1. Identification

Product identifier: Brandt Organics 7% Zn

Other means of identification

Product code: 24010

Recommended use: Agricultural/ Horticultural Use- Micronutrient Fertilizer- Refer to product label.

Recommended restrictions: Refer to product label.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

- Company name: Brandt Consolidated, Inc.
- Address: 2935 South Koke Mill Road, Springfield, IL 62711, United States
- Telephone: Corporate Office 1-217-547-5800
- Website: www.brandt.co
- E-mail: msds@brandt.co
- Contact person: EH&S / Regulatory Department
- Emergency phone number: CHEMTREC (24 hours): USA, Canada, Puerto Rico 1-800-424-9300, Virgin Islands 1-800-424-9300, International Maritime +1 (703) 527-3887

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Acute toxicity, oral Category 5
- Serious eye damage/eye irritation Category 2

Environmental hazards:
- Hazardous to the aquatic environment, acute hazard Category 2
- Hazardous to the aquatic environment, long-term hazard Category 2

OSHA defined hazards: Not classified.

Label elements

Signal word: Warning

Hazard statement: May be harmful if swallowed. Causes serious eye irritation. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention: Wash thoroughly after handling. Avoid release to the environment. Wear eye protection/face protection.

Response: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. Collect spillage.

Storage: Store away from incompatible materials.

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>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Sulfate</td>
<td></td>
<td>7733-02-0</td>
<td>10 - &lt; 20*</td>
</tr>
</tbody>
</table>

*Other components below reportable levels

80 - < 90

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

4. First-aid measures

**Inhalation**

Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**

Wash off with soap and water. Get medical attention if irritation develops and persists.

**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 if irritation develops and persists.

**Ingestion**

Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

**Most important symptoms/effects, acute and delayed**

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

**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. Show this safety data sheet to the doctor in attendance.

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**

This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. 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 release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage

Precautions for safe handling
Do not taste or swallow. Avoid contact with eyes. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

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. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection
Face shield is recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection
Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other
Wear suitable protective clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Keep away from food and drink. 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
Aqueous solution.

Physical state
Liquid.

Form
Liquid.

Color
Dark brown

Odor
Woody.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
1256 °F (680 °C) estimated / 15 - 25 °F (-9.44 - -3.89 °C) estimated

Initial boiling point and boiling range
> 212 °F (> 100 °C) estimated

Flash point
Not available.

Evaporation rate
Not available.

Flammability (solid, gas)
Not applicable.

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
0.00001 hPa estimated

Vapor density
Not available.

Relative density
1.21 - 1.26 g/cm3 (typical)

Solubility(ies)

Solubility (water)
100 %
Partition coefficient (n-octanol/water)  
Auto-ignition temperature  
Decomposition temperature  
Viscosity  
Other information  
  Density  
  Explosive properties  
  Oxidizing properties  
  Percent volatile  
  pH in aqueous solution  
  Pounds per gallon  
  Shelf life  
  Specific gravity  

10. Stability and reactivity  
  Reactivity  
  Chemical stability  
  Possibility of hazardous reactions  
  Conditions to avoid  
  Incompatible materials  
  Hazardous decomposition products  

11. Toxicological information  
  Information on likely routes of exposure  
  Inhalation  
  Skin contact  
  Eye contact  
  Ingestion  
  Symptoms related to the physical, chemical and toxicological characteristics  
  Information on toxicological effects  
  Acute toxicity  

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brandt Organics 7% Zn</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>10147 mg/kg estimated</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>3156 mg/kg estimated</td>
</tr>
<tr>
<td>Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Species</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc Sulfate (CAS 7733-02-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>623 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 irritation.
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 listed.
US. National Toxicology Program (NTP) Report on Carcinogens: Not listed.
Reproductive toxicity: This product is not expected to cause reproductive or developmental effects.
  Specific target organ toxicity - single exposure: Not classified.
  Specific target organ toxicity - repeated exposure: Not classified.
Aspiration hazard: Not an aspiration hazard.

12. Ecological information
Ecotoxicity: Toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brandt Organics 7% Zn</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia 33.7311 mg/l, 48 hours estimated</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fish 57.0451 mg/l, 96 hours estimated</td>
</tr>
<tr>
<td><strong>Components</strong></td>
<td><strong>Species</strong></td>
<td><strong>Test Results</strong></td>
</tr>
<tr>
<td>Zinc Sulfate (CAS 7733-02-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>LC50</td>
<td>Green algae (Chlorella vulgaris) 5 mg/l, 24 hours</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Amphipod (Crangonyx pseudogracilis) 15.1 - 24.5 mg/l, 96 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rotifer (Philodina acuticornis) 0.5 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas) 10.62 - 11.3 mg/l, 5 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fish (Lepidocephalichthyes guntea) 0.168 - 0.25 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

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

Persistence and degradability: No data is available on the degradability of this product.
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.

13. Disposal considerations
Disposal instructions: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations: Dispose in accordance with all applicable regulations.
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

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).

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**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN3082</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>Environmentally hazardous substances, liquid, n.o.s. (Zinc Sulfate RQ = 5074 LBS)</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>Class 9, Subsidiary risk - Label(s) 9, Packing group III, Environmental hazards No</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Special provisions</td>
<td>8, 146, 335, IB3, T4, TP1, TP29</td>
</tr>
<tr>
<td>Packaging exceptions</td>
<td>155</td>
</tr>
<tr>
<td>Packaging non bulk</td>
<td>203</td>
</tr>
<tr>
<td>Packaging bulk</td>
<td>241</td>
</tr>
</tbody>
</table>

DOT Regulated Marine Pollutant. Not DOT regulated in domestic (USA ground) transportation in package sizes less than 5074 lbs (501 gallons); 2302 kg (1896 gallons). The DOT transportation information above is for shipments with package sizes equal to or exceeding this value.

DOT Shipping Notes: 40 CFR 172.504(f)(9) For Class 9, a CLASS 9 placard is not required for domestic (USA ground) transportation, however shipments with packaging exceeding the Reportable Quantity (RQ) or bulk packaging must be marked with the appropriate identification number on a CLASS 9 placard, an orange panel, or a white square-on-point display configuration as required. Since the Class 9 placard is not required (although it may be used) the hazardous material endorsement is also not required on a Commercial Drivers License.

**IATA**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN3082</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>Environmentally hazardous substances, liquid, n.o.s.</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>Class 9, Subsidiary risk - Label(s) 9, Packing group III, Environmental hazards Yes</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>

**IMDG**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN3082</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>Environmentally hazardous substances, liquid, n.o.s., MARINE POLLUTANT</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>Class 9, Subsidiary risk - Label(s) 9, Packing group III, Environmental hazards Yes, Marine pollutant Yes</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>EmS</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
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)**
  Zinc Sulfate (CAS 7733-02-0) Listed.
- **SARA 304 Emergency release notification**
  Not regulated.
  Not regulated.

**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)**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Sulfate</td>
<td>7733-02-0</td>
<td>10 - &lt; 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

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. Massachusetts RTK - Substance List
Zinc Sulfate (CAS 7733-02-0)

US. New Jersey Worker and Community Right-to-Know Act
Zinc Sulfate (CAS 7733-02-0)

US. Pennsylvania Worker and Community Right-to-Know Law
Zinc Sulfate (CAS 7733-02-0)

US. Rhode Island RTK
Zinc Sulfate (CAS 7733-02-0)

US. California Proposition 65
WARNING: This product can expose you to chemicals including arsenic, cadmium, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<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>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</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).

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

Issue date 06-04-2015
Revision date 05-02-2018
Version # 09

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of Manufacturer’s knowledge, information and belief at the date of its publication; however, it is provided only as a guidance for safe handling, use, processing, storage, transportation, disposal and release of the Product. No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made with respect to the Product or the information provided herein, or that the Product or information herein may be used without infringing the intellectual property rights of others. The information provided in this Safety Data Sheet relates only to the specific Product designated and may not be valid if the Product is used in combination with other materials or in any other process, unless specified herein. The user assumes all risk and liability for loss, injury, damage or expense due to any use, handling, storage or disposal of the Product, and Manufacturer recommends that the user conducts its own tests of the Product to determine suitability of the Product for user’s particular use.

Revision information
Physical & Chemical Properties: Multiple Properties
Transport Information: Proper Shipping Name/Packing Group
Transport information: General information