



SAFETY DATA SHEET

STEAMATE* LSA1793

1. Product and Company Identification

Material name STEAMATE LSA1793
Version # 2.0
Revision date Apr-14-2015
Supersedes date Oct-26-2012
CAS # Mixture
Product application Steam condensate treatment.

Company/undertaking identification

GE Betz, Inc.
 4636 Somerton Road
 Treose, PA 19053
 T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazards Identification

Emergency overview Causes severe skin burns and eye damage. May cause irritation to the respiratory system.

Potential health effects

- Eyes** Corrosive to eyes
- Skin** Corrosive to skin
- Inhalation** Mists/aerosols may cause irritation to upper respiratory tract.
- Ingestion** May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Target organs No evidence of potential chronic effects.

Signs and symptoms Burning pain and severe corrosive skin damage. Causes serious eye damage. May cause respiratory irritation.

Medical conditions aggravated by exposure None known.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Dimethylaminoethanol (DMAE)	108-01-0	60 - 80
Cyclohexylamine	108-91-8	10 - 20
Alkyl diaminopropane	7173-62-8	2.5 - 10

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

4. First Aid Measures

First aid procedures

Inhalation	Move to fresh air. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Get medical attention immediately.
Skin contact	Wash off with soap and water. Get medical attention immediately. Take off contaminated clothing and wash before reuse.
Eye contact	Immediately flush eyes with plenty of low-pressure water for at least 30 minutes while removing contact lenses. Get medical attention immediately. Keep eyelids apart.
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. Get medical attention if symptoms occur. Dilute contents of stomach using 3-4 glasses milk or water.

Notes to physician No specific antidotes are recommended.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media Dry chemical, CO₂, water spray or regular foam.

Protection of firefighters

Protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting

equipment/instructions

In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

6. Accidental Release Measures

Personal precautions

Wear appropriate protective equipment and clothing during clean-up. Avoid contact with spilled material. See Section 8 of the MSDS for Personal Protective Equipment.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

Methods for cleaning up

Ventilate the area. Flush with plenty of water. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

7. Handling and Storage

Handling

No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the MSDS for additional personal protection advice when handling this product.

Storage

Keep container tightly closed in a dry and well-ventilated place.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Cyclohexylamine (CAS 108-91-8)	TWA	10 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

CYCLOHEXYLAMINE (CAS 108-91-8)

Can be absorbed through the skin.

Engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Bulk tanks should be vented externally.

Personal protective equipment

Eye / face protection

Splash proof chemical goggles.

Skin protection

Wear suitable protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Chemical resistant apron. Glove selection must take into account any solvents and other hazards present.

Respiratory protection	A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. If air-purifying respirator use is appropriate, use organic vapor cartridges and any of the following particulate respirators: R95, R99, R100, P95, P99 or P100.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance

Physical state	Liquid
Color	Colorless to light yellow
Odor	Strong amine
Odor threshold	Not available.
pH (concentrated product)	12.9
pH in aqueous solution	11.9 (5% SOL.)
Vapor pressure	< 11 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Boiling point	Not available.
Melting point/Freezing point	< -22 °F (< -30 °C)
Solubility (water)	100 %
Specific gravity (70°F, 21°C)	0.9
Flash point	115 °F (46 °C) P-M(CC)
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.
Evaporation rate	< 1 (Ether = 1)
Viscosity	17 cps
Viscosity temperature	70 °F (21 °C)
Percent volatile	92 (Estimated)
Pour point	< -22 °F (< -30 °C)

10. Chemical Stability & Reactivity Information

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Not available.
Incompatible materials	Strong oxidizing substances.
Hazardous decomposition products	Oxides of carbon evolved in fire.
Possibility of hazardous reactions	Hazardous polymerization does not occur. Contact with strong acids may cause a violent reaction releasing heat. Friction, heat or other sources of ignition may cause a reaction releasing heat and toxic fumes. Contact with oxidizers may cause fire or explosion.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
STEAMATE LSA1793 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	836 mg/kg, (Calculated according to GHS additivity formula (Category 3))

Product	Species	Test Results
<i>Inhalation</i> LC50	Rat	8.04 mg/l, 4 Hours, (Calculated according to GHS additivity formula (Category 3))
<i>Oral</i> LD50	Rat	587 mg/kg, (Calculated according to GHS additivity formula (Category 4))

Components	Species	Test Results
Alkyl diaminopropane (CAS 7173-62-8)		
Acute		
<i>Oral</i> LD50	Rat	500 mg/kg
Cyclohexylamine (CAS 108-91-8)		
Acute		
<i>Dermal</i> LD50	Rabbit	277 mg/kg
<i>Oral</i> LD50	Rat	156 mg/kg
Dimethylaminoethanol (DMAE) (CAS 108-01-0)		
Acute		
<i>Dermal</i> LD50	Rabbit	1220 mg/kg
<i>Inhalation</i> LC50	Rat	6.1 mg/l, 4 Hour
<i>Oral</i> LD50	Rat	1210 mg/kg

Carcinogenicity

ACGIH Carcinogens

Cyclohexylamine (CAS 108-91-8)

A4 Not classifiable as a human carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

12. Ecological Information

Ecotoxicity

Product	Species	Test Results
STEAMATE LSA1793 (CAS Mixture)		
LC50	Fathead Minnow	5.7 mg/l, Static Renewal Bioassay, 96 hour
NOEL	Fathead Minnow	2.5 mg/l, Static Renewal Bioassay, 96 hour
Aquatic		
Crustacea	Daphnia magna	4.9 mg/l, Static Renewal Bioassay, 48 hour
NOEL	Daphnia magna	2.5 mg/l, Static Renewal Bioassay, 48 hour

Partition coefficient

Cyclohexylamine 1.5

13. Disposal Considerations

Disposal instructions

Dispose of contents/container in accordance with local/regional/national/international regulations.

Waste from residues / unused products

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

UN number	UN2734
UN proper shipping name	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (DIMETHYLAMINOETHANOL, CYCLOHEXYLAMINE RQ = 629 LBS)
Transport hazard class(es)	
Class	8
Subsidiary risk	3, 6.1
Packing group	II
Special precautions for user	Not available.
ERG number	132

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number	Not available.
UN proper shipping name	DO NOT SHIP. NOT CLASSIFIED. CALL PRODUCT COMPLIANCE.
Transport hazard class(es)	
Class	Not available.
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
Special precautions for user	Not available.

IMDG

UN number	UN2734
UN proper shipping name	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (DIMETHYLAMINOETHANOL, CYCLOHEXYLAMINE)
Transport hazard class(es)	
Class	8
Subsidiary risk	3
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Not available.

TDG

UN number	UN2734
UN proper shipping name	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (DIMETHYLAMINOETHANOL, CYCLOHEXYLAMINE)
Hazard class	8
Subsidiary hazard class	3
Packing group	II
ERG code	132

DOT





15. Regulatory Information

US federal regulations

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

Cyclohexylamine (CAS 108-91-8) 10000 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity

Cyclohexylamine (CAS 108-91-8) 10000 LBS

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

None listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity, lbs

Cyclohexylamine: 100 lbs

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
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Cyclohexylamine	108-91-8	10000	10000 lbs		
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SARA 311/312 Hazardous chemical	Yes
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Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

State regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Aniline (CAS 62-53-3) Listed: January 1, 1990 Carcinogenic.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Cyclohexylamine (CAS 108-91-8)
 Dimethylaminoethanol (DMAE) (CAS 108-01-0)

US - Pennsylvania RTK - Hazardous Substances

Cyclohexylamine (CAS 108-91-8) Listed.

Dimethylaminoethanol (DMAE) (CAS 108-01-0) Listed.
US - Rhode Island RTK
 Cyclohexylamine (CAS 108-91-8)
US. New Jersey Worker and Community Right-to-Know Act
 Cyclohexylamine (CAS 108-91-8) Listed.
 Dimethylaminoethanol (DMAE) (CAS 108-01-0) Listed.
US. Pennsylvania Worker and Community Right-to-Know Law
 Not listed.

16. Other Information

List of abbreviations

CAS: Chemical Abstract Service Registration Number
 ACGIH: American Conference of Governmental Industrial Hygienists
 TWA: Time Weighted Average
 STEL: Short Term Exposure Limit
 LD50: Lethal Dose, 50%
 LC50: Lethal Concentration, 50%
 NOEL: No Observed Effect Level
 COD: Chemical Oxygen Demand
 BOD: Biochemical Oxygen Demand
 TOC: Total Organic Carbon
 IATA: International Air Transport Association
 IMDG: International Maritime Dangerous Goods Code
 TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
 NFPA: National Fire Protection Association

HMIS® ratings

Health: 3
 Flammability: 2
 Physical hazard: 0
 Personal protection: D

NFPA ratings

Health: 3
 Flammability: 2
 Instability: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This data sheet contains changes from the previous version in section(s):

Composition / Information on Ingredients: Disclosure Overrides
 Physical & Chemical Properties: Multiple Properties
 Toxicological Information: Toxicological Data
 Transport Information: Material Transportation Information
 Material Attributes & Uses; Experimental Data: Physical States
 HazReg Data: North America
 GHS: Classification

Prepared by

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