Chemical Safety Data Sheet MSDS / SDS

1-naphthylamine SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: 1-naphthylamine

CAS: 134-32-7

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed
H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P391 Collect spillage.

Storage

none

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	1-naphthylamine
Common names and synonyms:	1-naphthylamine
CAS number:	134-32-7
EC number:	205-138-7
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Inhalation may cause cyanosis (blue color in lips and under finger nails). Contact with liquid causes local irritation of eyes. Neither ingestion nor contact with skin produces any recognized immediate effects. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilation if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 mg/kg up to 200 mL of water for dilution if the patent can swallow, has a strong gag reflex, and does not drool.

Administer activated charcoal . Cover skin burns with dry sterile dressings after decontamination . /Organic bases/Amines and related compounds/

SECTION 5: Firefighting measures

Suitable extinguishing media

Powder, alcohol-resistant foam, water spray, carbon dioxide.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic nitrogen oxides are produced in a fire. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Environmental considerations: Water spill: Use natural barriers or oil spill control booms to limit spill travel. Use natural deep water pockets, excavated lagoons, or sand bag barriers to trap material at bottom. Remove trapped material with suction hoses.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Dry. Keep in the dark. Well closed.Keep well closed and protected from light.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	1-naphthylamine			
CAS No.	134-32-7			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m^3	ppm	mg/m^3
Austria	0,17	1 inhalable aerosol	0,68	4 inhalable aerosol
Germany (AGS)	0,17 (1)	1 (1)	0,68 (1)(2)	4 (1)(2)
South Korea	?	0,006	?	?
	Remarks			
Austria	TRK value (based on technical feasibility)			
Germany (AGS)	(1) Inhalable aerosol and vapour (2) 15 minutes reference period			

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Alpha-naphthylamine is a crystalline solid or a solid dissolved in a liquid. Insoluble in water and denser than water. Contact may slightly irritate skin, eyes and mucous membranes. May be slightly toxic by ingestion. Used to make other chemicals.
Colour:	Needles from ethanol (aq) or ether
Odour:	Ammonia-like odor.
Melting point/freezing point:	50 °C
Boiling point or initial boiling point and boiling range:	300.8 °C
Flammability:	Combustible Solid
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	157 °C
Auto-ignition temperature:	905° F (NTP, 1992)
Decomposition temperature:	no data available
pH:	Weak base

Kinematic viscosity:	no data available
Solubility:	Insoluble in water
Partition coefficient n-octanol/water:	log Kow = 2.25
Vapour pressure:	0.00108mmHg at 25°C
Density and/or relative density:	1.12
Relative vapour density:	4.93 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers alpha-naphthylamine to be a potential occupational carcinogen.
Decomposes on burning. This produces nitrogen oxides and carbon monoxide. The substance is a weak base.

Chemical stability

Oxidizes in air

Possibility of hazardous reactions

ALPHA-NAPHTHYLAMINE is incompatible with oxidizing agents. It is also incompatible with nitrous acid. It reduces warm ammoniacal silver nitrate. (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

Oxidizes in air.

Hazardous decomposition products

The substance decomposes on burning producing nitrogen oxides and carbon monoxide.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 680 mg/kg bw

Inhalation: LC50 Rat inhalation >0.056 mg/L/4 hr

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Inadequate evidence of carcinogenicity in humans. Inadequate evidence of carcinogenicity in animals. OVERALL EVALUATION: Group 3: The agent is not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

no data available

STOT-single exposure

The substance is mildly irritating to the eyes and skin. The substance may cause effects on the blood. This may result in the formation of methaemoglobin. The effects may be delayed. Medical observation is indicated. See Notes.

STOT-repeated exposure

See Notes.

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Using activated sludge from both domestic and industrial sources and the Warburg technique, 1-naphthylamine depletion after 6 hrs at 25 deg C was measured to be 80-84% from an initial concn of 20 ppm(1). 1-Naphthylamine, at a concn of 500 ppm, was extensively oxidized by an aniline-acclimated activated sludge after 19 hrs in a Warburg respirometer(2). Over a 20-day period, no biodegradation of 200 ppm 1-naphthylamine as a sole carbon source was observed in a batch system containing an adapted activated sludge(3). 1-Naphthylamine at 500 ppm was found to inhibit oxygen uptake in a Warburg respirometer containing a municipal activated sludge(4). At 1000 ppm, 1-naphthylamine was toxic to an activated sludge(5). 1-Naphthylamine degradation in six different soils after 308 days of incubation at 23 deg C varied from 16.6-30.7% as measured by radio-labelled carbon dioxide evolution(6). Comparison of carbon dioxide evolution in sterilized (via gamma radiation) versus unsterilized soil suggested that the degradation was predominantly microbial in nature(6). Approximately 16, 28 and 33% of added 1-naphthylamine degraded in Russell soil at temperatures of 12, 23 and 30 deg C, respectively, indicating the effect of temperature on microbial degradation(6).

Bioaccumulative potential

An estimated BCF of 11 was calculated for 1-naphthylamine(SRC), using a log Kow of 2.25(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC),

provided the compound is not altered physically or chemically once released into the environment.

Mobility in soil

Using a batch equilibrium technique, 1-naphthylamine Koc values of 2,688 and 3,173 were determined for two sandy-silt soils and a Koc value of 3,777 was determined for a silty-clay soil(1). According to a classification scheme(2), this estimated Koc value suggests that 1-naphthylamine is expected to have low mobility in soil. Results of a batch equilibrium study with various soils indicated that 1-naphthylamine binds to soil in two phases with an initial rapid and reversible equilibrium established between the amine and the inorganic and organic components of soil followed subsequently by a strong association with the humic fraction of soil via covalent binding(3,4). In laboratory study, 1-naphthyalmine was found to have a relatively moderate tendency to adsorb to lignite coal in subsurface areas where it may be present as a contaminant from coal-gasification plants(5).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2077 (For reference only, please check.)
IMDG: UN2077 (For reference only, please check.)
IATA: UN2077 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: alpha-NAPHTHYLAMINE (For reference only, please check.)
IMDG: alpha-NAPHTHYLAMINE (For reference only, please check.)
IATA: alpha-NAPHTHYLAMINE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Depending on the degree of exposure, periodic medical examination is indicated.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.Bladder cancers reported after occupational exposure to 1-naphthylamine may be due to contamination with 2-naphthylamine which is a human carcinogen.