

SAFETY DATA SHEET

CONTINUUM* AEC213

1. Identification

Product identifier	CONTINUUM AEC213
Other means of identification	None.
Recommended use	Not available.
Recommended restrictions	None known.

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. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Diethylene triamine penta(methylene-phosphonic acid)	15827-60-8	2.5 - 10
Ethylenediamine tetraacetic acid, tetrasodium salt (EDTA.4Na)	64-02-8	1 - 2.5
Sodium hydroxide	1310-73-2	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

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 SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	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. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles. Face shield.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. 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.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color	Amber to brown
Physical state	Liquid
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	13
pH in aqueous solution	12.2 (5% SOL.)
Melting point/freezing point	10 °F (-12 °C)
Initial boiling point and boiling range	220 °F (104 °C)
Flash point	> 200 °F (> 93 °C) P-M(CC)

Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.28
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	34 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Calculated)
Pour point	15 °F (-9 °C)
Specific gravity	1.28

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity May cause respiratory irritation.

Product	Species	Test Results
CONTINUUM AEC213 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Estimated value)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Estimated value)
Components	Species	Test Results
Diethylene triamine penta(methylene-phosphonic acid) (CAS 15827-60-8)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 7940 mg/kg
<i>Oral</i>		
LD50	Rat	7180 mg/kg
Ethylenediamine tetraacetic acid, tetrasodium salt (EDTA.4Na) (CAS 64-02-8)		
Acute		
<i>Oral</i>		
LD50	Rat	1658 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not available.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not available.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not likely, due to the form of the product.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
CONTINUUM AEC213 (CAS Mixture)		
LC50	Fathead Minnow	375 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
NOEL	Fathead Minnow	250 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic		
Crustacea	LC50	Daphnia magna
		1410 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Product		Species	Test Results
	NOEL	Daphnia magna	1000 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	233 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	62.5 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Ethylenediamine tetraacetic acid, tetrasodium salt (EDTA.4Na) -3.86

Bioconcentration factor (BCF)

Ethylenediamine tetraacetic acid, tetrasodium salt (EDTA.4Na) 3

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

- COD (mgO2/g) 228 (calculated data)
- BOD 5 (mgO2/g) 7 (calculated data)
- BOD 28 (mgO2/g) 15 (calculated data)
- Closed Bottle Test (% Degradation in 28 days) 11 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days) 23 (calculated data)
- TOC (mg C/g) 85 (calculated data)

13. Disposal considerations

- Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.
- Local disposal regulations** Dispose in accordance with all applicable regulations.
- Hazardous waste code** D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
- Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
- Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

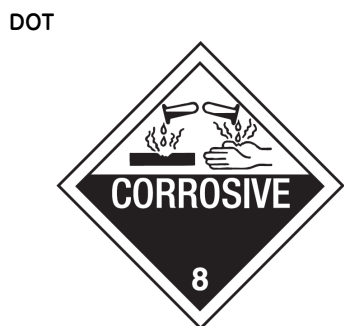
- DOT**
- UN number** UN3266
- UN proper shipping name** CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE RQ = 55556 LBS, DIETHYLENETRIAMINE PENTAMETHYLENE PHOSPHONIC ACID,SODIUM SALT)
- Transport hazard class(es)**
- Class** 8
- Subsidiary risk** -
- Packing group** III
- Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.
- ERG number** 154

IATA

UN number	UN3266
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE, DIETHYLENTRIAMINE PENTAMETHYLENE PHOSPHONIC ACID,SODIUM SALT)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	154
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3266
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE, DIETHYLENTRIAMINE PENTAMETHYLENE PHOSPHONIC ACID,SODIUM SALT)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

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).

**NSF Registered and/or meets
USDA (according to 1998
guidelines):** Registration No. – 139137
Category Code(s):
G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations

US - Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US - Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

US - Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

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

Formaldehyde (CAS 50-00-0)

Listed: January 1, 1988

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.

16. Other information, including date of preparation or last revision

Issue date Apr-22-2016

Revision date Apr-22-2016

Version # 1.0

References: No data available

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.

Revision information Toxicological Information: Toxicological Data
GHS: Classification

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