

1. Identification

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|---|--|----------------|
| 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 | Serious eye damage/eye irritation | Category 2 |
| Environmental hazards | Hazardous to the aquatic environment, acute hazard | Category 3 |
| | Hazardous to the aquatic environment, long-term hazard | Category 3 |
| OSHA defined hazards | Not classified. | |
| Label elements | | |



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| Signal word | Warning | |
| Hazard statement | Causes serious eye irritation. Harmful to aquatic life. Harmful 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. If eye irritation persists: Get medical advice/attention. | |
| 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**

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|-----------|
| Zinc Sulfate | | 7733-02-0 | 10 - < 20 |
| 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

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| 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. If eye irritation persists: Get medical advice/attention. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| 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. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| 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

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| 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

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| Precautions for safe handling | Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

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| Occupational exposure limits | This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit. |
| 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 | Wear safety glasses with side shields (or goggles). |
| Skin protection | |
| Hand protection | Wear appropriate chemical resistant gloves. |
| 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 | 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

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| Appearance | Liquid. |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Dark brown |
| Odor | Woody. |
| Odor threshold | Not available. |
| pH | 4.7 - 5.3 (10% solution) |
| Melting point/freezing point | 1256 °F (680 °C) estimated |
| Initial boiling point and boiling range | Not available. |
| 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/cm ³ (typical) |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Explosive properties | Not explosive. |

Oxidizing properties Not oxidizing.
Percent volatile 75.95 % estimated
Pounds per gallon 10.09 - 10.51 lb/gal (typical)

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 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials Strong oxidizing agents.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation No adverse effects due to inhalation are expected.
Skin contact No adverse effects due to skin contact are expected.
Eye contact Causes serious eye irritation.
Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Not known.

| Product | Species | Test Results |
|---|--|--------------|
| Brandt Organics 7% Zn | | |
| Acute | | |
| Dermal | | |
| LD50 | Rat | 5338 mg/kg |
| Oral | | |
| LD50 | Rat | 2401 mg/kg |
| Components | Species | Test Results |
| Zinc Sulfate (CAS 7733-02-0) | | |
| Acute | | |
| Dermal | | |
| LD50 | Rat | > 2000 mg/kg |
| Oral | | |
| LD50 | Rat | 920 mg/kg |
| 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 | Not classifiable as to carcinogenicity to humans. | |
| IARC Monographs. Overall Evaluation of Carcinogenicity | | |
| Not listed. | | |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052) | | |
| Not regulated. | | |

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

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| 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 Harmful to aquatic life with long lasting effects.

| Product | | Species | Test Results |
|------------------------------|------|---|----------------------------------|
| Brandt Organics 7% Zn | | | |
| Aquatic | | | |
| Crustacea | EC50 | Daphnia | 35.4885 mg/l, 48 hours estimated |
| Fish | LC50 | Fish | 60.017 mg/l, 96 hours estimated |
| Components | | Species | Test Results |
| Zinc Sulfate (CAS 7733-02-0) | | | |
| Aquatic | | | |
| Algae | LC50 | Green algae (<i>Chlorella vulgaris</i>) | 5 mg/l, 24 hours |
| Crustacea | EC50 | Amphipod (<i>Crangonyx pseudogracilis</i>) | 15.1 - 24.5 mg/l, 96 hours |
| | | Rotifer (<i>Philodina acuticornis</i>) | 0.5 mg/l, 48 hours |
| Fish | LC50 | Fathead minnow (<i>Pimephales promelas</i>) | 10.62 - 11.3 mg/l, 5 days |
| | | | 0.168 - 0.25 mg/l, 96 hours |
| | | Fish (<i>Lepidocephalichthyes guntea</i>) | 76 - 118.8 mg/l, 24 hours |

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| Persistence and degradability | No data is available on the degradability of any ingredients in the mixture. |
| 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

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| 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. |
| 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). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

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|-----------------------------------|---|
| DOT | |
| UN number | UN3082 |
| UN proper shipping name | Environmentally hazardous substances, liquid, n.o.s. (Zinc Sulfate RQ = 5339 LBS) |
| Transport hazard class(es) | |
| Class | 9 |
| Subsidiary risk | - |
| Label(s) | 9 |
| Packing group | III |

Environmental hazards**Marine pollutant** No**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Special provisions** 8, 146, 335, IB3, T4, TP1, TP29**Packaging exceptions** 155**Packaging non bulk** 203**Packaging bulk** 241

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 5339 lbs (516 gallons); 2422 kg (1853 liters). The DOT transportation information above is for shipments with package sizes equal to or exceeding this value.

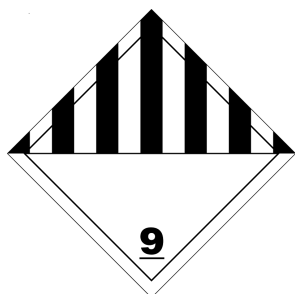
DOT Shipping Notes: 40 CFR 172.504(f)(9) For Class 9, a CLASS 9 placard is not required for domestic (USA ground) transportation, however shipments with packaging exceeding the Reportable Quantity (RQ) or bulk packaging must be marked with the appropriate identification number on a CLASS 9 placard, an 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

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

DOT**General information**

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 5339 lbs (516 gallons); 2422 kg (1853 liters). The DOT transportation information above is for shipments with package sizes equal to or exceeding this value.

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

Classified hazard categories Acute toxicity (any route of exposure)
Serious eye damage or eye irritation

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|---------------|------------|-----------|
| Zinc Sulfate | 7733-02-0 | 10 - < 20 |

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 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**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | No |
| Canada | Domestic Substances List (DSL) | No |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | No |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | No |
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | No |
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*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** 04-03-2019**Version #** 01

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