BRANDT

SAFETY DATA SHEET

1. Identification

Product identifier Brandt Organics Tree & Vine Mix

Other means of identification

Product code 24050

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

Recommended restrictions Refer to product label. **Manufacturer/Importer/Supplier/Distributor information**

Manufacturer

Company nameBrandt Consolidated, Inc.Address2935 South Koke Mill Road

Springfield, IL 62711

United States

Telephone Corporate Office 1-217-547-5800

Website www.brandt.co 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 Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2A
Sensitization, skin Category 1
Specific target organ toxicity, repeated Category 2

exposure

Environmental hazards Hazardous to the aquatic environment, acute Category 1

hazard

Hazardous to the aquatic environment, Category 1

long-term hazard

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Harmful if swallowed. Causes serious eye irritation. May cause damage to organs through

prolonged or repeated exposure. Harmful to aquatic life. Harmful to aquatic life with long lasting

effects.

Precautionary statement

Material name: Brandt Organics Tree & Vine Mix

Prevention Wear eye/face protection. Do not breathe mist or vapor. Wash thoroughly after handling. Do not

eat, drink or smoke when using this product. Avoid release to the environment.

Response If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If in eyes: Rinse

cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention if you feel unwell. 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	%
FERROUS SULFATE		7782-63-0	5 - < 10
Zinc Sulfate		7733-02-0	5 - < 10*
Citric Acid, Anhydrous		77-92-9	1 - < 3*
Disodium Octaborate Tetrahydrate		12008-41-2	1 - < 3*
Manganese Sulfate, monohydrate		10034-96-5	1 - < 3*
Cupric Sulfate, pentahydrate		7758-99-8	< 1*
Other components below reportable	e 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.

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

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if

irritation. Prolonged exposure may cause chronic effects.

present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Ingestion

Get medical advice/attention if you feel unwell. Get medical attention if symptoms occur. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Severe eye

Most important symptoms/effects, acute and

delayed

Indication of immediate medical attention and special treatment needed

General information

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

If you feel unwell, seek medical advice (show the label where possible). 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

media

Unsuitable extinguishing

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

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 General fire hazards

Use standard firefighting procedures and consider the hazards of other involved materials.

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. 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.

Material name: Brandt Organics Tree & Vine Mix 24050 Version #: 06 Revision date: 02-20-2018 Issue date: 06-04-2015

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. 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. Prevent entry into waterways, sewer, basements or confined areas. 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. Contact local authorities in case of spillage to drain/aquatic environment. 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 breathe mist or vapor. Do not taste or swallow. Avoid contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. 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. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

Components	Туре	Value		
Manganese Sulfate, monohydrate (CAS 10034-96-5)	Ceiling	5 mg/m3		
US. ACGIH Threshold Lir	nit Values			
Components	Туре	Value	Form	
Cupric Sulfate, pentahydrate (CAS 7758-99-8)	TWA	1 mg/m3	Dust and mist.	
,		0.2 mg/m3	Fume.	
Disodium Octaborate Tetrahydrate (CAS 12008-41-2)	STEL	6 mg/m3	Inhalable fraction.	
	TWA	2 mg/m3	Inhalable fraction.	
Manganese Sulfate, monohydrate (CAS 10034-96-5)	TWA	0.1 mg/m3	Inhalable fraction.	
,		0.02 mg/m3	Respirable fraction.	
US. NIOSH: Pocket Guide	e to Chemical Hazards			
Components	Туре	Value	Form	
Cupric Sulfate, pentahydrate (CAS 7758-99-8)	TWA	1 mg/m3	Dust and mist.	
Manganese Sulfate, monohydrate (CAS 10034-96-5)	STEL	3 mg/m3	Fume.	
,	TWA	1 mg/m3	Fume.	
logical limit values	No biological exposure limits noted for	No biological exposure limits noted for the ingredient(s).		
propriate engineering trols	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.			
vidual protection measure	es, such as personal protective equipme	nt		
Eye/face protection	Chemical respirator with organic vapor	contrides and full faceniess		

Wear appropriate chemical resistant gloves.

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Skin protection

Hand protection

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Other Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

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 Viscous. Liquid.

Liquid. Physical state Liquid. **Form** Color Dark brown. Odor slight lignin **Odor threshold** Not available.

5.3

Not available. Melting point/freezing point Initial boiling point and boiling Not available.

range

Not available. Flash point **Evaporation rate** Not available. Noncombustible Flammability (solid, gas)

Upper/lower flammability or explosive limits

Flammability limit - lower

(%)

Flammability limit - upper

Not available. Explosive limit - lower (%) Explosive limit - upper (%) Not available.

Vapor pressure 0.00001 hPa estimated

Not available.

Not available.

< 1 Vapor density

Relative density 1.17 g/cm3 (typical)

Solubility(ies)

Solubility (water) Not available. Partition coefficient Not available.

(n-octanol/water)

Not available. **Auto-ignition temperature Decomposition temperature** Not available. **Viscosity** Not available.

Other information

Density 2.66 g/cm3 estimated Percent volatile 78.22 % estimated

5 - 7 pH in aqueous solution

Pounds per gallon 9.8 lb/gal (typical) Specific gravity 2.66 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. Hazardous polymerization does not occur. Possibility of hazardous

reactions

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

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No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful. May cause damage to organs through prolonged or

repeated exposure by inhalation.

Skin contact No adverse effects due to skin contact are expected.

Eye contact Causes serious eye irritation.

Ingestion Harmful if swallowed.

Symptoms related to the

physical, chemical and

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

irritation.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

riouto toxioity			
Product	Species Test Results		
Brandt Organics Tree & Vir	ne Mix		
<u>Acute</u>			
Dermal			
LD50	Rabbit	84034 mg/kg estimated	
Oral			
LD100	Mouse	4692 mg/kg estimated	
LD50	Mouse	3452 mg/kg estimated	
	Rat	16994 mg/kg estimated	
Components	Species	Test Results	
Citric Acid, Anhydrous (CAS	S 77-92-9)		
<u>Acute</u>			
Oral			
LD50	Mouse	5040 mg/kg	
	- .	0700 #	

Rat 6730 mg/kg

Cupric Sulfate, pentahydrate (CAS 7758-99-8)

Acute Oral

LD100 Mouse 50 mg/kg LD50 Rat 960 mg/kg

Disodium Octaborate Tetrahydrate (CAS 12008-41-2)

Acute Dermal

LD50 Rabbit > 2000 mg/kg

Oral

LD50 Guinea pig 5300 mg/kg Rat 2550 mg/kg

2 g/kg

Manganese Sulfate, monohydrate (CAS 10034-96-5)

Acute Oral

LD100 Mouse 305 mg/kg

Zinc Sulfate (CAS 7733-02-0)

Acute Dermal

LD50 Rat > 2000 mg/kg

Material name: Brandt Organics Tree & Vine Mix

Components Species Test Results

Oral

LD50 Rat 623 mg/kg

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye

irritation

Causes serious eve irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicityNo 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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicityThis product is not expected to cause reproductive or developmental effects.

Specific target organ

toxicity - single exposure

Not classified.

Specific target organ

toxicity - repeated

exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful. May cause damage to organs through prolonged or

repeated exposure.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Product		Species	Test Results
Brandt Organics Tree	& Vine Mix		
Aquatic			
Crustacea	EC50	Daphnia	538.8207 mg/l, 48 hours estimated
Fish	LC50	Fish	79.6685 mg/l, 96 hours estimated
Components		Species	Test Results
Cupric Sulfate, pentah	ydrate (CAS 7758-	99-8)	
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.0058 - 0.0073 mg/l, 48 hours

Fish LC50 Water flea (Daphnia magna) 0.0058 - 0.0073 mg/l, 48 nc

Disodium Octaborate Tetrahydrate (CAS 12008-41-2)

Aquatic

Acute

Crustacea LC50 Daphnia magna 619 mg/l
Fish LC50 Pimephales promelas 370 mg/l

Manganese Sulfate, monohydrate (CAS 10034-96-5)

Aquatic

Crustacea EC50 Water flea (Daphnia obtusa) 30.8 - 44.1 mg/l, 48 hours
Fish LC50 Fathead minnow (Pimephales promelas) 36.9 mg/l, 96 hours

29.7 - 52.7 mg/l, 192 hours

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

Components **Species Test Results** Zinc Sulfate (CAS 7733-02-0) **Aquatic** LC50 Green algae (Chlorella vulgaris) Algae 5 mg/l, 24 hours Crustacea EC50 Amphipod (Crangonyx pseudogracilis) 15.1 - 24.5 mg/l, 96 hours Rotifer (Philodina acuticornis) 0.5 mg/l, 48 hours Fish LC50 Fathead minnow (Pimephales promelas) 10.62 - 11.3 mg/l, 5 days 0.168 - 0.25 mg/l, 96 hours

Fish (Lepidocephalichthyes guntea)

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

Bioaccumulative potential Not 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 instructionsCollect 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

76 - 118.8 mg/l, 24 hours

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 codeThe 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 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

UN number UN3082

UN proper shipping name Environmentally hazardous substances, liquid, n.o.s. (Cupric Sulfate, pentahydrate RQ = 1250

LBS), MARINE POLLUTANT

Transport hazard class(es)

Class 9
Subsidiary risk Label(s) 9
Packing group III

Environmental hazards

Marine pollutant Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions 8, 146, 335, IB3, T4, TP1, TP29

Packaging exceptions155Packaging non bulk203Packaging bulk241

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 1250 lbs (126 gallons); 567 kg (477 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.

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

IMDG

Not regulated as dangerous goods.

DOT



Marine pollutant



General information

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 1250 lbs (126 gallons); 567 kg (477 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)

FERROUS SULFATE (CAS 7782-63-0)

Manganese Sulfate, monohydrate (CAS 10034-96-5)

Zinc Sulfate (CAS 7733-02-0)

Listed.

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

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 No

chemical

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc Sulfate	7733-02-0	5 - < 10
Manganese Sulfate, monohydrate	10034-96-5	1 - < 3

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Manganese Sulfate, monohydrate (CAS 10034-96-5)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

(SDWA)

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

Cupric Sulfate, pentahydrate (CAS 7758-99-8) FERROUS SULFATE (CAS 7782-63-0)

Zinc Sulfate (CAS 7733-02-0)

US. New Jersey Worker and Community Right-to-Know Act

Cupric Sulfate, pentahydrate (CAS 7758-99-8) Disodium Octaborate Tetrahydrate (CAS 12008-41-2) Manganese Sulfate, monohydrate (CAS 10034-96-5) Zinc Sulfate (CAS 7733-02-0)

US. Pennsylvania Worker and Community Right-to-Know Law

Cupric Sulfate, pentahydrate (CAS 7758-99-8) FERROUS SULFATE (CAS 7782-63-0) Zinc Sulfate (CAS 7733-02-0)

US. Rhode Island RTK

FERROUS SULFATE (CAS 7782-63-0)

Manganese Sulfate, monohydrate (CAS 10034-96-5)

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

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
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	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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

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

 Issue date
 06-04-2015

 Revision date
 02-20-2018

Version # 06

Material name: Brandt Organics Tree & Vine Mix

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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 owns tests of the Product to determine suitability of the Product for user's particular use.

Revision information

Regulatory information: California Prop 65

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