Chemical Safety Data Sheet MSDS / SDS

Methacrylonitrile 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: Methacrylonitrile

CAS: 126-98-7

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

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SECTION 2: Hazards identification

Classification of the substance or mixture

Flammable liquids, Category 2
Acute toxicity - Category 3, Oral

Acute toxicity - Category 3, Dermal
Skin sensitization, Category 1
Acute toxicity - Category 3, Inhalation

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour
H301 Toxic if swallowed
H311 Toxic in contact with skin
H317 May cause an allergic skin reaction
H331 Toxic if inhaled

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P271 Use only outdoors or in a well-ventilated area.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P301+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).

P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P316 Get emergency medical help immediately.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P333+P317 If skin irritation or rash occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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:	Methacrylonitrile
Common names and synonyms:	Methacrylonitrile
CAS number:	126-98-7
EC number:	204-817-5
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

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

Give a slurry of activated charcoal in water to drink. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Wear protective gloves when inducing vomiting. NO mouth-to-mouth artificial respiration. Administration of oxygen may be needed. Refer for medical attention .

Most important symptoms/effects, acute and delayed

A lacrimator (causes tearing); an insidious poison which causes delayed skin reactions. Very readily absorbed through skin. Highly toxic. (EPA, 1998)

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

Severe acute inhalations should be treated like cyanide poisoning. The first priority is to establish adequate ventilation (100% oxygen) and circulation, since cyanide antidotes are theoretically useful but clinically unproven in acrylonitrile poisoning. Acrylonitrile

SECTION 5: Firefighting measures

Suitable extinguishing media

Usual precautions for flammable liquid should be applied. (EPA, 1998)

Specific hazards arising from the chemical

Methacrylonitrile evolves flammable concentrations of vapor at temperatures down to 55.04F. Thus, at room temperatures, flammable concentrations are liable to be present. Toxic fumes of nitrogen oxides are released when the material burns. Also, the chemical will explode due to its tendency to polymerize violently. Avoid heat. Hazardous polymerization may occur. (EPA, 1998)

Special protective actions for fire-fighters

Use alcohol-resistant foam. Use dry powder. Use carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove all ignition sources. Evacuate danger area! Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Remove all ignition sources. Evacuate danger area! Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. 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

Store only if stabilized. Fireproof. Cool. Keep in the dark. Separated from food and feedstuffs.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 1 ppm as TWA; (skin); A4 (not classifiable as a human carcinogen)

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.

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:	Methacrylonitrile, stabilized is a clear colorless liquid. Less dense than water. Flash point 55°F. Boiling point 195°F. Very be toxic by ingestion, inhalation and skin absorption. Used to make plastics and coatings.
Colour:	Colorless liquid.
Odour:	Odor-like bitter almonds.
Melting point/freezing point:	?35.8?°C(lit.)

Boiling point or initial boiling point and boiling range:	90-92?°C(lit.)
Flammability:	Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 2%; upper flammable limit: 6.8%
Flash point:	54?°F
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	0.392 cP @ 20 deg C
Solubility:	10 to 50 mg/mL at 72° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow = 0.68
Vapour pressure:	64 mm Hg (20 °C)
Density and/or relative density:	0.8?g/mL?at 25?°C(lit.)
Relative vapour density:	2.31 (EPA, 1998) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The substance may violently polymerize under the influence of acids, bases and light. This generates fire or explosion hazard. The

substance may polymerize due to heating. This generates fire or explosion hazard. On combustion, forms toxic and corrosive fumes including cyanides and nitrogen oxides.

Chemical stability

no data available

Possibility of hazardous reactions

METHACRYLONITRILE EVOLVES FLAMMABLE CONCENTRATIONS OF VAPOR AT TEMPERATURES DOWN TO 12.8 DEG C. THUS, AT ROOM TEMPERATURES, FLAMMABLE ... CONCENTRATIONS ARE LIABLE TO BE PRESENT IN ABSENCE OF PRECAUTIONS. THE NORMAL DANGERS ASSOCIATED WITH FIRE ... ARE INTENSIFIED BY THE LETHAL NATURE OF THE FUMES & VAPORS EVOLVED.The vapour is heavier than air and may travel along the ground; distant ignition possible. Vapours are uninhibited and may polymerize, causing blockage of vents.METHACRYLONITRILE is a colorless, flammable, toxic liquid. Explosive in the form of vapor when exposed to heat, flame or sparks. When heated to decomposition it emits toxic fumes of nitrile and oxides of nitrogen [Lewis, 3rd ed., 1993, p. 829].

Conditions to avoid

no data available

Incompatible materials

Strong acids, strong oxidizers, alkali, light. [Note: Polymerization may occur due to elevated temperature, visible light, or contact with a concentrated alkali.]

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /nitrogen oxides and cyanides/.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 25-50 mg/kg

Inhalation: LC50 Rat inhalation 328 ppm/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

no data available

Reproductive toxicity

no data available

STOT-single exposure

The vapour is irritating to the eyes and respiratory tract. The substance may cause effects on the cellular respiration. This may result in convulsions and unconsciousness. Exposure could cause death.

STOT-repeated exposure

no data available

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

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

Microorganisms hydrolyze nitriles predominately to ammonia and carboxylic acids(1). A bacterium isolated from soil (Pseudomonas putida) was able to utilize methylacrylonitrile as a sole source of carbon and nitrogen(2). In another study, a mixed microbial culture, isolated from an environment contaminated with organic cyanides and PCBs, utilized methylacrylonitrile as the sole source of carbon and nitrogen(1). The mixed microbial culture was grown for 48 hrs at pH 7 with 1 g/l of methylacrylonitrile; the final pH and ammonia concn were determined to be 8.17 and 40.9 umol/ml, respectively(1).

Bioaccumulative potential

An estimated BCF of 3 was calculated for methylacrylonitrile(SRC), using a log Kow of 0.68(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 Koc of methylacrylonitrile is estimated as 56(SRC), using a measured log Kow of 0.68(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that methylacrylonitrile is expected to have high mobility in soil(SRC).

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: UN3079 (For reference only, please check.)
IMDG: UN3079 (For reference only, please check.)
IATA: UN3079 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: METHACRYLONITRILE, STABILIZED (For reference only, please check.)
IMDG: METHACRYLONITRILE, STABILIZED (For reference only, please check.)
IATA: METHACRYLONITRILE, STABILIZED (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: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

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

The commercial product contains 50 ppm hydroquinone monoethyl ether as a stabilizer.The odour warning when the exposure limit value is exceeded is insufficient.Specific treatment is necessary in case of poisoning with this substance; the appropriate means

with instructions must be available. Use same antidotes as in the case of cyanide poisoning.