



# Safety Data Sheet

## Section 01 - Identification

Product Identifier	No. 45 Corrosion Inhibitor
Other Means of Identification	None
Product Use and Restrictions on Use	Used for protecting steam condensate lines in food and industrial plants against rust, pitting and corrosion
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522

## Section 02 - Hazard Identification

### GHS-Classification

Acute Toxicity-Oral	Category 4
Acute Toxicity-Dermal	Category 4
Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Irritation	Category 1
Reproductive Toxicity	Category 2

### Physical Hazards

Flammable Liquid	Category 3
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### Danger

### Hazards Statements

- H302 – Harmful if swallowed.
- H312 – Harmful in contact with skin.
- H314 – Causes severe skin burns and eye damage.
- H361 – Suspected of damaging fertility or the unborn child.
- H226 – Flammable liquid and vapour.

### Pictograms



## Precautionary Statements

P201 – Obtain special instructions before use.

P202 – Do not handle until all safety precautions have been read and understood.

P260 – Do not breathe mist, vapours or spray.

P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P280 – Wear protective gloves, protective clothing, eye protection, and face protection.

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

P363 – Wash contaminated clothing before reuse.

P310 – Immediately call a POISON CENTER or doctor/physician.

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

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

P321 – Specific treatment: Drink plenty of milk or water to dilute chemical.

P330 – Rinse mouth.

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

P405 – Store locked up.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

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## Section 03 - Composition / Information on Ingredients

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Chemical Name	CAS Number	Weight %	Unique Identifiers
Cyclohexylamine	108-91-8	7-13%	
Morpholine	110-91-8	3-7%	

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## Section 04 - First Aid Measures

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<b>Inhalation</b>	Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention if difficulties persist.
<b>Skin Contact / Absorption</b>	Remove contaminated clothing. Rinse skin with lukewarm, gently flowing water for 30 minutes. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
<b>Eye Contact</b>	Flush immediately with water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. If a contact lens is present, remove only if easy to do so. Seek immediate medical attention.
<b>Ingestion</b>	Do not induce vomiting. Drink large quantities of water or milk to dilute the chemical. Seek immediate medical attention.
<b>Additional Information</b>	Not Available.

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## Section 05 - Fire Fighting Measures

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<b>Suitable Extinguishing Media</b>	Carbon dioxide and dry chemical extinguishers. Use water spray to disperse vapours.
<b>Unsuitable Extinguishing Media</b>	Not Available
<b>Specific Hazards Arising From the Chemical</b>	Nitrogen oxides
<b>Special Protective Equipment and Precautions for Fire-Fighters</b>	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
<b>Further Information</b>	Not Available

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## Section 06 - Accidental Release Measures

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**Personal Precautions / Protective Equipment / Emergency Procedures** Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so.

**Environmental Precautions** Prevent material from entering sewers or water ways.

**Methods and Materials for Containment and Cleaning Up** Flush with water to remove any residue. Neutralize minor spills with dilute acid before washing away with plenty of water.

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## Section 07 - Handling and Storage

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**Precautions for Safe Handling** Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.

**Conditions for Safe Storage** Store in cool area above freezing point away from incompatible materials.

**Incompatibilities** Oxidizing materials, acids, copper, copper alloys, lead

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## Section 08 - Exposure Controls and Personal Protection

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### Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Cyclohexylamine	ACGIH	TLV-TWA	10 ppm
		PEL-TWA	10 ppm
Morpholine	ACGIH	TLV	20 ppm (skin)
	OSHA	PEL-TWA	20 ppm (skin)

### Engineering Control(s)

**Ventilation Requirements** Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

**Other** Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

### Protective Equipment

**Eyes/Face** Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

**Hand Protection** Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

**Skin and Body Protection** Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.  
Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

**Respiratory Protection** Approved respiratory protection should be used if chance of mist will be formed.

**Thermal Hazards** Not Available

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## Section 09 - Physical and Chemical Properties

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### Appearance

<b>Physical State</b>	Liquid
<b>Colour</b>	Pale
<b>Odour</b>	Amine type odour
<b>Odour Threshold</b>	Not Available

### Property

<b>pH</b>	Strong base
<b>Melting Point/Freezing Point</b>	Not Available
<b>Initial Boiling Point and Boiling Range</b>	Not Available
<b>Flash Point</b>	48°C
<b>Evaporation Rate</b>	Not Available
<b>Flammability</b>	Flammable liquid
<b>Upper Flammable Limit</b>	Not Available
<b>Lower Flammable Limit</b>	Not Available
<b>Vapour Pressure (mm Hg, 20°C)</b>	Not Available
<b>Vapour Density (Air=1)</b>	Not Available
<b>Relative Density</b>	Not Available
<b>Solubility(ies)</b>	Completely soluble
<b>Partition Coefficient: n-octanol/water</b>	Not Available
<b>Auto-ignition Temperature</b>	Not Available
<b>Decomposition Temperature</b>	Not Available
<b>Viscosity</b>	Not Available
<b>Explosive Properties</b>	Vapours are heavier than air and may "travel" to source of ignition causing fire and explosion.
<b>Specific Gravity (Water=1)</b>	0.987
<b>% Volatiles by Volume</b>	Not Available
<b>Formula</b>	Not Available
<b>Molecular Weight</b>	Not Available

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## Section 10 - Stability and Reactivity

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<b>Reactivity</b>	Not Available
<b>Stability</b>	Stable under normal conditions.
<b>Possibility of Hazardous Reactions</b>	Not Available
<b>Conditions to Avoid</b>	Not Available
<b>Incompatible Materials</b>	Oxidizing materials, acids, copper, copper alloys, lead
<b>Hazardous Decomposition Products</b>	Nitrogen oxides

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## Section 11 - Toxicological Information

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### Acute Toxicity Estimate

<b>Component</b>	<b>Oral LD<sub>50</sub></b>	<b>Dermal LD<sub>50</sub></b>	<b>Inhalation LC<sub>50</sub></b>
No. 45 Corrosion Inhibitor	1,034 mg/kg	1,641 mg/kg	314 mg/L

This product has been classified in accordance with the Hazardous Products Regulations using ATE formula documented in the GHS standard.

### Chronic Toxicity – Carcinogenicity

<b>Component</b>	<b>IARC</b>
No. 45 Corrosion Inhibitor	Group 3: Not classifiable as to its carcinogenicity to humans.

<b>Skin Corrosion/Irritation</b>	Causes irritation, may cause burns.
<b>Ingestion</b>	Burning in mouth and esophagus; nausea, vomiting, abdominal pain and diarrhea, edema (swelling) of larynx and subsequent suffocation. Perforation of gastrointestinal tract can occur. May cause liver, kidney, central nervous system depression and blood system damage.
<b>Inhalation</b>	Mist can cause irritation of respiratory tract and inflammation of lungs.
<b>Serious Eye Damage/Irritation</b>	Causes severe irritation to the mucous membranes of the eyes. May cause ulceration of the eye.
<b>Respiratory or Skin Sensitization</b>	Repeated or prolonged skin contact with some amine chemicals can cause allergic skin sensitization.
<b>Germ Cell Mutagenicity</b>	In a short-term test, cyclohexylamine caused mutations in human white blood cells (leukocytes). It caused chromosome damage in cultured mammalian (including human) cells. In some animal tests, cyclohexylamine produced mutations, while in others it did not. It gave negative results in cytogenic studies in germ cells, in dominant lethal assays, in bacterial tests and in Drosophila.
<b>Reproductive Toxicity</b>	Cyclohexylamine has caused testicular injury in rats at high doses.
<b>STOT-Single Exposure</b>	Morpholine may be absorbed through intact skin causing liver, kidney, CNS depression and blood system damage.
<b>STOT-Repeated Exposure</b>	Long term exposure to morpholine may damage liver and kidneys.
<b>Aspiration Hazard</b>	Massive exposures might cause potential fatal lung damage (pulmonary edema).
<b>Synergistic Materials</b>	Exposure to morpholine and nitrites at the same time can lead to the production of N-nitrosomorpholine, a potent mutagen and carcinogen in a variety of test systems.

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## Section 12 – Ecological Information

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### Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Cyclohexylamine	EC <sub>50</sub> (Green algae, 96hr): 20mg/L	LC <sub>50</sub> (Oncorhynchus mykiss, 96hr): 44-90mg/L	EC <sub>50</sub> (Daphnia magna, 24hr): 49mg/L
Morpholine	EC <sub>50</sub> (Green algae, 96hr): 28mg/L	LC <sub>50</sub> (Gambusia affinis, 96hr): 6.8mg/L	EC <sub>50</sub> (Daphnia magna, 24hr): 100mg/L
<b>Biodegradability</b>	Morpholine and cyclohexylamine are both biodegradable.		
<b>Bioaccumulation</b>	Not Available		
<b>Mobility</b>	Not Available		
<b>Other Adverse Effects</b>	Not Available		

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## Section 13 – Disposal Considerations

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<b>Waste From Residues/Unused Products</b>	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
<b>Contaminated Packaging</b>	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

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## Section 14 – Transport Information

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<b>UN Number</b>	UN2920						
<b>UN Proper Shipping Name</b>	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Cyclohexylamine)						
<b>Transport Hazard Class(es)</b>	8(3)						
<b>Packaging Group</b>	II						
<b>Environmental Hazards</b>	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.						
<b>Special Precautions</b>	Not Available						
<b>Transport in Bulk</b>	Not Available						
<b>Additional Information</b>	<table><thead><tr><th><u>Packing Group</u></th><th><u>Limited Quantity Index</u></th></tr></thead><tbody><tr><td>I</td><td>0</td></tr><tr><td>II</td><td>1 L</td></tr></tbody></table>	<u>Packing Group</u>	<u>Limited Quantity Index</u>	I	0	II	1 L
<u>Packing Group</u>	<u>Limited Quantity Index</u>						
I	0						
II	1 L						

### TDG

<b>Other</b>	Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.
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**TDG PRODUCT CLASSIFICATION:** This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

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## Section 15 – Regulatory Information

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**NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.**

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## Section 16 – Other Information

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**Preparation Date**

August 27, 2015

**Note:** The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

**Attention: Receiver of the chemical goods / SDS coordinator**

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution<sup>®</sup> initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

**References:**

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA
- 7) PAN

**ClearTech Industries Inc. - Locations**

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