

1 Identification

Product identifier

Product name: 2,4-Dinitroaniline

Stock number: B21080, L07446

CAS Number:
97-02-9

EC number:
202-553-5

Index number:
612-040-00-1

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to the liver, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS06 GHS08

Signal word

Danger

Hazard statements

H302 Harmful if swallowed.

H310+H330 Fatal in contact with skin or if inhaled.

H373 May cause damage to the liver, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

P320 Specific treatment is urgent (see on this label).

P361 Take off immediately all contaminated clothing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	3	Health (acute effects) = 3
FIRE	1	Flammability = 1
REACTIVITY	1	Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Product name: 2,4-Dinitroaniline

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3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
97-02-9 2,4-Dinitroaniline
Identification number(s):
EC number: 202-553-5
Index number: 612-040-00-1

4 First-aid measures

Description of first aid measures
General information
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Do not induce vomiting; immediately call for medical help.
Information for doctor
Most important symptoms and effects, both acute and delayed Methemoglobinemia
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards: No special measures required.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Open and handle container with care.
Information about protection against explosions and fires: No information known.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Store away from oxidizing agents.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: No data
Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use self-contained respiratory protective device in emergency situations.
Protection of hands:
Impervious gloves

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USA

Product name: 2,4-Dinitroaniline	
Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Eye protection: Safety glasses Body protection: Protective work clothing. (Contd. of page 2)	
9 Physical and chemical properties	
Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Powder
Color:	Yellow
Odor:	Not determined
Odor threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	176-180 °C (349-356 °F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
Danger of explosion: Product does not present an explosion hazard.	
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	1.61 g/cm ³ (13.435 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Insoluble
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information	No further relevant information available.
10 Stability and reactivity	
Reactivity No information known.	
Chemical stability Stable under recommended storage conditions.	
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.	
Possibility of hazardous reactions No dangerous reactions known	
Conditions to avoid No further relevant information available.	
Incompatible materials: Oxidizing agents	
Hazardous decomposition products:	
Carbon monoxide and carbon dioxide	
Nitrogen oxides	
11 Toxicological information	
Information on toxicological effects	
Acute toxicity:	
Fatal if inhaled.	
Fatal in contact with skin.	
Fatal if swallowed.	
Danger through skin absorption.	
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.	
LD/LC50 values that are relevant for classification:	
Oral LD50 418 mg/kg (rat)	
Skin irritation or corrosion: Irritant to skin and mucous membranes.	
Eye irritation or corrosion: Irritating effect.	
Sensitization: No sensitizing effects known.	
Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.	
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.	
Reproductive toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.	
Specific target organ system toxicity - repeated exposure:	
May cause damage to the liver, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.	
Specific target organ system toxicity - single exposure: No effects known.	
Aspiration hazard: No effects known.	
Other information (about experimental toxicology):	
Reproductive effects have been observed on tests with laboratory animals.	
Mutagenic effects have been observed on tests with bacteria.	
Mutagenic effects have been observed on tests with laboratory animals.	
Subacute to chronic toxicity:	
The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:	
Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).	
Reproductive - Fertility - pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea)	
Reproductive - Effects on Embryo or Fetus - fetal death.	
Absorption into the body may lead to the formation of methemoglobin, producing cyanosis, and marked fall in blood pressure leading to collapse, coma and possibly death. Onset may be delayed 2-4 hours or longer.	
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	
12 Ecological information	
Toxicity	
Aquatic toxicity: No further relevant information available.	
(Contd. on page 4)	

Product name: 2,4-Dinitroaniline	
Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxical effects: Remark: Toxic for aquatic organisms Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Toxic for aquatic organisms Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Toxic to aquatic life. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.	(Contd. of page 3)

13 Disposal considerations
Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.

14 Transport information	
UN-Number DOT, IMDG, IATA	UN1596
UN proper shipping name DOT IMDG, IATA	Dinitroanilines DINITROANILINES
Transport hazard class(es) DOT	
	
Class Label Class Label IMDG, IATA	6.1 Toxic substances. 6.1 6.1 (T2) Toxic substances 6.1
	
Class Label	6.1 Toxic substances. 6.1
Packing group DOT, IMDG, IATA	II
Environmental hazards:	Environmentally hazardous substance, solid
Special precautions for user	Warning: Toxic substances
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Marine Pollutant (DOT):	No
UN "Model Regulation":	UN1596, Dinitroanilines, 6.1, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms




GHS06 GHS08

Signal word Danger

Hazard statements

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National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

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USA

Product name: 2,4-Dinitroaniline

California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.
Information about limitation of use: For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

(Contd. of page 4)

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department

Date of preparation / last revision 11/23/2015 / -

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)

USA