Safety Data Sheet
acc. to OSHA HCS

Printing date 10/20/2014 Reviewed on 10/07/2014

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1 Identification

· **Product identifier** Industrial water treatment compound

· **Trade name:** **STEAM 140**

· **Article number:** WST140A

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
ZEE COMPANY, INC.
4146 South Creek Road
Chattanooga, TN 37406

· **Information department:** Technical Services: 423-698-1401
· **Emergency telephone number:** CHEMTREC: 800-424-9300

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Corrosive
Causes burns.

Harmful
Harmful in contact with skin and if swallowed. Possible risk of impaired fertility.

Irritant
Irritating to respiratory system.

· **Information concerning particular hazards for human and environment:**
The product has to be labeled due to the calculation procedure of international guidelines.

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· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**

· **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**

Corrosive

· **Hazard-determining components of labeling:**
cyclohexylamine
2-diethylaminoethanol
morpholine

· **Risk phrases:**
Harmful in contact with skin and if swallowed.
Causes burns.
Irritating to respiratory system.
Possible risk of impaired fertility.

· **Safety phrases:**
Keep locked up and out of the reach of children.
In case of contact with eyes, rinse immediately with running water for at least 15 minutes. Get medical attention.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Dispose of this material and its container to hazardous or special waste collection point.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 1

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 1

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

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· **Dangerous components:**		
108-91-8	cyclohexylamine	35-45%
100-37-8	2-diethylaminoethanol	2.5-10%
110-91-8	morpholine	≤ 2.5%

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4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:**
Remove to fresh air. If symptoms persist consult a doctor.
In case of unconsciousness, immediately seek medical attention.
· **After skin contact:**
Remove contaminated clothing and flush area with running water for a minimum of 15 minutes. If irritation persists consult a doctor.
· **After eye contact:**
Immediately flush open eye with running water for a minimum of 15 minutes. Immediately get medical attention.
· **After swallowing:**
Immediately contact a doctor or Poison Control Center.
Do not induce vomiting. Rinse mouth out with water, and drink several glasses of water. Never give anything by mouth to an unconscious person.
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to penetrate the ground/soil.
Do not allow to enter surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

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· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool, dry, well ventilated area.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
108-91-8 cyclohexylamine	
REL	Long-term value: 40 mg/m³, 10 ppm
TLV	Long-term value: 41 mg/m³, 10 ppm
100-37-8 2-diethylaminoethanol	
PEL	Long-term value: 50 mg/m³, 10 ppm Skin
REL	Long-term value: 50 mg/m³, 10 ppm Skin
TLV	Long-term value: 9.6 mg/m³, 2 ppm Skin
110-91-8 morpholine	
PEL	Long-term value: 70 mg/m³, 20 ppm Skin
REL	Short-term value: 105 mg/m³, 30 ppm Long-term value: 70 mg/m³, 20 ppm Skin
TLV	Long-term value: 71 mg/m³, 20 ppm Skin

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.

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Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Apron

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Colorless
· **Odor:**	Amine-like
· **Odor threshold:**	Not determined.
· **pH-value at 20 °C (68 °F):**	12.3
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.

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· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure:**	Not determined.
· **Density at 20 °C (68 °F):**	0.965 g/cm³ (8.053 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Other information**	No further relevant information available.

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10 Stability and reactivity

· **Reactivity**
· **Chemical stability** Stable
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
108-91-8 cyclohexylamine		
Oral	LD50	156 mg/kg (rat)
Dermal	LD50	277 mg/kg (rabbit)
100-37-8 2-diethylaminoethanol		
Oral	LD50	1300 mg/kg (rat)
Inhalative	LC50/4 h	5 mg/l (mouse)

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.

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· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
110-91-8	morpholine	3

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

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13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Dispose of in accordance with federal, state, and local regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN3267
· **UN proper shipping name**	
· **DOT, IMDG, IATA**	Corrosive liquid, basic, organic, n.o.s. (Cyclohexylamine, 2-Diethylaminoethanol)
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	8 Corrosive substances
· **Label**	8
· **Class**	8 Corrosive substances
· **Label**	8
· **IMDG, IATA**	

· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, IMDG, IATA**	II
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Corrosive substances
· **Danger code (Kemler):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	Alkalis
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· **IMDG**	
· **Limited quantities (LQ)**	1L

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· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN3267, Corrosive liquid, basic, organic, n.o.s. (Cyclohexylamine, 2-Diethylaminoethanol), 8, II

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**	
108-91-8	cyclohexylamine

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**		
108-91-8	cyclohexylamine	A4
110-91-8	morpholine	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Product related hazard informations:**
The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**

Corrosive

· **Hazard-determining components of labeling:**
cyclohexylamine
2-diethylaminoethanol

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morpholine

· **Risk phrases:**
Harmful in contact with skin and if swallowed.
Causes burns.
Irritating to respiratory system.
Possible risk of impaired fertility.

· **Safety phrases:**
Keep locked up and out of the reach of children.
In case of contact with eyes, rinse immediately with running water for at least 15 minutes. Get medical attention.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Dispose of this material and its container to hazardous or special waste collection point.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:** Jim Faller/Keith Seyfried
· **Date of preparation / last revision** 10/20/2014 / 1
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Repr. 2: Reproductive toxicity, Hazard Category 2

· *** Data compared to the previous version altered.**