

MATERIAL SAFETY DATA SHEET

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Version 1.5

Section 1 - Product and Company Information

Product Name 1,3-DINITROBENZENE, 97%
Product Number D194255
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
1,3-DINITROBENZENE	99-65-0	Yes

Formula C₆H₄N₂O₄
Synonyms Benzene, 1,3-dinitro- * Binitrobenzene *
m-Dinitrobenzene * 1,3-Dinitrobenzene *
2,4-Dinitrobenzene * m-Dinitrobenzene
(ACGIH:OSHA) * 1,3-Dinitrobenzol * Dwunitrobenzen
(Polish)

RTECS Number: CZ7350000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment.
Heating may cause an explosion. Very toxic by inhalation, in
contact with skin and if swallowed. Danger of cumulative effects.
Very toxic to aquatic organisms, may cause long-term adverse
effects in the aquatic environment.
Target organ(s): Blood. Liver. Calif. Prop. 65 developmental
hazard.

HMIS RATING

HEALTH: 3*
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING

HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

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

INHALATION EXPOSURE

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

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

EXPLOSION HAZARDS

May explode when heated.

EXPLOSION DATA

Sensitivity to Mechanical Impact: May be shock-sensitive.
Dust Potential: This material, like most materials in powder form, is capable of creating a dust explosion.

FLASH POINT

302 °F 150 °C Method: closed cup

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

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.

Section 7 - Handling and Storage

Decomposition Temp.	N/A	
Flash Point	302 °F 150 °C	Method: closed cup
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

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

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be fatal if absorbed through skin.

Eye Contact: May cause eye irritation.

Inhalation: May be fatal if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be fatal if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Liver. Blood.

SIGNS AND SYMPTOMS OF EXPOSURE

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. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

TOXICITY DATA

Oral
Human
28 mg/kg
LDLO

Oral
Rat
59.5 mg/kg
LD50

Remarks: Lungs, Thorax, or Respiration: Dyspnea.

Behavioral: Somnolence (general depressed activity). Skin and Appendages: Other: Hair.

Intraperitoneal

Rat
28 MG/KG
LD50

Oral
Mouse
74.7 mg/kg
LD50

Remarks: Lungs, Thorax, or Respiration:Respiratory stimulation.
Behavioral:Somnolence (general depressed activity).
Behavioral:Tremor.

Intravenous
Dog
10 MG/KG
LD50

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Behavioral:Convulsions or effect on seizure threshold. Blood:Methemoglobinemia-Carboxyhemoglobin.

Skin
Rabbit
1900 mg/kg
LD50

Oral
Bird (wild)
42 mg/kg
LD50

IRRITATION DATA

Eyes
Rabbit
100 mg

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Rat
Dose: 24 MG/KG
Route of Application: Oral
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat
Dose: 33600 UG/KG
Route of Application: Oral
Exposure Time: (16W PRE)
Result: Maternal Effects: Ovaries, fallopian tubes.

Species: Rat
Dose: 48 MG/KG
Route of Application: Oral
Exposure Time: (1D MALE)
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

Species: Rat
Dose: 90 MG/KG
Route of Application: Oral
Exposure Time: (12W MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Rat
Dose: 10 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Paternal Effects: Other effects on male.

Species: Mouse
Dose: 48 MG/KG
Route of Application: Oral
Exposure Time: (1D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.
Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Dinitrobenzenes, solid
UN#: 3443
Class: 6.1
Packing Group: Packing Group II
Hazard Label: Toxic substances.
PIH: Not PIH

IATA

Proper Shipping Name: Dinitrobenzenes, solid
IATA UN Number: 3443
Hazard Class: 6.1
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T+-N
Indication of Danger: Very toxic. Dangerous for the environment.
R: 26/27/28-33-50/53
Risk Statements: Very toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S: 28-36/37-45-60-61
Safety Statements: After contact with skin, wash immediately

with plenty of soap-suds. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Highly Toxic (USA) Very Toxic (EU).
Dangerous for the environment.

Risk Statements: Heating may cause an explosion. Very toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements: After contact with skin, wash immediately with plenty of soap-suds. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements: Target organ(s): Blood. Liver. Calif. Prop. 65 developmental hazard.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

DEMINIMIS: 1 %

NOTES: This product is subject to SARA section 313 reporting requirements.

TSCA INVENTORY ITEM: Yes

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause male developmental toxicity.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

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 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.