Chemical Safety Data Sheet MSDS / SDS

2-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: 2-naphthylamine

CAS: 91-59-8

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

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Carcinogenicity, Category 1A

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed
H350 May cause cancer
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.
P203 Obtain, read and follow all safety instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P318 IF exposed or concerned, get medical advice.
P391 Collect spillage.

Storage

P405 Store locked up.

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:	2-naphthylamine
Common names and synonyms:	2-naphthylamine
CAS number:	91-59-8
EC number:	202-080-4
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. Refer immediately for medical attention .

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

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

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 ventilations 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

If material on fire or involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Use foam, dry chemical, or carbon dioxide. Keep run-off water out of sewers and water sources.

Specific hazards arising from the chemical

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2016)

Special protective actions for fire-fighters

Use water spray, dry powder, foam.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Sweep spilled substance into covered containers. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. PREVENT DISPERSION OF DUST. 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

Separated from food and feedstuffs. Well closed. Store in an area without drain or sewer access.Separated from food and feedstuffs. Well closed.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: A1 (confirmed human carcinogen).MAK: skin absorption (H); carcinogen category: 1; germ cell mutagen group: 3A

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 face shield or eye protection in combination with breathing protection if powder.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use closed system or ventilation.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Beta-naphthylamine is a white to reddish colored solid in the form of flakes. Slightly soluble in hot water and denser than water. Toxic by ingestion, inhalation and skin absorption. Used to make dyes and agricultural chemicals.
Colour:	COLORLESS CRYSTALS WHICH DARKEN IN AIR TO A REDDISH-PURPLE COLOR
Odour:	Faint aromatic odor
Melting point/freezing point:	110.2 ~ 113 °C
Boiling point or initial boiling point and boiling range:	306 °C
Flammability:	Combustible Solid
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	157 °C

Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	WEAK BASE
Kinematic viscosity:	no data available
Solubility:	Partially miscible with water
Partition coefficient n-octanol/water:	log Kow =2.28
Vapour pressure:	1 mm Hg at 226.4° F ; 5 mm Hg at 286.9° F (NTP, 1992)
Density and/or relative density:	1.061
Relative vapour density:	4.95 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers beta-naphthylamine to be a potential occupational carcinogen.
Decomposes on burning. This produces toxic and corrosive fumes including nitrogen oxides.

Chemical stability

Stable in cold in absence of air; oxidizes in presence of air; volatile in steam

Possibility of hazardous reactions

It is combustible and at elevated temperatures evolves a vapor which is flammable ... Fire hazard: moderate, when exposed to heat or flame.Dust explosion possible if in powder or granular form, mixed with air.BETA-NAPHTHYLAMINE is a weak base. It is incompatible with strong oxidizing agents and strong acids. It is also incompatible with nitrous acid. It reduces warm ammoniacal

silver nitrate. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

STABILITY: This chemical darkens in air to a reddish-purple color (oxidizes).REACTIVITY: This chemical is a weak base. It is incompatible with strong oxidizing agents and strong acids. It is also incompatible with nitrous acid. It reduces warm ammoniacal silver nitrate. (NTP, 1992)

Hazardous decomposition products

When exposed to heat or flame, it emits toxic fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

Inhalation: no data available

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

Sufficient evidence of carcinogenicity in humans. Sufficient evidence of carcinogenicity in animals. OVERALL EVALUATION: Group 1: The agent is a human carcinogen. From table

Reproductive toxicity

no data available

STOT-single exposure

The substance may be irritating to the respiratory tract and skin. The substance may cause effects on the blood. This may result in the formation of methaemoglobin. The substance may cause effects on the bladder. This may result in inflammation and blood in the urine. Medical observation is indicated. The effects may be delayed. See Notes.

STOT-repeated exposure

This substance is carcinogenic to humans. See Notes.

Aspiration hazard

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

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: In a test for primary biodegradation, 2-naphthylamine was not degraded in chernozem soil after 90 days at an initial concentration of 500 mg/kg(1). The maximum mineralization rate for 2-naphthylamine (conc. 50 ug/g) in a soil/water suspension over 220 days was 0.12 ug/g-day during a short initial phase and 0.027 ug/g-day during a longer second phase(2). Addition of fresh

amounts of 2-naphthylamine (conc. 50 ug/g) at 220 days restored the mineralization to the initial phase rate value. The recalcitrance of aminonaphthalenes in soil has been attributed to their ability to form complexes with soil matter which, to a large extent, renders them biologically unavailable(3).

Bioaccumulative potential

An estimated BCF of 11 was calculated for 2-naphthylamine(SRC), using a log Kow of 2.28(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).

Mobility in soil

The measured Koc for 2-naphthylamine is 1,000(1). According to a classification scheme(2), this Koc value suggests that 2-naphthylamine is expected to have low mobility in soil. Results of a batch equilibrium study with various soils indicated that 1-naphthylamine, which is structurally analogous to 2-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). Aminonaphthalenes are known to form complexes with soil matter(5). The pKa of 2-naphthylamine is 4.16(6), indicating that this compound will partially exist in cation form in the environment.

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: UN1650 (For reference only, please check.)
IMDG: UN1650 (For reference only, please check.)
IATA: UN1650 (For reference only, please check.)

UN Proper Shipping Name

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

Not 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 suggested.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.Do NOT take working clothes home.The substance may cause bladder cancer.