

## Chemical Safety Data Sheet MSDS / SDS

**N-NITROSOMORPHOLINE**Revision Date:2026-04-25 Revision Number:1

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

Product name : N-NITROSOMORPHOLINE  
CBnumber : CB3185221  
CAS : 59-89-2  
EINECS Number : 627-564-6  
Synonyms : NMOR,N-Nitrosomorpholine

**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  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

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**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

**Precautionary statements**

P201 Obtain special instructions before use.

**Hazard statements**

H351 Suspected of causing cancer

H301 Toxic if swallowed

**SECTION 3: Composition/information on ingredients****Substance**

Product name : N-NITROSOMORPHOLINE

Synonyms	: NMOR,N-Nitrosomorpholine
CAS	: 59-89-2
EC number	: 627-564-6
MF	: C4H8N2O2
MW	: 116.12

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## SECTION 4: First aid measures

### General advice

Show this safety data sheet to the doctor in attendance.

### If inhaled

After inhalation: fresh air. Call in physician.

### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

### If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

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

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

### Protection of first-aiders

For personal protection see section 8.

### Notes to physician

No data available

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## SECTION 5: Firefighting measures

### Suitable extinguishing media

Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### Specific hazards during fire fighting

Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

## Hazardous combustion products

Carbon oxides Nitrogen oxides (NOx)

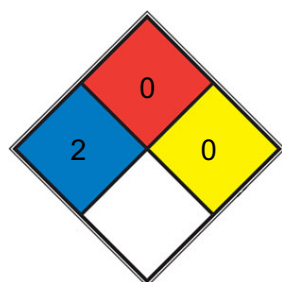
## Specific extinguishing methods

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## NFPA 704



HEALTH 2 Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

FIRE 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,[N2](#))

SPEC.  
 HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material . Dispose of properly. Clean up affected area.

## SECTION 7: Handling and storage

### Handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Avoidance of contact

Strong oxidizing agents

### Storage

#### Further information on storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

#### Storage class

6.1C, Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

#### Recommended storage temperature

Recommended storage temperature see product label.

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## SECTION 8: Exposure controls/personal protection

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

### Engineering measures

No data available

### Personal protective equipment

#### Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### Recommended Filter type

Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Safety glasses

#### Skin and body protection

protective clothing

#### Hand protection

#### Material

butyl-rubber

#### Break through time

60 min

**Glove thickness**

0.3 mm

**Protective index**

Splash contact

**Manufacturer**

Butoject® (KCL 897 / Aldrich Z677647, Size M)

**Manufacturer**

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

**Remarks**

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves.

**Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9: Physical and chemical properties

**Information on basic physicochemical properties**

liquid

**Color**

White or Colorless to Yellow

**Odor**

No data available

**Odor Threshold**

No data available

**pH**

No data available

**Melting point/ range**

29 °C

**Boiling point/boiling range**

225°C

**Flash point**

29 °C

**Evaporation rate**

No data available

**Flammability (solid, gas)**

No data available

### **Flammability (liquids)**

No data available

### **Burning rate**

No data available

### **Upper explosion limit / Upper flammability limit**

No data available

### **Lower explosion limit / Lower flammability limit**

No data available

### **Vapor pressure**

No data available

### **Relative vapor density**

No data available

### **Relative density**

1.2829 (rough estimate)

### **Density**

1.2829 (rough estimate)

### **Water solubility**

Completely soluble in water

### **Partition coefficient: n-octanol/water**

No data available

### **Autoignition temperature**

No data available

### **Decomposition temperature**

No data available

### **Viscosity, dynamic**

No data available

### **Viscosity, kinematic**

No data available

### **Flow time**

No data available

### **Explosive properties**

No data available

### **Oxidizing properties**

No data available

### **Molecular weight**

116.12 g/mol

### **Particle characteristics Particle size**

No data available

### **Solubility**

DMSO : 100 mg/mL (861.18 mM)

### **Physical state**

<29°C Solid,>29°C Liquid

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## SECTION 10: Stability and reactivity

### **Reactivity**

No data available

### **Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

### **Possibility of hazardous reactions**

No data available

### **Conditions to avoid**

no information available

### **Incompatible materials**

Strong oxidizing agents

### **Hazardous decomposition products**

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### **11.1 Information on toxicological effects**

#### **Acute toxicity**

LD50 Oral - Rat - 282 mg/kg

Remarks: (RTECS)

Inhalation: No data available

Dermal: No data available

**Skin corrosion/irritation**

Remarks: No data available

**Serious eye damage/eye irritation**

Remarks: No data available

**Respiratory or skin sensitization**

Classified based on available data. For more details, see section 2

**Germ cell mutagenicity**

Suspected of causing genetic defects.

**Carcinogenicity**

Presumed to have carcinogenic potential for humans

**Reproductive toxicity**

Classified based on available data. For more details, see section 2

**Specific target organ toxicity - single exposure**

Classified based on available data. For more details, see section 2

**Specific target organ toxicity - repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

- Liver

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Aspiration hazard**

Classified based on available data. For more details, see section 2

**11.2 Additional Information**

RTECS: QE7525000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## SECTION 12: Ecological information

**Ecotoxicity**

**Components:**

**Nitrosomorpholine:**

**Toxicity to fish**

Remarks: No data available

**Persistence and degradability**

**Components:**

**Nitrosomorpholine:**

**Biodegradability**

Remarks: No data available

### **Bioaccumulative potential**

#### **Components:**

#### **Nitrosomorpholine:**

##### **Bioaccumulation**

Remarks: No data available

##### **Mobility in soil**

#### **Components:**

#### **Nitrosomorpholine:**

##### **Stability in soil**

Remarks: No data available

##### **Other adverse effects**

#### **Components:**

#### **Nitrosomorpholine:**

##### **Additional ecological information**

No data available

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## SECTION 13: Disposal considerations

### **Disposal methods**

#### **Waste from residues**

Offer surplus and non-recyclable solutions to a licensed disposal company.

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## SECTION 14: Transport information

### **International Regulations**

#### **IATA-DGR**

UN/ID No. : UN 2810

Proper shipping name : Toxic liquid, organic, n.o.s.

(Nitrosomorpholine)

Class : 6.1

Packing group : III

Labels : Division 6.1 - Toxic substances

Packing instruction (cargo aircraft) : 663

Packing instruction (passenger aircraft) : 655

### **IMDG-Code**

UN number : UN 2810

Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.

(Nitrosomorpholine)

Class : 6.1

Packing group : III

Labels : 6.1

EmS Code : F-A, S-A

Marine pollutant : no

### **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

### **National Regulations**

#### **JT/T 617**

UN number : UN 2810

Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.

(Nitrosomorpholine)

Class : 6.1

Packing group : III

Labels : 6.1

Environmentally hazardous : no

### **Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## **SECTION 15: Regulatory information**

Catalogue of Hazardous Chemicals : This product is not listed in the catalogue of hazardous chemicals, but it meets the definition of hazardous chemicals and its principles of determination.

### **National regulatory information**

#### **Regulations on Safety Management of Hazardous Chemicals**

#### **Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)**

Not listed

#### **Hazardous Chemicals for Priority Management**

Not listed under SAWS

## **Catalogue of Specially Controlled Hazardous**

Not listed Chemicals

## **List of Explosive Precursors**

Not listed

## **Regulations on Labour Protection in Workplaces where Toxic Substances are Used**

## **Catalogue of Highly Toxic Chemicals**

Not listed

## **Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

## **China Severely Restricted Toxic Chemicals for Import and Export**

Not listed

## **Regulation on the Administration of Precursor Chemicals**

## **Catalogue and Classification of Precursor Chemicals**

Not listed

## **Regulations on the Administration of Controlled Chemicals**

## **List of Controlled Chemicals**

Not listed

## **Regulations of Ozone Depleting Substances Management**

## **List of Controlled Ozone Depleting Substances**

Not listed

## **List of Controlled Ozone Depleting Substances Import and Export**

Not listed

## **Environmental Protection Law**

## **List of Priority Controlled Chemicals**

Not listed

## **List of Key Controlled New Pollutants**

Not listed

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## SECTION 16: Other information

## Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals

ANTT - National Agency for Transport by Land of Brazil

ASTM - American Society for the Testing of Materials

bw - Body weight

CMR - Carcinogen, Mutagen or Reproductive Toxicant

DIN - Standard of the German Institute for Standardisation

DSL - Domestic Substances List (Canada)

EC<sub>x</sub> - Concentration associated with x% response

EL<sub>x</sub> - Loading rate associated with x% response

EmS - Emergency Schedule

ENCS - Existing and New Chemical Substances (Japan)

ErC<sub>x</sub> - Concentration associated with x% growth rate response

ERG - Emergency Response Guide

GHS - Globally Harmonised System

GLP - Good Laboratory Practice

IARC - International Agency for Research on Cancer

IATA - International Air Transport Association

IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IC<sub>50</sub> - Half maximal inhibitory concentration

ICAO - International Civil Aviation Organization

IECSC - Inventory of Existing Chemical Substances in China

IMDG - International Maritime Dangerous Goods

IMO - International Maritime Organisation

ISHL - Industrial Safety and Health Law (Japan)

ISO - International Organisation for Standardisation

KECI - Korea Existing Chemicals Inventory

LC<sub>50</sub> - Lethal Concentration to 50% of a test population

LD<sub>50</sub> - Lethal Dose to 50% of a test population (Median Lethal Dose)

MARPOL - International Convention for the Prevention of Pollution from Ships

MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods

n.o.s. - Not Otherwise Specified

Nch - Chilean Norm

NO(A)EC - No Observed (Adverse) Effect Concentration

NO(A)EL - No Observed (Adverse) Effect Level

NOELR - No Observable Effect Loading Rate

NOM - Official Mexican Norm

NTP - National Toxicology Program

NZIoC - New Zealand Inventory of Chemicals

OECD - Organisation for Economic Co-operation and Development

OPPTS - Office of Chemical Safety and Pollution Prevention

PBT - Persistent, Bioaccumulative and Toxic substance

PICCS - Philippines Inventory of Chemicals and Chemical Substances

(Q)SAR - (Quantitative) Structure Activity Relationship

REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

SADT - Self-Accelerating Decomposition Temperature

SDS - Safety Data Sheet

TCSI - Taiwan Chemical Substance Inventory

TDG - Transportation of Dangerous Goods

TECI - Thailand Existing Chemicals Inventory

TSCA - Toxic Substances Control Act (United States)

UN - United Nations

UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

vPvB - Very Persistent and Very Bioaccumulative

WHMIS - Workplace Hazardous Materials Information System

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.