

Material Safety Data Sheet

2,3-Dinitrotoluene, 99%

ACC# 69448

Section 1 - Chemical Product and Company Identification

MSDS Name: 2,3-Dinitrotoluene, 99%

Catalog Numbers: AC164380000, AC164380050

Synonyms: 1-Methyl-2,3-Dinitrobenzene.

Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
602-01-7	2,3-Dinitrotoluene	99	210-013-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: light yellow crystals.

Warning! Causes eye irritation. Methemoglobin former - can cause cyanosis. May be harmful if swallowed. May cause skin irritation. May cause respiratory tract irritation. Danger of cumulative effects. May cause liver damage.

Target Organs: Blood, liver, blood forming organs.

Potential Health Effects

Eye: Causes eye irritation. May cause chemical conjunctivitis.

Skin: May cause skin irritation. May cause cyanosis of the extremities.

Ingestion: May cause irritation of the digestive tract. May cause liver damage. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored blood. Overexposure may cause methemoglobinemia. May be harmful if swallowed.

Inhalation: May cause respiratory tract irritation. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown blood. Inhalation can cause systemic acidosis and methemoglobinemia. May cause liver damage.

Chronic: Prolonged exposure may cause anemia and methemoglobinemia, characterized by dizziness, drowsiness, headache, breath shortness, cyanosis (bluish skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored blood. May cause cancer according to animal studies. Chronic exposure may cause liver damage. There is a danger of cumulative effects.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Alcoholic beverage consumption may enhance the toxic effects of this substance. For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood.

Antidote: Methylene blue, alone or in combination with oxygen is indicated as a treatment in nitrite induced methemoglobinemia.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 3

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
2,3-Dinitrotoluene	none listed	none listed	none listed
Dinitrotoluene (mixed isomers)	0.2 mg/m3 TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	1.5 mg/m3 TWA 50 mg/m3 IDLH	1.5 mg/m3 TWA

OSHA Vacated PELs: 2,3-Dinitrotoluene: No OSHA Vacated PELs are listed for this chemical. Dinitrotoluene (mixed isomers): 1.5 mg/m3 TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: light yellow

Odor: None reported.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 59.00 - 61.00 deg C

Decomposition Temperature: Not available.

Solubility: Not available.

Specific Gravity/Density: Not available.

Molecular Formula: C7H6N2O4

Molecular Weight: 182.14

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Dust generation, excess heat.

Incompatibilities with Other Materials: Oxidizing agents.

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

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 602-01-7: XT1400000

CAS# 25321-14-6: XT1300000

LD50/LC50:

CAS# 602-01-7:

Draize test, rabbit, skin: 500 mg/24H Mild;

Oral, mouse: LD50 = 1072 mg/kg;

Oral, rat: LD50 = 911 mg/kg;

CAS# 25321-14-6:

Oral, mouse: LD50 = 750 mg/kg;

Carcinogenicity:

CAS# 602-01-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 25321-14-6:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 5/1/96
- **NTP:** Not listed.
- **IARC:** Not listed.

Epidemiology: No information found**Teratogenicity:** No information found**Reproductive Effects:** No information found**Mutagenicity:** Mutagenic effects have occurred in experimental animals.**Neurotoxicity:** No information found**Other Studies:**

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: 330ug/L; 96H; Static No data available.**Environmental:** If released to soil, it will be expected to have moderate mobility and may leach to groundwater. If released to water, 2,3-DNT will not be expected to bioconcentrate in aquatic organisms but may moderately sorb to sediment. river, bay, and pond waters, respectively. If it is released to the atmosphere, 2,3-DNT may be susceptible to direct photolysis based on the behavior of 2,4-dinitrotoluene in water. The estimated vapor phase half-life in the atmosphere is 8 hr.**Physical:** Expected to biodegrade but not bioconcentrate.**Other:** For more information, see "HANDBOOK OF ENVIRONMENTAL FATE AND EXPOSURE DATA."

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.**RCRA U-Series:** None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	DOT regulated - small quantity provisions apply (see 49CFR173.4)	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 602-01-7 is listed on the TSCA inventory.

CAS# 25321-14-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 25321-14-6: 10 lb final RQ; 4.54 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313

This material contains Dinitrotoluene (mixed isomers) (CAS# 25321-14-6, -%), which is subject to the reporting requirements of Section 313 of SARA Title

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 25321-14-6 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 25321-14-6 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 602-01-7 can be found on the following state right to know lists: California.

CAS# 25321-14-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

WARNING: This product contains Dinitrotoluene (mixed isomers), a chemical known to the state of California to cause cancer. WARNING: This product contains Dinitrotoluene (mixed isomers), a chemical known to the state of California to cause male reproductive toxicity. California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

T N

Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 45 May cause cancer.

R 48/22 Harmful : danger of serious damage to health by prolonged exposure if swallowed.

R 62 Possible risk of impaired fertility.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 602-01-7: No information available.

CAS# 25321-14-6: No information available.

Canada - DSL/NDSL

CAS# 25321-14-6 is listed on Canada's DSL List.

CAS# 602-01-7 is listed on Canada's NDSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 25321-14-6 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997

Revision #6 Date: 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.