



BWXT Conversion Services, LLC

August 31, 2015

Ms. Tammi Hudson  
Division of Water, Surface Water Operational Permits Branch  
Kentucky Department of Environmental Protection  
200 Fair Oaks Lane  
Frankfort, KY 40601

Subject: Contract No. DE-AC30-11CC40015, DUF<sub>6</sub> Conversion Project  
Kentucky Pollutant Discharge Elimination System Permit No. KY0004049, Request to  
Modify the Cooling Water Treatment Additive

Dear Ms. Hudson:

BWXT Conversion Services, LLC (BWCS) is requesting approval for the use of the General Electric Water & Process Technologies (GE) inhibitor Gengard GN8206.

Previously on July 2, 2012, the Kentucky Division of Water approved the use of Gengard GN8220, a corrosion inhibitor, for the cooling towers at the Depleted Uranium Hexafluoride (DUF<sub>6</sub>) conversion plant. Recently, BWCS has decided to change its makeup water to the cooling towers from our service water system to our potable water system to achieve better flow without sediment.

The GE representative for Paducah recommends the use of the inhibitor Gengard GN8206 instead of Gengard GN8220, based on the potable water composition and good performance on a similar application in Calvert City, Kentucky. Gengard GN8206 is similar to Gengard GN8220 in regard to toxicity. The recommended dosage for Gengard GN8206 is 80 ppm, whereas for Gengard GN8220, it was 65 ppm. A fact sheet and safety data sheet are provided for Gengard GN8206.

Please contact Joel Siegel, Environmental Program Manager, at (859) 685-9268 if you have any questions or need additional information.

Respectfully,

John D. Woolery  
President and Project Manager

Attachments: 1. Gengard GN8206, Alkaline Cooling Water Treatment Fact Sheet  
2. Gengard GN8206, Safety Data Sheet

|         |                    |                 |                    |
|---------|--------------------|-----------------|--------------------|
| cc/att: | J. Stokes, DOE     | L. Sawyer, DOE  | J. Johnson, DOE    |
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|         | DOE Project File   | Project File    | BWCS Project File  |

DUF6-BWCS-15-00472

# GenGard\* GN8206

## Alkaline Cooling Water Treatment

- Controls deposition and scale with patented technology
- Stable in presence of halogens
- Maximizes protection against deposition and corrosion
- Halogen Stable Azole (HRA) for superior protection of copper or copper alloys
- Minimizes or eliminates acid feed

### Description and Use

GenGard\* GN8206 contains a copper corrosion inhibitor and a blend of deposit control agents designed to prevent both scale formation and particulate fouling in open recirculating cooling water circuits. The product combines a unique Alkaline Enhanced Chemistry (AEC) for calcium carbonate scale control and a Stress Tolerant Polymer (STP) to provide complete deposition control for highly supersaturated waters over the alkaline pH range of 7.8 to 9.0 plus. GenGard GN8206 should be applied with a steel corrosion inhibitor to ensure total system protection.

GenGard GN8206 contains the patented Halogen Resistant Azole (HRA). Unlike conventional azoles, HRA is stable in the presence of halogens such as chlorine and bromine. HRA dramatically improves copper corrosion protection and drastically reduces copper discharge.

a product of  
**ecomagination™**



GE's Alkaline Enhanced Chemistry is a major breakthrough in calcium carbonate scale control. AEC allows high cycles of concentration to be achieved while maintaining heat transfer efficiency. AEC is the only effective non-phosphorus calcium carbonate inhibitor for alkaline pH operation.

Unlike conventional phosphonate deposit control additives, AEC and STP are completely halogen stable. Phosphonates are susceptible to breakdown in the presence of halogen (chlorine and bromine), leading to loss of calcium carbonate inhibition. The superior stability of the AEC/STP/HRA combination allows halogen disinfectants to be effectively utilized to maintain system cleanliness and to control Legionella bacteria.



**Calcium carbonate deposition studies under heat transfer conditions at 135°F (57°C), pH 8.6, 600 ppm Ca Hardness and LSI 2.5 for 6 Days.**

AEC and STP ensure complete deposition control under the most stressful conditions of temperature, flow and water chemistry. The performance of the AEC/STP dispersant package is unmatched by conventional phosphonate/polymer programs.

Find a contact near you by visiting [www.ge.com/water](http://www.ge.com/water) and clicking on "Contact Us".  
\* Trademark of General Electric Company; may be registered in one or more countries.  
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## Treatment and Feeding Requirements

Proper treatment levels for GenGard GN8206 depend on many factors such as the potential scaling conditions particular to a given installation. The product should be used in accordance with control procedures that GE establishes for a specific application.

GenGard GN8206 should be fed to a point in the cooling system where it rapidly mixes with the bulk cooling water.

For best results, GenGard GN8206 should be fed neat (undiluted). Dilutions, if necessary, should only be made with low hardness water.

The feed of GenGard GN8206 is controlled either by a simple and accurate grab sample test or continuously with an on-line monitor. Tanks, pumps, piping, and valves should be made of stainless steel, polyethylene, or PVC.

## General Properties

Physical properties of GenGard GN8206 are shown on the Material Safety Data Sheet, a copy of which is available on request.

## Packaging Information

GenGard GN8206 is a liquid blend, available in a wide variety of customized containers and delivery methods. Contact your GE representative for details.

## Storage

Store GenGard GN8206 at moderate temperatures and protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

## Safety Precautions

A Material Safety Data Sheet containing detailed information about this product is available upon request.



GE Power & Water  
Water & Process Technologies

## SAFETY DATA SHEET

### GENGARD\* GN8206

#### 1. Identification

**Product identifier** GENGARD GN8206  
**Other means of identification** None.  
**Recommended use** Corrosion inhibitor  
**Recommended restrictions** None known.

#### Company/undertaking identification

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

#### Emergency telephone

(800) 877 1940

#### 2. Hazard(s) identification

**Physical hazards** Corrosive to metals Category 1  
**Health hazards** Skin corrosion/irritation Category 1B  
 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** May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

#### Precautionary statement

**Prevention** Keep only in original container. Do not breathe mist or vapor. 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. Immediately call a poison center/doctor/. Specific treatment (see on this label). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

**Storage** Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose of contents/container to approved local facility.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

### 3. Composition/information on ingredients

#### Mixtures

| Chemical name                   | Common name and synonyms | CAS number  | %        |
|---------------------------------|--------------------------|-------------|----------|
| Sodium hydroxide                |                          | 1310-73-2   | 2.5 - 10 |
| Chlorotolyltriazole sodium salt |                          | 202420-04-0 | 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 low-pressure water for at least 30 minutes while removing contact lenses. 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** 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.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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 spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. 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**

Alkaline. Do not mix with acidic material. Take precautions to minimize foaming. Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. 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**

Do not freeze. If frozen, thaw completely and mix thoroughly prior to use. Do not store in aluminum containers. Store locked up. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep only in the original container. Store in a cool, dry place out of direct sunlight. 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 <sup>3</sup> |

**US. ACGIH Threshold Limit Values**

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

**US. NIOSH: Pocket Guide to Chemical Hazards**

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

**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**

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. Glove selection must take into account any solvents and other hazards present.

**Other**

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection**

Chemical respirator with organic vapor cartridge and full facepiece. 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 dark brown

**Physical state** Liquid

**Odor** Slight ammonia

**pH (concentrated product)** 13.3

**pH in aqueous solution** 12.1 (5% SOL.)

**Initial boiling point and boiling range** 220 °F (104 °C)

|   |                             |
|---|-----------------------------|
| <b>Flash point</b>                                  | > 213 °F (> 101 °C) P-M(CC) |
| <b>Evaporation rate</b>                             | < 1 (Ether = 1)             |
| <b>Flammability (solid, gas)</b>                    | Not available.              |
| <b>Upper/lower flammability or explosive limits</b> |                             |
| <b>Explosive limit - lower (%)</b>                  | Not available.              |
| <b>Explosive limit - upper (%)</b>                  | Not available.              |
| <b>Vapor pressure</b>                               | 18 mm Hg                    |
| <b>Vapor pressure temp.</b>                         | 70 °F (21 °C)               |
| <b>Vapor density</b>                                | < 1 (Air = 1)               |
| <b>Relative density</b>                             | 1.18                        |
| <b>Relative density temperature</b>                 | 70 °F (21 °C)               |
| <b>Solubility(ies)</b>                              |                             |
| <b>Solubility (water)</b>                           | 100 %                       |
| <b>Viscosity</b>                                    | 39 cps                      |
| <b>Viscosity temperature</b>                        | 70 °F (21 °C)               |
| <b>Other information</b>                            |                             |
| <b>Percent volatile</b>                             | 0 (Estimated)               |
| <b>Pour point</b>                                   | 26 °F (-3 °C)               |
| <b>Specific gravity</b>                             | 1.18                        |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | Contact with water reactive compounds may cause fire or explosion.                            |
| <b>Conditions to avoid</b>                | Protect from freezing.  |
| <b>Incompatible materials</b>             | Avoid contact with strong acids and oxidisers.  |
| <b>Hazardous decomposition products</b>   | Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.                             |

## 11. Toxicological information

### Information on likely routes of exposure

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

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

### Information on toxicological effects

**Acute toxicity** May cause respiratory irritation.

| Product                      | Species | Test Results   |
|------------------------------|---------|--|
| GENGARD GN8206 (CAS Mixture) |         |  |
| <b>Acute</b>                 |         |  |
| <i>Dermal</i>                |         |  |
| LD50                         | Rabbit  | > 5000 mg/kg, (Calculated according to GHS additivity formula) |
| <i>Oral</i>                  |         |  |
| LD50                         | Rat     | > 5000 mg/kg, (Calculated according to GHS additivity formula) |

| Components  | Species | Test Results |
|---|---------|--------------|
| Chlorotolyltriazole sodium salt (CAS 202420-04-0) |         |              |
| <b>Acute</b>                                      |         |              |
| <i>Dermal</i>                                     |         |              |
| LD50  | Rat     | > 5000 mg/kg |
| <i>Oral</i>                                       |         |              |
| LD50  | Rat     | 3100 mg/kg   |
| Sodium hydroxide (CAS 1310-73-2)                  |         |              |
| <b>Acute</b>                                      |         |              |
| <i>Dermal</i>                                     |         |              |
| LD50  | Rabbit  | 1350 mg/kg   |
| <i>Oral</i>                                       |         |              |
| LD50  | Rabbit  | > 500 mg/kg  |

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

|   |  |
|---|--|
| <b>Skin corrosion/irritation</b>                                      | Causes severe skin burns and eye damage.   |
| <b>Serious eye damage/eye irritation</b>                              | Direct contact with eyes may cause temporary irritation.   |
| <b>Respiratory or skin sensitization</b>                              |  |
| <b>Respiratory sensitization</b>                                      | Not available.   |
| <b>Skin sensitization</b>   | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>   | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.   |
| <b>Carcinogenicity</b>  | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.  |
| <b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b> |  |
| Not listed.   |  |
| <b>Reproductive toxicity</b>  | This product is not expected to cause reproductive or developmental effects.   |
| <b>Specific target organ toxicity - single exposure</b>               | May cause respiratory irritation.  |
| <b>Specific target organ toxicity - repeated exposure</b>             | Not available.   |
| <b>Aspiration hazard</b>  | Based on available data, the classification criteria are not met. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested. |
| <b>Chronic effects</b>  | Prolonged inhalation may be harmful.   |

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Product                      | Species | Test Results   |   |
|------------------------------|---------|----------------|---|
| GENGARD GN8206 (CAS Mixture) |         |                |   |
|                              | LC50    | Fathead Minnow | 266 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |
|                              | NOEL    | Fathead Minnow | 250 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |
| <b>Aquatic</b>               |         |                |   |
| Crustacea                    | LC50    | Daphnia magna  | 503 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted) |
|                              | NOEL    | Daphnia magna  | 250 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted) |
| Fish                         | LC50    | Rainbow Trout  | 127 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |
|                              | NOEL    | Rainbow Trout  | 100 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted) |

| Components  | Species |       | Test Results |
|---|---------|-------|--------------|
| Chlorotolyltriazole sodium salt (CAS 202420-04-0) |         |       |              |
| <b>Aquatic</b>                                    |         |       |              |
| Algae   | EbC50   | Algae | 6.84 mg/l    |
|   | ErC50   | Algae | 18.6 mg/l    |

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

|   |  |
|---|--|
| <b>Bioaccumulative potential</b>                | No data available.   |
| <b>Mobility in soil</b>                         | No data available.   |
| <b>Other adverse effects</b>                    | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.            |
| <b>Environmental fate</b>                       | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| <b>Persistence and degradability</b>            | No data is available on the degradability of this product.   |
| - COD (mgO <sub>2</sub> /g)                     | 302 (calculated data)  |
| - BOD 5 (mgO <sub>2</sub> /g)                   | 21 (calculated data)   |
| - BOD 28 (mgO <sub>2</sub> /g)                  | 43 (calculated data)   |
| - Closed Bottle Test (% Degradation in 28 days) | 12 (calculated data)   |
| - TOC (mg C/g)                                  | 93 (calculated data)   |

### 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | 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. |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]<br>The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | 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).   |
| <b>Contaminated packaging</b>                | 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

|   |   |
|---|---|
| <b>DOT</b>  |   |
| <b>UN number</b>  | UN3267  |
| <b>UN proper shipping name</b>  | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (ACRYLATE TERPOLYMER, SODIUM HYDROXIDE RQ = 26385 LBS) |
| <b>Transport hazard class(es)</b>   |   |
| Class   | 8   |
| Subsidiary risk   | -   |
| <b>Packing group</b>  | III   |
| <b>Special precautions for user</b>   | Read safety instructions, SDS and emergency procedures before handling.                         |
| <b>ERG number</b>   | 153   |
| Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification. |   |
| <b>IATA</b>   |   |
| <b>UN number</b>  | UN3267  |
| <b>UN proper shipping name</b>  | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Acrylate terpolymer, Sodium hydroxide)                |
| <b>Transport hazard class(es)</b>   |   |
| Class   | 8   |
| Subsidiary risk   | -   |
| <b>Packing group</b>  | III   |
| <b>Environmental hazards</b>  | No.   |
| <b>Special precautions for user</b>   | Read safety instructions, SDS and emergency procedures before handling.                         |

**IMDG**

|                                     |  |
|-------------------------------------|--|
| <b>UN number</b>                    | UN3267   |
| <b>UN proper shipping name</b>      | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Acrylate terpolymer, Sodium hydroxide) |
| <b>Transport hazard class(es)</b>   |  |
| <b>Class</b>                        | 8  |
| <b>Subsidiary risk</b>              | -  |
| <b>Packing group</b>                | III  |
| <b>Environmental hazards</b>        |  |
| <b>Marine pollutant</b>             | No.  |
| <b>EmS</b>                          | Not available.   |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling.          |

**DOT**



**IATA; IMDG**



**15. Regulatory information**

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

**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.

**Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)** Hazardous substance

**Safe Drinking Water Act (SDWA)** Not regulated.

**Inventory status**

| Country(s) or region        | Inventory name                                | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Canada                      | Domestic Substances List (DSL)                | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)           | No                     |
| 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** Registration No. - 144531  
**USDA (according to 1998** Category Code(s):  
**guidelines):** G5 Cooling and retort water treatment products  
G7 Boiler, steam line treatment products - nonfood contact

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

**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. 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**

1,4-DIOXANE (CAS 123-91-1) 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** Dec-11-2014

**Revision date** Apr-08-2015

**Version #** 3.0

**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  
TLV: Threshold Limit Value  
IATA: International Air Transport Association  
IMDG: International Maritime Dangerous Goods Code  
NFPA: National Fire Protection Association  
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

**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. The information in the sheet was written based on the best knowledge and experience currently available.

**Revision Information**

Physical & Chemical Properties: Multiple Properties  
Material Attributes & Uses; Experimental Data: Experimental Data

**Prepared by**

This SDS has been prepared by GE Water & Process Technologies Regulatory Department  
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