MATERIAL SAFETY DATA SHEET

Date Issued: 03/25/2008
MSDS No: WST145
Date Revised: 01/18/2011
Revision No: 1

STEAM 145

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: STEAM 145
GENERAL USE: Water Treatment Compound
PRODUCT DESCRIPTION: INDUSTRIAL WATER TREATMENT COMPOUND
PRODUCT CODE: WST145A
PRODUCT FORMULATION NAME: STEAM 145
ACTIVE INGREDIENT(S): Cyclohexylamine; Morpholine; 2-Diethylaminoethanol

MANUFACTURER
Zee Company, Inc.
4146 South Creek Road
Chattanooga, TN 37406
Emergency Contact: James A. Faller
Service Number: (423) 698-1401

24 HR. EMERGENCY TELEPHONE NUMBERS
CHEMTREC (800) 424-9300

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Colorless liquid

IMMEDIATE CONCERNS: May cause eye damage and skin irritation

POTENTIAL HEALTH EFFECTS

EYES: Corrosive to eyes

SKIN: Skin irritation, possibly severe, if exposed to undiluted material for extended period.

INGESTION: Harmful or fatal if swallowed.

INHALATION: Irritating

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Severe irritation and burning

SKIN: Redness and irritation

INGESTION: Gastric pain and vomiting

INHALATION: Coughing and sneezing from extreme exposure.

CHRONIC EFFECTS: N/A

CARCINOGENICITY: N/A

MUTAGENICITY: N/A

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: N/A

TERATOGENIC EFFECTS: N/A

MEDICAL CONDITIONS AGGRAVATED: None known

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Cyclohexylamine	~ 13	108-91-8
Morpholine	~ 13	110-91-8
2-Diethylaminoethanol	~ 13	100-37-8

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4. FIRST AID MEASURES

EYES: Flush eyes with running water for at least 15 minutes. Get medical attention and check for corneal damage.

SKIN: Flush exposed skin with water for at least 15 minutes and get medical attention if irritation persists.

INGESTION: DO NOT induce vomiting. If conscious, give several large glasses of water. Never give anything by mouth to an unconscious person. Call physician immediately.

INHALATION: Move to fresh air. Get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: None

FLAMMABLE LIMITS: NA to NA

AUTOIGNITION TEMPERATURE: None

EXTINGUISHING MEDIA: This material is not combustible. Use extinguishing media appropriate for surrounding fire.

EXPLOSION HAZARDS: NONE

FIRE FIGHTING PROCEDURES: NONE

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Mop up spill and flush area with water.

LARGE SPILL: Dike spill and vacuum or pump spilled material into proper storage container for hazardous waste disposal.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep this and all chemicals out of the reach of children.

STORAGE: Do not freeze. Keep container closed when not in use. Follow label instructions.

ELECTROSTATIC ACCUMULATION HAZARD: N/A

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		**ppm**	**mg/m³**	**ppm**	**mg/m³**
Cyclohexylamine	**TWA**	10 [1]	41 [1]	10	41

OSHA TABLE COMMENTS:
1. 8 Hours

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Chemical resistant safety goggles/glasses with side shields.

SKIN: Chemical resistant gloves recommended for any prolonged or repeated contact with any chemicals.

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RESPIRATORY: Not required
PROTECTIVE CLOTHING: Not required
WORK HYGIENIC PRACTICES: Always use goodhousekeeping procedures when handling chemicals.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
ODOR: Ammonia or strong amine
APPEARANCE: Clear liquid
COLOR: Colorless
pH: ~ 12
PERCENT VOLATILE: 100
VAPOR PRESSURE: Not Determined
VAPOR DENSITY: Greater than 3
BOILING POINT: > (270°F)
FREEZING POINT: Not Determined
MELTING POINT: Not Determined
FLASHPOINT AND METHOD: None
SOLUBILITY IN WATER: Completely Miscible
EVAPORATION RATE: < 1 (Water = 1)
SPECIFIC GRAVITY: ~ 0.984
WEIGHT PER VOLUME: 8.2 lb/gal

10. STABILITY AND REACTIVITY

STABLE: Yes
HAZARDOUS POLYMERIZATION: No
POLYMERIZATION: Hazardous polymerization will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Heat, carbon dioxide, carbon monoxide
INCOMPATIBLE MATERIALS: None known

11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY
IARC: Ingredients not listed.
NTP: Ingredients not listed.
OSHA: Ingredients not listed.

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY (ACUTE): Ceriodaphnia dubia 48 hr. LC50 62 mg/L. Pimephales promelas 48 hr. LC50 222 mg/L.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of in accordance with Federal, State and local regulations.

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14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (Contains Cyclohexylamine, Morpholine, Dietylethanolamine)

PRIMARY HAZARD CLASS/DIVISION: 8

UN/NA NUMBER: 2735

PACKING GROUP: II

REPORTABLE QUANTITY (RQ) UNDER CERCLA: 6280 gallons

BULK FREIGHT CLASS: 55

PLACARDS: Corrosive

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: Reporting required for inventory above TPQ

ACUTE: Yes

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR370): 6280 gallons

313 REPORTABLE INGREDIENTS: Not required

302/304 EMERGENCY PLANNING

EMERGENCY PLAN: Section 302 reporting not required. Section 304 reporting is required for releases above the threshold amount listed.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: Same as section 304

Chemical Name	Wt.%	CERCLA RQ
Cyclohexylamine	~ 13	1

REPORTABLE SPILL QUANTITY: 6280 gallons

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
Cyclohexylamine	108-91-8

TSCA REGULATORY: INGREDIENTS LISTED

RCRA STATUS: N/A

16. OTHER INFORMATION

APPROVED BY: James A. Faller **TITLE:** Director of Research

PREPARED BY: James A Faller

INFORMATION CONTACT: James Faller

REVISION SUMMARY: Revision #: 1. This MSDS replaces the January 18, 2011 MSDS. Any changes in information are as follows: In Section 16: HMIS Flammability

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HMIS RATING

HEALTH:	1
FLAMMABILITY:	2
PHYSICAL HAZARD:	1
PERSONAL PROTECTION:	C

GENERAL STATEMENTS: The information contained herein is believed to be accurate but is not warranted to be so. Users are advised to confirm in advance of need that information is current, applicable, and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed.