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Version 1

1. PRODUCT AND COMPANY IDENTIFICATION**Product Identifier****Product Name** Misco TMI27 Steam Line Treatment #1311**Other means of identification****SDS #** Misco-TMI27**UN/ID No** UN1760**Recommended use of the chemical and restrictions on use****Recommended Use** Steam and Return Line Treatment.**Uses Advised Against** For industrial and institutional use only.**Details of the supplier of the safety data sheet****Supplier Address**Misco Industrial, LLC
109 Space Park N
Goodlettsville, TN 37072**Emergency Telephone Number****Company Phone Number** 1-615-334-1861 (to reorder)
Emergency Telephone (24 hr) INFOTRAC 1-800-535-5053 (North America)
1-703-741-5500 (International)**2. HAZARDS IDENTIFICATION****Appearance** Colorless liquid**Physical State** Liquid**Odor** Amine**Classification**

Skin corrosion/irritation	Category 1 Sub-category C
Serious eye damage/eye irritation	Category 1
Flammable Liquids	Category 4

Signal Word**Danger****Hazard Statements**

Causes severe skin burns and eye damage. Combustible liquid.

**Precautionary Statements - Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Precautionary Statements - Response

Immediately call a poison center or doctor/physician.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a poison center or doctor/physician.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IN CASE OF FIRE: Use CO2, dry chemical, or foam for extinction.

Precautionary Statements - Storage

Store locked up. Store in a well-ventilated place. Keep cool.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Morpholine	110-91-8	10-30

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

- General Advice** Immediately call a poison center or doctor/physician.
- Eye Contact** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
- Skin Contact** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
- Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
- Ingestion** Rinse mouth. Do not induce vomiting.

Most important symptoms and effects

- Symptoms** Causes severe skin burns and eye damage.

Indication of any immediate medical attention and special treatment needed

- Notes to Physician** Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray (fog). Dry chemical. Alcohol resistant foam. Carbon dioxide (CO2).

Unsuitable Extinguishing Media Water may be ineffective in fighting fire.

Specific Hazards Arising from the Chemical

Sealed containers may rupture due to pressure build-up, greatly increasing the hazard.

Hazardous Combustion Products When strongly heated, as in a fire, this product may produce oxides of carbon, ammonia, nitrogen aldehydes and ketones.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Water spray should be used to keep containers cool.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Ventilate area. Eliminate all sources of ignition. Clean up with non-flammable absorbent such as clay or vermiculite and place in a labeled, closed metal container for proper disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing and eye/face protection. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store locked up. Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store in a cool, dry place away from direct heat. Do not store in unlabeled or mislabeled containers. Keep from freezing.

Incompatible Materials Strong acids. Strong oxidizing agents. Avoid mixing with nitrates.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Morpholine 110-91-8	TWA: 20 ppm S*	TWA: 20 ppm TWA: 70 mg/m ³ (vacated) TWA: 20 ppm (vacated) TWA: 70 mg/m ³ (vacated) STEL: 30 ppm (vacated) STEL: 105 mg/m ³ (vacated) S* S*	IDLH: 1400 ppm TWA: 20 ppm TWA: 70 mg/m ³ STEL: 30 ppm STEL: 105 mg/m ³

Appropriate engineering controls

Engineering Controls Provide adequate ventilation and local exhaust is generally adequate. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Chemical safety goggles are recommended.

- Skin and Body Protection** Chemical resistant gloves are recommended. Shirts with long sleeves or lab coats or coveralls are recommended.
- Respiratory Protection** None required if good ventilation is maintained. If TLV is exceed, use a NIOSH/ MSHA approved respirator.
- General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Amine
Appearance	Colorless liquid		
Color	Colorless		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	10.5-11.5		
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	100 °C / 212 °F		
Flash Point	62.2 °C / 144 °F	Tag Closed Cup	
Evaporation Rate	1.00	(Water = 1)	
Flammability (Solid, Gas)	Liquid-Not applicable		
Upper Flammability Limits	10.8		
Lower Flammability Limit	1.8		
Vapor Pressure	Not determined		
Vapor Density	3.0		
Specific Gravity	1.03	(Water = 1)	
Water Solubility	Completely soluble		
Solubility in other solvents	Not determined		
Partition Coefficient	Not determined		
Auto-ignition Temperature	Not determined		
Decomposition Temperature	Not determined		
Kinematic Viscosity	Not determined		
Dynamic Viscosity	Not determined		
Explosive Properties	Not determined		
Oxidizing Properties	Not determined		
VOC Content	20%		

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid

Incompatible Materials.

Incompatible Materials

Strong acids. Strong oxidizing agents. Avoid mixing with nitrates.

Hazardous Decomposition Products

When heated strongly, as in a fire, this product may produce ammonia, oxides of carbon, nitrogen, aldehydes and ketones.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.
Skin Contact Causes severe skin burns.
Inhalation Do not inhale.
Ingestion Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Morpholine 110-91-8	= 1050 mg/kg (Rat)	310 - 810 mg/kg (Rabbit)	= 8000 ppm (Rat) 8 h

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Group 3 IARC components are "not classifiable as human carcinogens".

Chemical Name	ACGIH	IARC	NTP	OSHA
Morpholine 110-91-8		Group 3		

Legend

*IARC (International Agency for Research on Cancer)
 Group 3 IARC components are "not classifiable as human carcinogens"*

Numerical measures of toxicity

Not determined.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Not determined.

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Not determined.

Other Adverse Effects

Not determined.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and

regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No UN1760
Proper Shipping Name Corrosive liquids, n.o.s. (Morpholine, aqueous mixture)
Hazard Class 8
Packing Group III

IATA

UN/ID No UN1760
Proper Shipping Name Corrosive liquids, n.o.s. (Morpholine, aqueous mixture)
Hazard Class 8
Packing Group III

IMDG

UN/ID No UN1760
Proper Shipping Name Corrosive liquids, n.o.s. (Morpholine, aqueous mixture)
Hazard Class 8
Packing Group III

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Morpholine	Present	X		Present		Present	X	Present	X	X

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*
- ENCS - Japan Existing and New Chemical Substances*
- IECSC - China Inventory of Existing Chemical Substances*
- KECL - Korean Existing and Evaluated Chemical Substances*
- PICCS - Philippines Inventory of Chemicals and Chemical Substances*
- AICS - Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Morpholine 110-91-8	X	X	X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards Not determined	Flammability Not determined	Instability Not determined	Special Hazards Not determined
<u>HMIS</u>	Health Hazards 2	Flammability 2	Physical Hazards 0	Personal Protection N+P

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet