



# SAFETY DATA SHEET

## STEAMATE\* PAS6071

### 1. Product and Company Identification

**Material name** STEAMATE PAS6071  
**Version #** 2.0  
**Revision date** 07/02/2014  
**Supersedes date** 22/11/2010  
**CAS #** Mixture  
**Product application** Steam condensate treatment.

#### Company/undertaking identification

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

#### Emergency telephone

(800) 877 1940

### 2. Hazards Identification

**Emergency overview** DANGER

Corrosive to skin. Absorbed by skin. Potential sensitizer. Corrosive to the eyes. Vapors, gases, mists and/or aerosols cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.  
Flammable.

#### Potential health effects

**Eyes** Corrosive to eyes  
**Skin** Primary route of exposure Corrosive to skin  
**Inhalation** Primary route of exposure Vapors, gases, mists or aerosols cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.  
**Ingestion** May cause severe irritation or burning of mouth, throat, and gastrointestinal tract with severe chest and abdominal pain, nausea, vomiting, diarrhea, lethargy and collapse. Possible death when ingested in very large doses.

**Target organs** Repeated exposure may cause skin sensitization and/or toxicity to the liver, kidney, nervous system, and blood system. Prolonged or repeated exposures may cause tissue necrosis.

**Signs and symptoms** Inhalation may cause irritation of mucous membranes and respiratory tract. Skin contact may cause severe irritation or burns.

**Medical conditions aggravated by exposure** Skin disorders

### 3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
Cyclohexylamine	108-91-8	10 - 20
Alkyl diaminopropane	7173-62-8	2.5 - 10

Hazardous components	CAS #	Percent
Ethanolamine	141-43-5	2.5 - 10
Non-hazardous components	CAS #	
Water	7732-18-5	

**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

**Eye contact** URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

**Skin contact** URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should give oxygen. Immediately contact a physician.

**Ingestion** Do not feed anything by mouth to an unconscious or convulsive victim. Do NOT induce vomiting! Call a physician or poison control center immediately. Have victim rinse mouth thoroughly with water. Dilute contents of stomach using 4-10 fluid ounces (120-300 ml) of milk or water.

**Notes to physician** Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage. Aspiration into the lungs will result in chemical pneumonia and may be fatal.

#### 5. Fire Fighting Measures

##### Extinguishing media

**Suitable extinguishing media** Carbon dioxide, dry chemicals, foam. Water spray should be used only to cool fire-exposed containers and disperse vapours.

**Fire fighting equipment/instructions** Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

**Hazardous combustion products** Oxides of nitrogen. Oxides of carbon

#### 6. Accidental Release Measures

**Personal precautions** See Section 8 of the MSDS for Personal Protective Equipment.

**Methods for containment** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**Methods for cleaning up** Ventilate area, use specified protective equipment. Remove sources of ignition. Contain and absorb on absorbent material (e.g. sand). Place in waste disposal container. Flush area with water. Spread sand/grit.

#### 7. Handling and Storage

**Handling** Combustible. Bond containers during filling or discharge when performed at temperatures at or above the product flash point. Avoid heat, sparks, open flames and other ignition sources. Corrosive to the eyes Corrosive to skin Do not mix with acidic material.

**Storage** Keep containers closed when not in use. Store in cool, well ventilated area. Keep away from flames and sparks. Avoid atmospheric exposure. If frozen, thaw completely and mix thoroughly prior to use.

#### 8. Exposure Controls / Personal Protection

##### Occupational exposure limits

###### US. ACGIH Threshold Limit Values

Components	Type	Value
Cyclohexylamine (CAS 108-91-8)	TWA	10 ppm
Ethanolamine (CAS 141-43-5)	STEL	6 ppm
	TWA	3 ppm

###### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethanolamine (CAS 141-43-5)	PEL	6 mg/m3

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
		3 ppm
<b>Engineering controls</b>	Adequate ventilation to maintain air contaminants below exposure limits.	
<b>Personal protective equipment</b>		
<b>Eye / face protection</b>	Splash proof chemical goggles. Face shield.	
<b>Skin protection</b>	gauntlet-type butyl gloves, chemical resistant apron	
<b>Respiratory protection</b>	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: N95, N99, N100, R95, R99, R100, P95, P99 or P100.	

## 9. Physical & Chemical Properties

### Appearance

<b>Physical state</b>	Liquid
<b>Color</b>	Colorless to light yellow
<b>Odor</b>	Amine
<b>Odor threshold</b>	Not available.
<b>pH (concentrated product)</b>	12.4
<b>pH in aqueous solution</b>	11.8 (5% DISP.)
<b>Vapor pressure</b>	18 mm Hg
<b>Vapor pressure temp.</b>	70 °F (21 °C)
<b>Vapor density</b>	< 1 (Air = 1)
<b>Boiling point</b>	Not available.
<b>Melting point/Freezing point</b>	27 °F (-3 °C)
<b>Solubility (water)</b>	> 25 %
<b>Specific gravity (70°F, 21°C)</b>	0.983
<b>Flash point</b>	138 °F (59 °C) P-M(CC)
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Evaporation rate</b>	< 1 (Ether = 1)
<b>Viscosity</b>	16 cps
<b>Viscosity temperature</b>	70 °F (21 °C)
<b>Percent volatile</b>	21 (Estimated)
<b>Pour point</b>	32 °F (0 °C)

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Stable under normal storage conditions.
<b>Conditions to avoid</b>	Not available.
<b>Incompatible materials</b>	Avoid contact with strong acids. Avoid contact with strong oxidizers.
<b>Hazardous decomposition products</b>	Oxides of carbon and nitrogen.

## 11. Toxicological Information

### Toxicological data

Components	Species	Test Results
Alkyl diaminopropane (CAS 7173-62-8)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	253 mg/kg
Cyclohexylamine (CAS 108-91-8)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	277 mg/kg
<i>Oral</i>		
LD50	Rat	156 mg/kg
Ethanolamine (CAS 141-43-5)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	1025 mg/kg
<i>Inhalation</i>		
LC50	Rat	1.5 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1720 mg/kg

### Carcinogenicity

#### ACGIH Carcinogens

Cyclohexylamine (CAS 108-91-8) A4 Not classifiable as a human carcinogen.

## 12. Ecological Information

### Ecotoxicity

Product	Species	Test Results	
STEAMATE PAS6071 (CAS Mixture)			
	LC50	Fathead Minnow	3.6 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour
	NOEL	Fathead Minnow	2.5 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour
Crustacea	LC50	Daphnia magna	2.9 mg/l, Acute Toxicity, 48 hour
	NOEL	Daphnia magna	1.3 mg/l, Acute Toxicity, 48 hour
Other	LC50	Rainbow Trout	2.4 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour
	NOEL	Rainbow Trout	1.3 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour

### Partition coefficient

Cyclohexylamine 1.5  
Ethanolamine -1.3

## 13. Disposal Considerations

**Contaminated packaging** Dispose of in a safe manner, in accordance with local regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.

## 14. Transport Information

### DOT

#### Basic shipping requirements:

**UN number** UN2920  
**Proper shipping name** CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Cyclohexylamine RQ = 670 lbs, Ethanolamine)  
**Hazard class** 8  
**Subsidiary hazard class** 3

Material name: STEAMATE\* PAS6071

Version number: 2.0

Packing group II  
Additional information:  
ERG code 132

**TDG**

UN number UN2920  
UN proper shipping name CORROSIVE LIQUIDS, FLAMMABLE, N.O.S. (Cyclohexylamine, Ethanolamine)  
Hazard class 8  
Subsidiary hazard class 3  
Packing group II  
ERG code 132

**IATA**

UN number UN2920  
UN proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Cyclohexylamine, Ethanolamine)  
Transport hazard class(es) 8  
Subsidiary class(es) 3  
Packing group II  
ERG code 132

**IMDG**

UN number UN2920  
UN proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Cyclohexylamine, Ethanolamine)  
Transport hazard class(es) 8  
Subsidiary class(es) 3  
Packing group II

**DOT**



**IATA; IMDG; TDG**



## 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

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** No

**SARA 311/312 Hazardous chemical** No

## 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)

## State regulations

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

Aniline (CAS 62-53-3) Listed: January 1, 1990 Carcinogenic.  
Diethanolamine (CAS 111-42-2) Listed: June 22, 2012 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)  
Ethanolamine (CAS 141-43-5)

### US - New Jersey RTK - Substances: Listed substance

Cyclohexylamine (CAS 108-91-8) Listed.  
Ethanolamine (CAS 141-43-5) Listed.

### US - Pennsylvania RTK - Hazardous Substances

Cyclohexylamine (CAS 108-91-8) Listed.  
Ethanolamine (CAS 141-43-5) Listed.

### US - Rhode Island RTK

Cyclohexylamine (CAS 108-91-8)

## 16. Other Information

### List of abbreviations

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

**Prepared by**

This MSDS has been prepared by GE Water & Process Technologies Regulatory Department  
(1-215-355-3300).

\* Trademark of General Electric Company. May be registered in one or more countries.