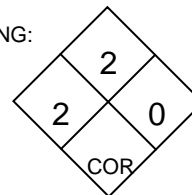


HERITAGE SYSTEMS, INC

NFPA RATING:

4=Severe
3=Serious
2=Moderate
1=Slight
0=Minimal



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **HSI-746 or 3446**
PRODUCT DESCRIPTION: *Condensate Treatment*

COMPANY INFORMATION:
Chemicals, Inc.
13560 Colombar Court
Fontana, California 92337
Non-emergency: 951-681-9697

Revised: October 23, 2006

24-HOUR EMERGENCY TELEPHONE:
CHEMTREC 800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS #	HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Cyclohexylamine	108-91-8	Corrosive	15 – 20	10 ppm	NE	NE	NE
Diethylaminoethanol (DEAE) *	100-37-8	Corrosive	5 – 10	2 ppm	NE	10 ppm (skin)	NE
Morpholine (Morph) **	110-91-8	Corrosive	5 – 10	20 ppm	NE	20 ppm (skin)	NE

* NIOSH Immediately Dangerous to Life or Health concentration (IDLH) for DEAE is 100 ppm.

* NIOSH Immediately Dangerous to Life or Health concentration (IDLH) for morpholine is 1400 ppm (LEL).

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous and/or present at amounts below reportable limits.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Clear, colorless to pale yellow liquid
Ammonia-like odor
DANGER: Product is considered a corrosive material. Harmful if absorbed through skin. May cause severe burning of eyes and skin. Harmful if swallowed. May cause burns to mouth, throat, esophagus and stomach. Harmful if inhaled. May cause moderate to severe irritation to mucous membranes and respiratory tract. Avoid contact. Wear chemical splash goggles, gloves, protective apron and vapor respirator when handling. Use with adequate ventilation. Wash thoroughly after handling. Keep away from heat and flame.

*** In the event of incident, please refer to Emergency Response Guide 132. ***

POTENTIAL HEALTH EFFECTS Eye contact Skin contact Ingestion Inhalation

EYE CONTACT: Exposure to liquid product may cause severe irritation to eyes, and possibly burns or eye damage. Symptoms of exposure may include redness, itching, swelling, tearing or pain. Effects of contact may be delayed. Avoid contact.

SKIN CONTACT: Exposure to liquid product may cause moderate to severe irritation to skin, and possible burns. Symptoms of exposure may include redness, itching, swelling or pain. Effects of contact may be delayed. May cause an allergic skin reaction in sensitive exposed persons. Avoid contact.

INGESTION: Exposure to liquid product may cause moderate to severe irritation to inner linings of mouth, esophagus and gastrointestinal tract, and possible burns. Symptoms of exposure may include nausea, vomiting, diarrhea, dizziness, drowsiness, thirst, faintness, weakness or circulatory collapse. The product is moderately toxic. Do NOT ingest.

INHALATION: Inhalation of vapors or fumes may cause moderate to severe irritation to mucous membranes and respiratory tract. Symptoms of exposure may include nasal discomfort, nasal discharge, coughing and possible chest pain. Avoid contact.

CHRONIC: Prolonged contact may result in destruction of tissue.

CARCINOGENS: This product and its components are not listed on NTP, IARC or OSHA lists as cancer-causing agents. Cyclohexylamine and morpholine are both listed in ACGIH Appendix A as a Group A4 (not classifiable as a human carcinogen) carcinogen.

AGGRAVATION OF PRE-EXISTING CONDITIONS: Existing dermatitis may be aggravated if the product contacts skin. Inhalation may aggravate asthma and inflammatory or fibrotic pulmonary disease.

4. FIRST AID MEASURES

EYE CONTACT: If this product contacts the eyes, immediately flush eyes with plenty of clean running water for at least fifteen (15) minutes, lifting the upper and lower eyelids occasionally. Remove contact lenses if worn. Seek medical attention if irritation persists.

SKIN CONTACT: If this product contacts the skin, immediately flush the affected area with plenty of clean running water for at least fifteen (15) minutes. If the product penetrates the clothing, promptly remove the contaminated clothing or shoes, and flush the affected area as described. Seek medical attention if irritation persists.

INGESTION: If this product is ingested, seek medical attention immediately. Do NOT give the exposed person anything to drink. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: If this product is inhaled, move the exposed person to fresh air promptly. Seek medical attention if symptoms persist. Give artificial respiration if the exposed person is not breathing.

NOTES TO PHYSICIAN: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

FLASH POINT:	110°F (TCC)
FLAMMABLE LIMITS:	Lower Explosion Limit: 1.5%, Upper Explosion Limit: 9.4%
AUTOIGNITION TEMPERATURE:	NA

EXTINGUISHING MEDIA: Water spray may be ineffective. Use alcohol foam, dry chemical, carbon dioxide, sand or limestone to extinguish fire.

FIRE/EXPLOSION HAZARD: Irritating vapors may be emitted during a fire.

FIRE FIGHTING EQUIPMENT: Fire fighters should wear full protective equipment, including butyl rubber boots, gloves, body suit and self-contained breathing apparatus.

SPECIAL PROCEDURES: Use water to cool containers exposed to a fire.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, oxides of nitrogen and ammonia.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use proper personal protection (refer to Section 8). Shut off or remove all sources of ignition. Use caution as spills of this product are very slippery.

ENVIRONMENTAL PRECAUTIONS: Run off from fire control or dilution water may cause pollution. Keep out of drains, municipal sewers, open bodies of water and water course.

CLEAN-UP METHODS: Safely stop source of spill. Clean up spills immediately. Restrict non-essential personnel from the area. Wear protective clothing, goggles and respirator if ventilation is not adequate. Dike spill area and soak up material with dry soil, sand or other absorbent. Place into chemical waste container for disposal according to local, state or federal regulations at an approved chemical waste reprocessing facility. Flush spill area with detergent and water. Do NOT flush into sewer or storm drain.

7. HANDLING AND STORAGE

HANDLING: Use proper personal protection when handling (refer to Section 8). Use under well-ventilated conditions. Avoid contact with eyes, skin and clothing. Avoid breathing vapors and mists. Avoid prolonged or repeated contact. Do NOT ingest. Wash thoroughly after handling. Rinse container before disposal.

SHELF LIFE: The recommended shelf life is two (2) years. It is recommended that products be retested if stored for more than two (2) years. Under ideal storage conditions, the shelf life is almost indefinite.

STORAGE TEMPERATURE: The recommended storage temperature is above 32°F, preferably at room temperature (70°F).

GENERAL: Store closed containers in a cool, dry, well-ventilated area away from incompatible materials. Store in an area designated for flammable liquids. This product is stable under normal conditions of handling and storage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTIVE EQUIPMENT

Please refer to Section 2 for applicable exposure limits.

EYE PROTECTION: To avoid contact with eyes, use chemical splash goggles. Face shield is recommended. Eye wash station should be available in the work area.

HAND PROTECTION: Use neoprene, butyl or nitrile rubber gloves to minimize skin contact.

BODY PROTECTION: Use a rubber apron or impervious clothing (rain gear) to minimize contact. Rubber boots are recommended. Full drench shower should be available in the work area.

RESPIRATOR: Use a NIOSH approved organic vapor respirator to reduce potential for inhalation exposure. When using respirator cartridges, they must be changed frequently to assure breakthrough exposure does not occur.

VENTILATION: General mechanical ventilation is recommended for enclosed areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless to yellow liquid	Boiling Point:	99°C / 210°F
Odor:	Ammonia-like	Freezing Point:	Below -4°C / 25°F
Specific Gravity @ 68°F:	~ 0.98	Vapor Pressure:	6.99 mmHg
pH:	~ 12.8	Vapor Density (air = 1):	4 (DEAE), 3 (Morph)
Water Solubility:	Complete	VOC Content:	~ 40%

10. STABILITY AND REACTIVITY

GENERAL STABILITY: This product is stable at ambient temperatures and atmospheric pressures.

INCOMPATIBLE MATERIALS: Strong oxidizing agents, strong acids, copper, aluminum and zinc.

HAZARDOUS POLYMERIZATION: Hazardous polymerization is not expected to occur under normal temperatures and pressures.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, oxides of nitrogen and ammonia.

11. TOXICOLOGICAL INFORMATION

	<u>Product 3446</u>	<u>Cyclohexylamine</u>	<u>DEAE</u>	<u>Morpholine</u>
Eye irritation:	Corrosive	Corrosive	Moderate to severe	Corrosive
Skin irritation:	Corrosive	Moderate to severe	Moderate to severe	Moderate to severe
Inhalation irritation:	Moderate to severe	Moderate to severe	Slight to moderate	Slight to moderate
Oral LD₅₀, Rat:	> 694 mg/kg	150 mg/kg	2460 mg/kg	1050 mg/kg
Dermal LD₅₀, Rabbit:	> 293 mg/kg	277 mg/kg	1260 mg/kg	1210 mg/kg
Inhalation LC₅₀, Rabbit:	NDA	8 mg/l	NDA	NDA
Other toxicological data:	NA	See below	See below	See below

Cyclohexylamine: High oral doses have resulted in embryo and fetal toxicity and cyclohexylamine has caused fertility problems in mice, probably as a secondary effect from reduced body weights in the mothers. Testicular effects (reduction in weight and spermatogenesis) were observed in rats and dogs exposed orally to high doses (200 – 300 mg/kg/day) or in rats at 100 mg/kg/day or lower.

DEAE: [Significant Data With Possible Relevance to Humans] Contains one or more amines which may react with nitrites to form nitrosamines. Some nitrosamines have been shown to be carcinogenic in laboratory animals. Diethylethanolamine is not mutagenic in a variety of in vitro and in vivo assays. This material has been shown to cause testicular and thyroid atrophy in laboratory animals by chronic feeding. These effects, however, were not observed in a subchronic inhalation study. No adverse effects were noted in the offspring of rats exposed to diethylethanolamine by inhalation during pregnancy.

Morpholine: Although there has been secondary (anecdotal) reports of the potential for morpholine to be a dermal sensitizer in humans, the weight of the available scientific information indicates that morpholine is not expected to be a dermal sensitizer based on animal and human skin patch testing data.

12. ECOLOGICAL INFORMATION

	<u>Product 3446</u>	<u>Cyclohexylamine</u>	<u>DEAE</u>	<u>Morpholine</u>
96 hr LC₅₀, Rainbow trout:	> 2000 mg/l	98 mg/l	NDA	1000 mg/l
48 hr LC₅₀, Daphnia magna:	> 225 mg/l	80 mg/l	44 mg/l	NDA
72 hr EC₅₀, Algae:	> 1900 mg/l	20 mg/l	1000 mg/l	NDA

13. DISPOSAL CONSIDERATIONS

US EPA RCRA Status: This product is considered to be a hazardous waste.
US EPA RCRA Hazardous waste code: D001

Do NOT dump into any sewers, on the ground or into any body of water. Rinse containers before disposal. Since emptied containers contain product residue, follow label warnings even after container is emptied. Do NOT reuse empty containers. Dispose in accordance with all applicable federal, state and local laws and regulations.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

US DOT

Proper Shipping Name: Corrosive Liquid, Flammable, n.o.s., (Cyclohexylamine, Diethylaminoethanol)
Hazard Class: 8, (3)
Hazard Identification Number: UN2920
Packing Group: PGII
Transport Label: Corrosive (primary), flammable (supplemental)

15. REGULATORY INFORMATION

Components:	<u>Cyclohexylamine</u>	<u>DEAE</u>	<u>Morpholine</u>
<u>Carcinogenic Potential</u>			
Regulated by OSHA:	No	No	No
Listed on NTP Report:	No	No	No
Listed by IARC / Group:	No	No	No
ACGIH Appendix A / Group:	Listed / A4	Not listed	Listed / A4
<u>US EPA Release Reporting</u>			
CERCLA (40 CFR 302):			
Listed substance:	Cyclohexylamine	Not listed	Not listed
Reportable quantity:	10000 lbs.	NA	NA
Category:	D	D	D
RCRA waste number:	D001	D002	D001
Unlisted substance:	NA	NA	NA
Reportable quantity:	NA	NA	NA
Characteristic:	NA	NA	NA
RCRA waste number:	NA	NA	NA
<u>SARA TITLE III</u>			
Section 302 & 303 (40 CFR 355):			
Listed substance:	Cyclohexylamine	Not listed	Not listed
Reportable quantity:	10000 lbs.	NA	NA
Planning threshold:	10000 lbs.	NA	NA
Section 311 & 312 (40 CFR 370):			
Hazard categories:	Acute, chronic, fire	Acute, chronic, fire	Acute, chronic, fire
Planning threshold:	NDA	NDA	NDA
Section 313 (40 CFR 372):			
Listed toxic chemical:	Not listed	Not listed	Not listed
Reporting threshold:	NA	NA	NA
<u>US TSCA</u>			
Listed/Exempt (40 CFR 710):	Yes	Yes	Yes
<u>CA PROP 65</u>			
Carcinogen:	No	No	No
Reproductive toxin:	No	No	No

16. OTHER INFORMATION

HMIS Rating

HEALTH	2
FLAMMABILITY	2
REACTIVITY	0
PROTECTION	H

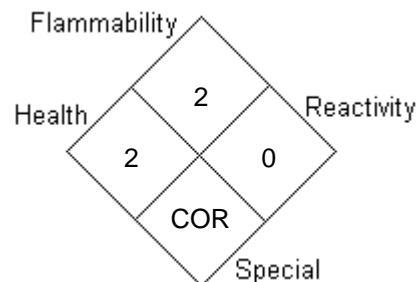
H = Goggles, gloves, protective apron, vapor respirator

KEY

4 = Severe
 3 = Serious
 2 = Moderate
 1 = Slight
 0 = Minimal

ACID = Acid
 ALK = Alkali
 COR = Corrosive
 OX = Oxidizer
 W = Use NO WATER

NFPA Rating



Legend:

ACGIH: American Conference of Governmental Industrial Hygiene
 A1: Confirmed human carcinogen
 A2: Suspected human carcinogen
 A3: Confirmed animal carcinogen
 CAS #: Chemical Abstract Service Registry number
 CERCLA: Comprehensive Environmental Response Compensation and Liability Act
 DOT: Department of Transportation
 EPA: Environmental Protection Agency
 HMIS: Hazardous Materials Identification System
 IARC: International Agency for Research on Cancer
 Group 1: Carcinogenic to humans
 Group 2A: Probably carcinogenic to humans
 Group 2B: Possibly carcinogenic to humans
 Group 3: Unclassified as carcinogenic to humans
 NA or N/A: Not applicable
 ND: Not determined
 NDA: No data available

NE: Not established
 NFPA: National Fire Protection Association
 NIOSH: National Institute for Occupational Safety and Health
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PEL: Permissible Exposure Limit
 RCRA: Resource Conservation and Recovery Act
 REL: Recommended Exposure Limit
 SARA TITLE III: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit (15 minute Time Weighted Average)
 TLV: Threshold Limit Value
 CEIL (C): Ceiling Exposure Limit
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average
 VOC: Volatile Organic Compound
 > / <: Greater than / Less than
 ~: Approximately

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