

Material Safety Data Sheet

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Version 1.2

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name	3,4-DINITROTOLUENE, 99%
Product Number	148121
Company	Sigma-Aldrich Pty. Ltd. 12 Anella Avenue Castle Hill NSW 2154 Australia
Technical Phone #	+61 2 9841 0555 (1800 800 097)
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
3,4-DINITROTOLUENE, 98% (GC)	610-39-9	210-222-1	609-051-00-9
Formula	C7H6N2O4		
Molecular Weight	182.14 AMU		
Synonyms	Benzene, 4-methyl-1,2-dinitro- (9CI) * 3,4-Dinitrotoluene * 3,4-DNT * 4-Methyl-1,2-dinitrobenzene		

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

May cause cancer. Also toxic by inhalation, in contact with skin and if swallowed. Also harmful: danger of serious damage to health by prolonged exposure if swallowed. Possible risk of impaired fertility. Also possible risks of irreversible effects. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Carc. Cat.2 Muta. Cat.3 Repr. Cat.3

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide. Dry chemical powder.
Explosion Hazards: Container explosion may occur under fire conditions. May explode when heated.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Store in a cool dry place.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse. Discard contaminated shoes.

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	0.15 mg/m3

Remarks: H

EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	1.5 mg/m3

Remarks: H, TRK, DK

EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	0.15 mg/m3

Remarks: HK

PERSONAL PROTECTIVE EQUIPMENT

Special Protective Measures: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

9 - Physical and Chemical Properties

Appearance	N/A	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	54 - 57 °C	
Flash Point	113 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	N/A	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Conditions to Avoid: Heat.

Materials to Avoid: Oxidizing agents, Reducing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

11 - Toxicological Information

RTECS NUMBER: XT2100000

ACUTE TOXICITY

LD50

Oral

Rat

807 mg/kg

LD50

Oral

Mouse

747 mg/kg

Remarks: Behavioral: Somnolence (general depressed activity).

IRRITATION DATA

Skin

Rabbit

500 mg
24H
Remarks: Mild irritation effect

SIGNS AND SYMPTOMS OF EXPOSURE

Damage to the liver. Blood effects. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

ROUTE OF EXPOSURE

Multiple Routes: May be fatal if inhaled, swallowed, or absorbed through skin. May cause irritation.

TARGET ORGAN INFORMATION

Damage to the liver.

CHRONIC EXPOSURE - MUTAGEN

Rat
300 UMOL/L
Cell Type: liver
DNA damage

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

The material should be ignited in the presence of sodium carbonate and slaked lime (calcium hydroxide). The substance should be mixed with vermiculite and then with the dry caustics, wrapped in paper and burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 3454
Class: 6.1
PG: II
Proper Shipping Name: Dinitrotoluenes, solid

IMDG

UN#: 3454
Class: 6.1
PG: II
Proper Shipping Name: Dinitrotoluenes, solid
Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 3454
Class: 6.1
PG: II
Proper Shipping Name: Dinitrotoluenes, solid
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 609-051-00-9

NOTA: E

INDICATION OF DANGER: T N

Toxic. Dangerous for the environment.

R-PHRASES: 45 23/24/25 48/22 62 68 51/53

May cause cancer. Also toxic by inhalation, in contact with skin and if swallowed. Also harmful: danger of serious damage to health by prolonged exposure if swallowed. Possible risk of impaired fertility. Also possible risks of irreversible effects. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-PHRASES: 53 45 61

Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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