

Morpholine

SAFETY DATA SHEET

according to GHS(fourth revised edition)

Section 1 - Product and Company Identification

Product name	Morpholine
Applicant name	TransChem, Inc
Application address	2141 Palomar Airport Rd. Suite 125 Carlsbad,
Applicant post code	CA 92011
Applicant fax	760-431-6312
Applicant emergency number	1-800-255-3924
Effective date	April 7, 2016

Section 2 –Hazards Identification

Hazard class and label elements of the substance according to GHS(the fourth revised edition):

Hazard class	Flammable liquids	category3
	Acute toxicity, oral	category4
	Acute toxicity, dermal	category4
	Skin corrosion/irritation	category1
	Acute toxicity, inhalation	category4

Pictogram



Signal

Danger

Hazard statement(s)

- H226 Flammable liquid and vapour
- H302 Harmful if swallowed
- H312 Harmful in contact with skin
- H314 Causes severe skin burns and eye damage

H332 Harmful if inhaled

Precautionary statements

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301+P312 IF SWALLOWED: Call a POISON CENTER/ doctor/if you feel unwell.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P362+P364 Take off contaminated clothing and wash it before reuse.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 – Composition/Information on Ingredients

Component	Concentration(%)	CAS No.	EC No.
Morpholine	99%	110-91-8	203-815-1

Section 4 – First Aid Measures

After skin contact

Take off the contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

After eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

After ingestion

Do Not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

After inhalation

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Section 5 – Fire Fighting Measures

Hazardous products of combustion	Carbon oxides, nitrogen oxides
Extinguishing method	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment	Wear self contained breathing apparatus for fire fighting if necessary.

Section 6 – Accidental Release Measure

Personal precautions	Use personal protective equipment. Ensure adequate ventilation. Avoid breathing vapors, mist or gas. Evacuate personnel to safe areas.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods for cleaning up	Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

Handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Storage	Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section 8 – Exposure Controls, Personal Protection

Engineering Controls	Safety shower and eye bath. Mechanical exhaust required.
Respiratory protection	Use a full-face supplied air respirator.
Eye protection	Wear chemical goggles.
Hand Protection	Wear impervious chemical resistant gloves
Body protection	Protective work clothing

Section 9 – Physical and Chemical Properties

Appearance: Colorless oily liquid	Odor: No data available
Odor threshold: No data available	pH value: No data available
Melting point/freezing point(°C): -4.6	Initial boiling point and boiling range(°C): 126-129
Flash point(°C)(closed cup): 38	Evaporation Rate: No data available
Flammability: No data available	Upper explosive limit%(V/V): 10.8
Lower explosive limit%(V/V): 1.8	Vapor pressure(MPa): No data available
Vapor density(g/mL): No data available	Relative density(g/cm³): No data available
Solubility: No data available	Octanol / water partition coefficient: No data available
Auto-ignition temperature(°C): No data available	Decomposition temperature(°C): No data available
Viscosity(m²/s): No data available	

Section 10 – Stability and Reactivity

Reactive	No data available
Chemical stability	Stable under the condition recommended.
Possibility of hazardous reactions	No data available
Avoid conditions	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	No data available

Section 11 – Toxicological Information

Acute toxicity:

Morpholine: LD₅₀(rat,Oral) 1450 mg/kg;LC₅₀(rat,Inhalation,8 h)8000 ppmV;
LD₅₀(rabbit,Dermal)0.5 mL/kg;

Skin corrosion/irritation: No data available

Serious eye damage/eye 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

Specific target organ toxicity – single exposure: No data available

Specific target organ toxicity – repeated exposure: No data available

Aspiration hazard: No data available

Section 12 – Ecological Information

Ecotoxicity:

Morpholine:LC₅₀(Oncorhynchus mykiss,96 h) 180-380mg/L;EC₅₀(Daphnia magna,24 h) 100mg/L

Biodegradability: No data available

Abiotic degradation: No data available

Bioaccumulation: No data available

Other hazards: No data available.

Section 13 – Disposal Considerations

Property of waste: No data available

Methods of disposal: Dispose of in a manner consistent with federal, state, and local regulations. Burning method is recommended.

Precautions of disposal: No data available.

Section 14 - Transport Information

UN number: 2054

UN proper shipping name: MORPHOLINE

Transportation primary hazard class: 8

Transportation secondary hazard class: 3

Packing group: I

Section 15 - Regulatory Information

Component	CHINA	TSCA	ENCS	EINECS
Morpholine	√	√	√	√

Note 1:

CHINA - China Inventory of Existing Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

ENCS - Japan Existing and New Chemical Substances

EINECS - European Inventory of Existing Commercial Chemical Substances

Note 2:

"√" Indicates that the substance included in the regulations

"-" That no data or included in the regulations

Section 16 - Additional Information

Completion Date: April 7,2016

Modification statement: Original. Please update before the implementation of the GHS fifth revised edition.

Other information: The information contained herein is prepared according to UN GHS (the fourth revised edition) and is accurate to the best of our knowledge. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.