

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** 4-methylmorpholine 4-oxide, monohydrate

### 1.2 Other means of identification

**Product number** -  
**Other names** 4-Methylmorpholine N-Oxide; 4-Methylmorpholine 4-oxide;

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.  
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Shanghai Yansheng Internet Technology Co., Ltd  
**Address** 513, A3 / F, green space future center, Fengxian District, Shanghai, 201400, China  
**Telephone** +86-4000-6969-66

### 1.5 Emergency phone number

**Emergency phone number** +86-4000-6969-66  
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Flammable solids, Category 1  
Oxidizing solids, Category 2

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Danger  
**Hazard statement(s)** H228 Flammable solid  
H272 May intensify fire; oxidizer

**Precautionary statement(s)**  
**Prevention** P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

<b>Response</b>	P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
<b>Storage</b>	P220 Keep away from clothing and other combustible materials.
<b>Disposal</b>	P370+P378 In case of fire: Use ... to extinguish. none 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.

## 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
4-methylmorpholine 4-oxide, monohydrate	4-methylmorpholine 4-oxide, monohydrate	7529-22-8	231-391-8	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

#### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

#### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

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

no data available

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

no data available

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

### 5.2 Specific hazards arising from the chemical

no data available

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **6.2 Environmental precautions**

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### **6.3 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.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

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.

### **7.2 Conditions for safe storage, including any incompatibilities**

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure limit values**

no data available

#### **Biological limit values**

no data available

### **8.2 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.

### **8.3 Individual protection measures, such as personal protective equipment (PPE)**

#### **Eye/face protection**

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### **Skin protection**

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### **Respiratory protection**

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

#### **Thermal hazards**

no data available

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

Physical state	Solid. Crystalline.
Colour	Light yellow.
Odour	no data available
Melting point/freezing point	179 - 183 °C. Atm. press.:101.325 kPa. Remarks:Pressure at which the measurements were taken was not reported; ambient conditions anticipated.
Boiling point or initial boiling point and boiling range	Atm. press.:102.3 kPa.
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	-27°C(lit.)
Auto-ignition temperature	Remarks:No self ignition observed.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water: 335 g/L. Temperature:20 °C. pH:Ca. 8.6.
Partition coefficient n-octanol/water	log Pow = -1.2. Temperature:25 °C.
Vapour pressure	1.41 mBar. Temperature:20 °C. Remarks:The result is the mean of 2 runs.
Density and/or relative density	1.135 (corresponds to D4(20)). Temperature:20 °C.
Relative vapour density	no data available
Particle characteristics	no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - rat (male/female) - 9 200 mg/kg bw.
- Inhalation: no data available

- Dermal: LD50 - rabbit (male/female) - > 8 000 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**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**

no data available

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**SECTION 12: Ecological information****12.1 Toxicity**

- Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 31 200 mg/L - 48 h. Remarks: Recalculated to pure substance.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - > 100 mg/L - 48 h.
- Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - > 100 mg/L - 72 h.
- Toxicity to microorganisms: EC20 - activated sludge, domestic - > 1 000 mg/L - 30 min. Remarks: Respiration rate.

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Other adverse effects**

no data available

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**SECTION 13: Disposal considerations****13.1 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.

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## **SECTION 14: Transport information**

### **14.1 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.)

### **14.2 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.)

### **14.3 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.)

### **14.4 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.)

### **14.5 Environmental hazards**

ADR/RID: No      IMDG: No      IATA: No

### **14.6 Special precautions for user**

no data available

### **14.7 Transport in bulk according to IMO instruments**

no data available

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## **SECTION 15: Regulatory information**

### **15.1 Safety, health and environmental regulations specific for the product in question**

<b>Chemical name</b>	<b>Common names and synonyms</b>	<b>CAS number</b>	<b>EC number</b>
4-methylmorpholine 4-oxide, monohydrate	4-methylmorpholine 4-oxide, monohydrate	7529-22-8	231-391-8
<b>European Inventory of Existing Commercial Chemical Substances (EINECS)</b>			Listed.
<b>EC Inventory</b>			Listed.
<b>United States Toxic Substances Control Act (TSCA) Inventory</b>			Listed.
<b>China Catalog of Hazardous chemicals 2015</b>			Not Listed.
<b>New Zealand Inventory of Chemicals (NZIoC)</b>			Listed.
<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>			Listed.
<b>Vietnam National Chemical Inventory</b>			Listed.
<b>Chinese Chemical Inventory of Existing Chemical Substances</b>			Listed.

(China IECSC)	
Korea Existing Chemicals List (KECL)	Listed.

## SECTION 16: Other information

### Information on revision

**Creation Date** July 15, 2019

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### 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](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/>

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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