76	0.027						
78	0.028						
80	0.028						
82	0.028						
84	0.029						