SAFETY DATA SHEET
SPECTRUS* BD1501E

1. Identification

Product identifier SPECTRUS BD1501E

Other means of identification None.

Recommended use Biodispersant

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 2
- 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 skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Wear eye/face protection. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves.

Response If on skin: Wash with plenty of water/. 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 this label). If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash 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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols, C10, alkoxylated,</td>
<td>166736-08-9</td>
<td>10 - 20</td>
</tr>
</tbody>
</table>

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. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Call a POISON CENTER or doctor/physician if you feel unwell. If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

Skin contact

Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists. If skin irritation occurs: Get medical advice/attention.

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. Get medical attention immediately.

Ingestion

Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. 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.

Firefighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials. 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. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. 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. See Section 8 of the SDS for Personal Protective Equipment. 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. 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.

Ventilate area, use specified protective equipment. Flush area with water. Wet area may be slippery.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage

Precautions for safe handling
Do not get this material in contact with eyes. Avoid breathing mist or vapor. Avoid contact with skin. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. Store in cool, well ventilated area. Store away from oxidizers.

8. Exposure controls/personal protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

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. Adequate ventilation to maintain air contaminants below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection
Splash proof chemical goggles.

Skin protection
Hand protection
Chemical resistant gloves.

Other
Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Impervious gloves. Wash off after each use. Replace as necessary.

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. Not applicable.

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
Colorless

Physical state
Liquid

Odor
Mild

Odor threshold
Not available.

pH (concentrated product)
6.7

Melting point/freezing point
31 °F (-1 °C)

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

Flash point
Not applicable.

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: 1.02
Relative density temperature: 70 °F (21 °C)
Solubility:
- Solubility (water): 100 %
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: 110 cps
Viscosity temperature: 70 °F (21 °C)
Other information:
- Percent volatile: 0 (Estimated)
- Pour point: 36 °F (2 °C)
- Specific gravity: 1.02

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: No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.

Conditions to avoid: Avoid contact with strong oxidizers. Protect from freezing.
Incompatible materials: Strong oxidizing agents.
Hazardous decomposition products: Oxides of carbon evolved in fire.

11. Toxicological information
Information on likely routes of exposure:
- Inhalation: May cause irritation to the respiratory system.
- Skin contact: Causes skin irritation.
- Eye contact: Causes serious eye damage.
- Ingestion: Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics:
- Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. May cause redness and pain.

Information on toxicological effects:
Acute toxicity: May cause respiratory irritation.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECTRUS BD1501E (CAS Mixture)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>3571 mg/kg, (Calculated according to GHS additivity formula [Category 5])</td>
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</tbody>
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<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>500 - 2000 mg/kg</td>
</tr>
</tbody>
</table>

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

Skin corrosion/irritation: Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation: Causes serious eye damage.
Respiratory or skin sensitization

Respiratory sensitization
Not available.

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
Based on available data, the classification criteria are not met. May be harmful if swallowed and enters airways.

Chronic effects
Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

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<th>Test Results</th>
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</thead>
<tbody>
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<td>SPECTRUS BD1501E (CAS Mixture)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC25</td>
<td>Ceriodaphnia</td>
<td>39.9 mg/l, Chronic Bioassay, 7 day</td>
</tr>
<tr>
<td>LC50</td>
<td>Ceriodaphnia</td>
<td>200 mg/l, Static Renewal Bioassay, 48 hour</td>
</tr>
<tr>
<td></td>
<td>Fathead Minnow</td>
<td>82.5 mg/l, Static Renewal Bioassay, 96 hour</td>
</tr>
<tr>
<td>NOEL</td>
<td>Ceriodaphnia</td>
<td>100 mg/l, Static Renewal Bioassay, 48 hour</td>
</tr>
<tr>
<td></td>
<td>Fathead Minnow</td>
<td>25 mg/l, Chronic Bioassay, 7 day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31.3 mg/l, Static Renewal Bioassay, 96 hour</td>
</tr>
<tr>
<td>Aquatic Crustacea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Daphnia magna</td>
<td>38.2 mg/l, Static Renewal Bioassay, 48 hour</td>
</tr>
<tr>
<td>NOEL</td>
<td>Daphnia magna</td>
<td>12.5 mg/l, Static Renewal Bioassay, 48 hour</td>
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<tr>
<td>Fish</td>
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<td></td>
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<tr>
<td>LC50</td>
<td>Rainbow Trout</td>
<td>141.4 mg/l, Static Renewal Bioassay, 96 hour</td>
</tr>
<tr>
<td>NOEL</td>
<td>Rainbow Trout</td>
<td>100 mg/l, Static Renewal Bioassay, 96 hour</td>
</tr>
</tbody>
</table>

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

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Other adverse effects
Not available.

Persistence and degradability
No data available

- COD  (mgO2/g) 647 (calculated data)
- BOD 5  (mgO2/g) 0 (calculated data)
- BOD 28 (mgO2/g) 0 (calculated data)
- TOC  (mg C/g) 0 (calculated data)
13. Disposal considerations

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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
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). 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
Not regulated as dangerous goods.
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

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)
Not 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

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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. – 141060
- 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**
  - Not regulated.
- **US - Pennsylvania RTK - Hazardous Substances**
  - Not regulated.
- **US - Rhode Island RTK**
  - Not regulated.
- **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**
  - Not listed.
- **US. Pennsylvania Worker and Community Right-to-Know Law**
  - Not listed.

**US. California Proposition 65**

- WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

  - **US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**
    - No ingredient listed.
  - **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**
  - Oct-27-2014
- **Revision date**
  - Aug-17-2015
- **Version #**
  - 2.0
- **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**

This document has undergone significant changes and should be reviewed in its entirety.

**Prepared by**

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

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