Chemical Safety Data Sheet MSDS / SDS

N,N-dimethylacetamide 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: N,N-dimethylacetamide

CAS: 127-19-5

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

Acute toxicity - Category 4, Dermal
Acute toxicity - Category 4, Inhalation

Reproductive toxicity, Category 1B

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H312 Harmful in contact with skin
H332 Harmful if inhaled

Precautionary statement(s)

Prevention

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.

Response

P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).
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.
P318 IF exposed or concerned, get medical advice.

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:	N,N-dimethylacetamide
Common names and synonyms:	N,N-dimethylacetamide
CAS number:	127-19-5
EC number:	204-826-4
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 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. Give one or two glasses of water to drink. Do NOT induce vomiting. Seek medical attention if you feel unwell.

Most important symptoms/effects, acute and delayed

Liquid causes mild irritation of eyes and skin. Ingestion causes depression, lethargy, confusion and disorientation, visual and auditory hallucinations, perceptual distortions, delusions, emotional detachment, and affective blunting. (USCG, 1999)

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

Skin exposures should be followed by prompt water flushing. Eye exposure should be followed by immediate saline irrigation & an ophthalmology review. Oral ingestions of DMAC should be treated symptomatically & supportively in a hospital. Liver function tests should be obtained periodically as indicated.

SECTION 5: Firefighting measures

Suitable extinguishing media

Extinguish with water, dry chemicals, alcohol foam or carbon dioxide

Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

Special protective actions for fire-fighters

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: chemical protection suit. Collect leaking and spilled liquid in sealable containers as far as possible. 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

1. Ventilate the area of spill or leak. 2. For small quantities, absorb on paper towels. Evaporate in safe place (such as fume hood). Allow sufficient time for evaporating vapors to completely clear the hood ductwork. Burn paper in suitable location away from combustible materials.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Above 63°C use a closed system, ventilation and explosion-proof electrical equipment. 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

Ventilation along the floor. Separated from strong oxidants.MATERIALS WHICH ARE TOXIC AS STORED OR WHICH CAN DECOMPOSE INTO TOXIC COMPONENTS ... SHOULD BE STORED IN A COOL WELL VENTILATED PLACE, OUT OF DIRECT RAYS OF THE SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, AND SHOULD BE PERIODICALLY INSPECTED. INCOMPATIBLE MATERIALS SHOULD BE ISOLATED .

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 10 ppm as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued.MAK: 18 mg/m3, 5 ppm; peak limitation category: II(2); skin absorption (H); pregnancy risk group: C.EU-OEL: 36 mg/m3, 10 ppm as TWA; 72 mg/m3, 20 ppm as STEL; (skin)

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.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid.
Colour:	Colourless.
Odour:	AMINE
Melting point/freezing point:	-20 °C.
Boiling point or initial boiling point and boiling range:	166 °C. Atm. press.:1 013.25 hPa.
Flammability:	Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.
Lower and upper explosion limit/flammability limit:	LOWER FLAMMABLE LIMIT: 1.8% BY VOL @ 212 DEG F; UPPER FLAMMABLE LIMIT: 11.5% BY VOL @ 320 DEG F
Flash point:	64 °C. Atm. press.:1 013.25 hPa.
Auto-ignition temperature:	345 °C. Atm. press.:999 - 1 011 hPa.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	dynamic viscosity (in mPa s) = 0.92. Temperature:25.0°C.
Solubility:	greater than or equal to 100 mg/mL at 72° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = -0.77. Temperature:25 °C.

Vapour pressure:	2 hPa. Temperature:21.7 °C.
Density and/or relative density:	0.94 g/cm3. Temperature:20 °C.
Relative vapour density:	3.89 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic fumes. Reacts with strong oxidants strong oxidants.

Chemical stability

no data available

Possibility of hazardous reactions

Combustible when exposed to heat or flame.DIMETHYLACETAMIDE is an amide. Incompatible with oxidizing agents and halogenated compounds. Exothermic reactions occur with carbon tetrachloride and hexachlorocyclohexane. It can react violently in the presence of iron. (NTP, 1992) Special Hazards of Combustion Products: Emits carbon oxides, nitrogen oxides, and dimethylamine when heated to decomposition.

Conditions to avoid

no data available

Incompatible materials

Carbon tetrachloride, other halogenated compounds when in contact with iron, oxidizers.

Hazardous decomposition products

On decomposition can emit fumes highly irritating to eyes, mucous membranes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male/female) - ca. 5 830 mg/kg bw. Remarks:Males and females combined.

Inhalation: LC50 - rat (female) - 8.8 mg/L air.

Dermal: approximate lethal dose - rabbit (female) - 5 000 mg/kg bw.

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

A4: Not classifiable as a human carcinogen.

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

The substance may have effects on the liver. This may result in impaired functions. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Leuciscus idus - > 500 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - > 500 mg/L - 48 h.

Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - > 500 mg/L - 72 h.

Toxicity to microorganisms: LOEC - Pseudomonas putida - 4 850 mg/L - 16 h.

Persistence and degradability

AEROBIC: N,N-Dimethylacetamide, present at 100 mg/l reached 28% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(1). N,N-Dimethylacetamide, present at 30 mg/l, reached 80% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 100 mg/l and the Japanese MITI test(1). In other studies, N,N-dimethylacetamide, present at 400 mg/l, reached 96% of its theoretical TOC in 5 days using industrial activated sludge(2). These results from laboratory studies suggest that N,N-dimethylacetamide will biodegrade in the environment(SRC).

Bioaccumulative potential

An estimated BCF of 3 was calculated for N,N-dimethylacetamide(SRC), using a log Kow of -0.77(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 N,N-dimethylacetamide is estimated as 9(SRC), using a measured log Kow of -0.77(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that N,N-dimethylacetamide is expected to have very 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: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (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

Not 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.There is no odour warning even when toxic concentrations are present.