Material Safety Data Sheet

Morpholine 10% Solution (RXSOL-40-1382-210)

1. Product and Company Identifaction

Product Name	**Morpholine 10% Solution**
Part Number	RXSOL-40-1382-210

Synonym**: Tetrahydro-2H-1,4-oxazine**
Chemical Formula**: C4H9NO**

Company Details:

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2. Composition / informationon ingredients

Chemical Name	Concentration	CAS Number	EC Number	R Phrases*	Symbols
Morpholine	10%	110-91-8	203-815-1.	10 / 20	Xn.
Distilled Water	90%`	7732-18-5	231-791-2	---------	----------

*See Section 16

3. Hazards Identification

Physical hazards	Corosive skin and eye in Contacr
Health hazards	Harmful if swallowed
Environmental Hazards	Aquatic Chronic 2 - H411
Potential Acute Health Effects	Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Corrosive to skin and eyes on contact. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects	Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation.

4. First Aid Measures

Contact with skin	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Contact with eyes	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
Ingestion	Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Inhalation	Allow the victim to rest in a well ventilated area.Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention

5. Fire-fighting Measures

Flammability of theProduct	:	Non-flammable
Auto-Ignition Temperature	:	Not applicable.

Flash Points	:	Not applicable.
Flammable Limits	:	Not applicable.
Products of Combustion	:	These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).
Fire Hazards in Presence of Various Substances	:	Not Available
Explosion Hazards in Presence of Various Substances	:	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	:	Not applicable.
Special Remarks on Fire Hazards	:	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Explosion Hazards	;	Not Available

6. Accidental Release Measures

Personal Precautions	Wear protective clothing as per section 8.
Environmental Precautions	Avoid discharge into drains or watercourses or onto the ground. Contain spillage with sand,earth or other suitable non-combustible material. The product contains substances which are water-soluble and may spread in water systems. The product contains volatile substances which may spread in the atmosphere
Immediate Actions	Shut off source of leak if safe to do so.
Small Spill	Corrosive solid. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill	Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. Handling and Storage

Handling	Keep container dry. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. Never add water to this product In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes
Storage	Materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material.

8. Exposure controls and personal protection

Engineering Control	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respectiveb threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in case of Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 20 CEIL: 30 (ppm) TWA: 70 CEIL: 105 (mg/m3) Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

Odour	:	Amine like. (Slight.)
Taste	:	Not Available
Appereance	:	Clear Liquid
Molecular Weight	:	87.12 g/mole
pH (1% soln/water)	:	Not Available
Boiling Point	:	128.19°C (262.7°F)
Melting Point	:	-4.9°C (23.2°F)
Critical Temperature	:	Not available.
Specific Gravity	:	0.99- 1.00
Vapor Pressure	:	Not available.
Vapor Density	:	Vapor Density: 3 (Air = 1)
Volatility	:	11% (v/v).
Odor Threshold	:	0.1 ppm
Water/Oil Coeff	:	Not available.
Ionicity (in Water):	:	Not available.
Solubility	:	Easily soluble in cold water, hot water.

10. Stability and reactivity

Stability	:	The product is stable.
Instability Temperature	:	Not available.
Conditions of Instability	:	Not Available.
Incompatibility Other	:	Not Available.
Corrosivity	:	Non-corrosive in presence of glass.
Special Remarks on Reactivity	:	Not Available.
Polymerization	:	No

11. Toxicological information

Routes of Entry	Dermal contact. Eye contact. Inhalation. Ingestion
Toxicity to Animals	WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 525 mg/kg [Mouse]. Acute dermal toxicity (LD50): 500 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 11313.7 ppm 4 hour(s) [Rat].
Chronic Effects on Humans	The substance is toxic to lungs, mucous membranes.
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.

12. Ecological information

Ecotoxicity	Not Available
Mobility	Completely soluble in water
BOD5 and COD	Not available
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Special Remarks on the Products of Biodegradation	Not Available

13. Disposal considerations

Disposal considerations	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. Transport information

- **DOT Classification:** NA
- **Identification**: Morpholine Solution
- **Special Provisions for Transport**: Not available.

15. Regulatory information

Federal and State Regulations	Pennsylvania RTK: Morpholine Massachusetts RTK: Morpholine TSCA 8(b) inventory: Morpholine
Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
HMIS (U.S.A.):	**Health Hazard: 3** **Fire Hazard:** 0 **Reactivity: 0** **Personal Protection**: h
National Fire Protection Association	**Health:** 3 **Flammability:** 0 **Reactivity: 0** **Specific hazard:** NA
Protective Equipment:	Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

16. Other information

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