# Chemical Safety Data Sheet MSDS / SDS

## N-methylformamide 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-methylformamide

CAS: 123-39-7

### 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, Dermal
Reproductive toxicity, Category 1B

### GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

### Hazard statement(s)

H312 Harmful in contact with skin

### Precautionary statement(s)

### Prevention

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
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.
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-methylformamide |
| Common names and synonyms: | N-methylformamide |
| CAS number: | 123-39-7 |
| EC number: | 204-624-6 |
| 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

Rinse skin with plenty of water or shower.

#### 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. Rest. Refer for medical attention .

### Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound include irritation of the mucous membranes and upper respiratory tract. Other symptoms include liver damage, eye irritation with discomfort, tearing or blurring of vision, skin irritation with discomfort or rash, abnormalities of liver function with jaundice, temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination and loss of consciousness. ACUTE/CHRONIC HAZARDS: This compound may be absorbed through the skin and cause skin irritation. It may also irritate the eyes, mucous membranes and upper respiratory tract. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide and nitrogen oxides. (NTP, 1992)

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

### Absorption, Distribution and Excretion

8 healthy male subjects were exposed to dimethylformamide vapor at a concn of 8.79 + or - 0.33 ppm for 6 hr/day for 5 consecutive days. All urine voided by the subjects was collected from the beginning of the first exposure to 24 hr past the end of the last exposure & each sample was analyzed for monomethylformamide. Monomethylformamide was rapidly eliminated from the body with urine values peaking within a few hr following the end of each exposure period. The mean for the 7 hr (end of exposure) sample was 4.74 ug/ml urine or 736.8 ug.

## SECTION 5: Firefighting measures

### Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. A water spray may also be used. (NTP, 1992)

### Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

### Special protective actions for fire-fighters

Use powder, 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

Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking liquid in covered containers.

### Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking liquid in covered containers.

### 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. 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 oxidants.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

no data available

### 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 goggles.

### Skin protection

Protective gloves.

### Respiratory protection

Use ventilation.

**Thermal hazards**

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| Physical state: | PHYSICAL DESCRIPTION: Clear colorless liquid with a slight amine odor. (NTP, 1992) |
| Colour: | no data available |
| Odour: | no data available |
| Melting point/freezing point: | -5°C(lit.) |
| Boiling point or initial boiling point and boiling range: | 183°C(lit.) |
| Flammability: | Combustible. |
| Lower and upper explosion limit/flammability limit: | no data available |
| Flash point: | 98°C(lit.) |
| Auto-ignition temperature: | 613° F (NTP, 1992) |
| Decomposition temperature: | no data available |
| pH: | no data available |
| Kinematic viscosity: | 1.99 mN/s/m @ 15 deg C; 1.65 mN/s/m @ 25 deg C |
| Solubility: | greater than or equal to 100 mg/mL at 68° F (NTP, 1992) |
| Partition coefficient n-octanol/water: | log Kow = -0.97 |
| Vapour pressure: | 0.808mmHg at 25°C |

| | |
|---|---|
| Density and/or relative density: | 1.011 |
| Relative vapour density: | (air = 1): 2.04 |
| Particle characteristics: | no data available |

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating and on burning. This produces nitrogen oxides. Reacts with strong oxidants. Attacks some forms of plastic and rubber.

### Chemical stability

Solution: A 25% aqueous solution is stable at room temperature for at least one week (NMR).

### Possibility of hazardous reactions

A very dangerous fire hazard when exposed to heat or flame.N-METHYLFORMAMIDE is incompatible with benzene sulfonyl chloride. It is also incompatible with strong oxidizing agents, acids, bases and acid chlorides. It may react with chlorine, bromine, nitrates, nitric acid, triethylaluminum, potassium permanganate, chromic acid, chromic anhydride, chromium trioxide, borohydrides, hydrides, thionyl chloride, metallic sodium, phosphorus trioxide, diborane, (octafluoroisobutyrate + sodium nitrite) and (perchloryl fluoride + potassium methyl 4,4-dinitrobutyrate). (NTP, 1992)

### Conditions to avoid

no data available

### Incompatible materials

Violent reaction with benzene sulfonyl chloride.

### Hazardous decomposition products

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

## SECTION 11: Toxicological information

### Acute toxicity

Oral: LD50 BALB/C Mouse oral 2.6 g/kg

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

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the eyes. The substance may cause effects on the liver. This may result in liver impairment.

### STOT-repeated exposure

no data available

### Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation 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

AEROBIC: N-Methylformamide, present at 400 mg/l, reached 4%, 98%, and 100% of its theoretical BOD in 3 hrs, 3 days, and 7 days, respectively, using an industrial activated sludge inoculum and the Zahn-Wellens test(1). Using the BOD test, N-methylformamide achieved 2% of its theoretical BOD after 5 days(1). N-Methylformamide has also been shown to biodegrade by microorgansism obtained through soil enrichment(2). Therefore, N-methylformamide may biodegrade in the environment(SRC).

### Bioaccumulative potential

An estimated BCF of 3 was calculated for N-methylformamide(SRC), using a log Kow of -0.97(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-methylformamide is estimated as 7(SRC), using a log Kow of -0.97(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that N-methylformamide 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/