MATERIAL SAFETY DATA SHEET

Zee STEAM 190D

Revision Date: 08/01/06
Supersedes: 10/01/02

1. PRODUCT NAME AND COMPANY IDENTIFICATION

Product Name: Zee STEAM 190D **Chemical Name:** Proprietary Mixture, **Chemical Family:** Mixture, **Formula:** Not Applicable, Mixture, **CAS Registry Number:** Not Applicable, Mixture.

Manufacturer: Zee Company, 4146 South Creek Road, Chattanooga, TN. 37406

Telephone Numbers: Product Information: (423) 698-1401

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS#	% by Wt.	Hazardous*
Morpholine	110-91-8	< 18	Yes
Cyclohexylamine	108-91-8	< 18	Yes
Diethylhydroxylamine	3710-84-7	< 15	Yes

The remaining components are comprised of proprietary ingredients.

* By OSHA definition, 29 CFR 1910.1200 (See Section 3 for Hazard Identification and Section 8 for Exposure Guidelines)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Corrosive to the eyes and skin. Moderately toxic.

Routes of Exposure: Contact, ingestion. **Target Organ Effects: Eyes:** Will cause severe eye conjunctivitis seen as marked excessive redness and swelling of the conjunctiva, with discharge and pain. Severe corneal injury could develop along with permanent blindness if not promptly treated. **Skin:** Prolonged contact may result in absorption of harmful amounts of material. Will cause severe local inflammation, swelling, and redness. **Ingestion:** Moderately toxic. May cause irritation of the mouth, throat, and stomach nausea, vomiting, abdominal pain, dizziness, faintness, drowsiness, collapse, and coma. **Inhalation:** Inhalation of high concentrations may be irritating to the respiratory tract and lungs. **Carcinogenicity:** Not a carcinogen. Chronic exposure may result in damage to the liver, kidneys and lungs. Morpholine & DEHA are weakly mutagenic in some invitro genotoxicity assays. Cyclohexylamine has produced embryo toxicity, low birth count, postnatal mortality and decreased body weight in laboratory animals. Cyclohexylamine administered in the diet to mice induced testicular atrophy.

4. FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during this flushing with water. Obtain medical assistance immediately. **Skin:** Immediately wash skin with plenty of water while removing contaminated clothing. Promptly wash with plenty of soap and water to remove all chemical residue. Thoroughly clean contaminated clothing before reuse. Consult physician if irritation or rash develops. **Ingestion:** Immediately give 2-4 glasses of water or milk. DO NOT INDUCE VOMITING. Take immediately to a hospital or physician. Do not attempt to induce vomiting or give anything by mouth to an unconscious person. **Inhalation:** Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. See a physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: Solid product. Product will melt and combustion may occur when exposed to fire. **Hazardous Combustion Products:** Oxides of carbon and nitrogen. **General Hazards:** This material may produce a floating fire hazard in extreme fire conditions. Releases combustible amine vapors when heated to boiling. Closed containers may rupture due to pressure build up when exposed to extreme heat. **Extinguishing Media:** Water, ABC dry chemical. **Fire Fighting Instructions:** Wear full protective gear including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE (SPILL MEASURES)

Wear protective equipment, ventilate the area, and eliminate all sources of ignition. Dike the area to prevent run off. Spill may be neutralized with citric acid, dilute acetic or mineral acids. May be absorbed on a suitable absorbent material. Transfer neutralized and/or absorbed material to a suitable container for disposal.

7. HANDLING AND STORAGE

Handling: Avoid inhalation, contact or ingestion. **Storage:** Store away from extreme heat and open flames. When not in use keep container closed. Store in a cool dry location.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local exhaust preferred. **Eye Protection:** Chemical goggles with face shield. **Skin Protection:** Neoprene or natural rubber gloves, **Respiratory Protection:** Use only NIOSH/MSHA approved respiratory protection if exposure guideline might be exceeded. **Other Protective Equipment:** Boots, apron or any other clothing that can minimize skin contact. **Exposure Guidelines:** Morpholine: TLV = 20 ppm (skin), Cyclohexylamine: TLV = 10 ppm (skin), Others: not established.

9. PHYSICAL AND CHEMICAL PROPERTIES (Typical)

Appearance and Odor: White solid, amine odor. **Boiling Point:** N/A. **pH:** Of a 1% sol'n, 9.5+. **Melting Point:** N/A. **Solubility in H_20:** Complete but dissolve slowly.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable, **Conditions to Avoid:** Acids, oxidizers, and organics. Contact with nitrites may form carcinogenic nitrosamines. Acidification may release toxic SO 2 gas. Avoid intense heat or flames. **Hazardous Decomposition Products:** By fire: oxides of carbon, nitrogen, sulfur and phosphorous. **Hazardous Polymerization:** Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology of this product has not been established

12. ECOLOGICAL INFORMATION

Environmental effects of this product have not been established.

13. DISPOSAL CONSIDERATIONS

Dispose of in an approved hazardous waste container. Disposer must comply with local, state and federal regulations with respect to disposal or discharge.

14. TRANSPORT INFORMATION

DOT Description: Corrosive Solid, n.o.s., UN1759 PGIII (Contains Cyclohexylamine/Morpholine)

15. REGULATORY INFORMATION

All components are listed on the TSCA Inventory. Ingredients do not appear on either Sect. 303, 304 or 313 or SARA Title III.

16. OTHER INFORMATION

Hazard Ratings: HMIS: Health - 3, Flammability - 2, Reactivity - 1, Protective Equipment: C. **NFPA:** Health - 3, Flammability - 2, Reactivity - 1.

The above information is based on data available to us and is believed to be correct. However no warranty, merchantability, fitness for any use or any other warranty is expressed or to be implied regarding the accuracy of these data, the result to be obtained from the use thereof, the hazards connected with the use of the material, or that any such use will not infringe any patent. Since the information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility resulting from its use. This information is furnished upon the condition that the person receiving it shall make his own determination for the suitability of the material for his particular purpose. Zee STEAM 190D MSDS End.