SAFETY DATA SHEET
INHIBITOR VCS2000

1. Identification
Product identifier INHIBITOR VCS2000
Other means of identification Not available.
Recommended use Corrosion inhibitor
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
Carcinogenicity Category 2
Reproductive toxicity Category 1B
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. Suspected of causing cancer. May damage fertility or the unborn child.

Precautionary statement
Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves. Wear eye/face protection.
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 on 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. 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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGANIC SALT*</td>
<td>TSRN 125438 - 5007P*</td>
<td>40 - 60</td>
<td></td>
</tr>
<tr>
<td>DICARBOXYLIC ACID, DISODIUM SALT*</td>
<td>TSRN 125438 - 11860*</td>
<td>20 - 40</td>
<td></td>
</tr>
<tr>
<td>AROMATIC ACID, AMMONIUM SALT*</td>
<td>TSRN 125438 - 11859*</td>
<td>10 - 20</td>
<td></td>
</tr>
<tr>
<td>Boric acid, disodium salt, pentahydrate</td>
<td>12179-04-3</td>
<td>10 - 20</td>
<td></td>
</tr>
<tr>
<td>Sodium 4(or 5)-methyl-1H-benzotriazolide</td>
<td>64665-57-2</td>
<td>2.5 - 10</td>
<td></td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>7631-95-0</td>
<td>2.5 - 10</td>
<td></td>
</tr>
</tbody>
</table>

*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  Rinse skin with water/shower. Get medical attention if irritation develops and persists. Take off contaminated clothing and wash before reuse.

Eye contact  Immediately flush eyes continuously with lukewarm, gently flowing water for 30 minutes while removing contact lenses. Get medical attention immediately.

Ingestion  If ingestion of a large amount does occur, call a poison control center immediately.

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  Treat symptomatically. Keep victim under observation.

5. Fire-fighting measures


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  Use water spray to cool unopened containers.

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 upwind. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up  Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
7. Handling and storage

Precautions for safe handling

This material may be combustible. As with all dry powders it is advisable to ground mechanical equipment in contact with dry material to dissipate the potential buildup of static electricity. Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in dry, cool, well ventilated area. Keep container tightly closed. 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)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate (CAS 7631-95-0)</td>
<td>PEL</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate (CAS 7631-95-0)</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid, disodium salt, pentahydrate (CAS 12179-04-3)</td>
<td>TWA</td>
<td>1 mg/m³</td>
</tr>
</tbody>
</table>

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.

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


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

White

Physical state

Powder

Odor

None

Odor threshold

Not available.

pH in aqueous solution

9 (1% SOL.)

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.
Flash point > 213 °F (> 101 °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 < 0.1 mm Hg
Vapor pressure temp. 70 °F (21 °C)
Vapor density < 1 (Air = 1)
Relative density Not available.
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 Not available.
Viscosity temperature 70 °F (21 °C)

Other information
- Percent volatile 0 (Estimated)

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 contact with strong oxidizers.
Incompatible materials Avoid contact with strong oxidizers. Avoid contact with acids and alkalies.
Hazardous decomposition products Oxides of carbon and nitrogen evolved in fire.

11. Toxicological information
Information on likely routes of exposure
- Ingestion May cause burns in mouth, throat and/or stomach.
- Inhalation Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
- Skin contact Causes skin irritation.
- Eye contact Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics May cause redness and pain. 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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>INHIBITOR VCS2000 (CAS Mixture)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td>Dermal</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 5000 mg/kg, (Calculated according to GHS additivity formula)</td>
</tr>
<tr>
<td>Product</td>
<td>Species</td>
<td>Test Results</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>--------------</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>2851 mg/kg, (Calculated according to GHS additivity formula)</td>
</tr>
</tbody>
</table>

**Components**

<table>
<thead>
<tr>
<th>AROMATIC ACID, AMMONIUM SALT (CAS TSRN 125438 - 11859)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boric acid, disodium salt, pentahydrate (CAS 12179-04-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DICARBOXYLIC ACID, DISODIUM SALT (CAS TSRN 125438 - 11860)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ORGANIC SALT (CAS TSRN 125438 - 5007P)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Inhalation LC50</td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sodium 4(or 5)-methyl-1H-benzotriazolide (CAS 64665-57-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sodium molybdate (CAS 7631-95-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>Inhalation LC50</td>
</tr>
<tr>
<td>Oral LD50</td>
</tr>
</tbody>
</table>

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

**Skin corrosion/irritation**

Causes skin 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
Suspected of causing cancer.

ACGIH Carcinogens
Sodium molybdate (CAS 7631-95-0)  A3 Confirmed animal carcinogen with unknown relevance to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Reproductive toxicity
May damage fertility or the unborn child.

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. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.

Chronic effects
Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity
No data available

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>INHIBITOR VCS2000 (CAS Mixture)</td>
<td>LC50 Fathead Minnow</td>
<td>316 mg/L, Acute Toxicity, 48 hour</td>
</tr>
<tr>
<td></td>
<td>LC50 Crustacea</td>
<td>863 mg/L, Acute Toxicity, 48 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
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Environmental fate
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.

Persistence and degradability
No data available

13. Disposal considerations

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

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
Not available.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not regulated as dangerous goods.
Some containers may be DOT exempt, 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.
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)
AROMATIC ACID, AMMONIUM SALT (CAS TSRN 125438 - 11859)
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 - Yes
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)
<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AROMATIC ACID, AMMONIUM SALT</td>
<td>TSRN 125438 - 11859</td>
<td>10 - 20</td>
</tr>
</tbody>
</table>

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.

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - Massachusetts RTK - Substance List
AROMATIC ACID, AMMONIUM SALT (CAS TSRN 125438 - 11859)
Boric acid, disodium salt, pentahydrate (CAS 12179-04-3)

US - Pennsylvania RTK - Hazardous Substances
AROMATIC ACID, AMMONIUM SALT (CAS TSRN 125438 - 11859)
Boric acid, disodium salt, pentahydrate (CAS 12179-04-3)

US - Rhode Island RTK
AROMATIC ACID, AMMONIUM SALT (CAS TSRN 125438 - 11859)

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 regulated.

US. California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

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                  Dec-01-2014
Revision date               Dec-01-2014
List of abbreviations

- CAS: Chemical Abstract Service Registration Number
- TWA: Time Weighted Average
- STEL: Short Term Exposure Limit
- TLV: Threshold Limit Value
- 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.
- ACGIH: American Conference of Governmental Industrial Hygienists
- NFPA: National Fire Protection Association

References:
No data available

Disclaimer
The information in the sheet was written based on the best knowledge and experience currently available. 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
- Composition / Information on Ingredients: Ingredients
- Physical & Chemical Properties: Multiple Properties
- Toxicological Information: Toxicological Data
- Regulatory Information: Risk Phrases - Labeling
- HazReg Data: Europe - EU
- GHS: Classification

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