BRANDT

SAFETY DATA SHEET

1. Identification

Product identifier Brandt Southeast Crop Mix

Other means of identification

Product code 29004

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

EC Fertilizer Class E.2.1 (CD 2003/2003, CD 2004/73/EC, CR 1907/2006, CR 987/2008).

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 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 1
Reproductive toxicity Category 2
Hazardous to the aquatic environment, acute Category 2

Environmental hazards Hazardous to the aquatic environment, acute

hazard

Hazardous to the aquatic environment, Category 3

long-term hazard

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage. Suspected of damaging fertility or the unborn

child. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read

and understood. Wash thoroughly after handling. Avoid release to the environment. Wear

protective gloves/protective clothing/eye protection/face protection.

Response If on skin: Wash with plenty of water. 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 locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Material name: Brandt Southeast Crop Mix

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	%
Phosphorous Acid		13598-36-2	10 - < 20*
Urea		57-13-6	10 - < 20*
Manganese Sulfate, monohydrate		10034-96-5	5 - < 10*
Disodium Octaborate Tetrahydrate		12008-41-2	1 - < 3*
Zinc Sulfate		7733-02-0	1 - < 3
Other components below reportable le	evels		60 - < 70

^{*}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.

Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get Skin contact

medical advice/attention. Wash contaminated clothing before reuse.

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

present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important

symptoms/effects, acute and

delayed

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause redness

and pain. Severe eye irritation. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special

treatment needed **General information** Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

IF exposed or concerned: Get medical advice/attention. 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

Unsuitable extinguishing

media

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 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.

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Methods and materials for containment and cleaning up

Should not be released into the environment.

Large Spills: 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. 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.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

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. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get this material in contact with eyes. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Pregnant or breastfeeding women must not handle this product. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. 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 Lin	nit Values		
Components	Туре	Value	Form
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
Manganese Sulfate, monohydrate (CAS 10034-96-5)	STEL	3 mg/m3	Fume.
•	TWA	1 mg/m3	Fume.
US. AIHA Workplace Env	ironmental Exposure Level (WEEL) Guides		
Components	Туре	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m3	Total particulate.
ogical limit values	No hiological exposure limits noted for the ing	redient(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.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Material name: Brandt Southeast Crop Mix

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Other

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

Wear appropriate thermal protective clothing, when necessary. Thermal hazards

General hygiene considerations

When using, do not eat, drink or smoke. 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. Liquid. **Form** Color Light pink. Odor Not available. **Odor threshold** Not available.

Ηα 1.5 - 2.5 (1% Solution)

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

range

Flash point Not available. Not available. **Evaporation rate** Flammability (solid, gas) Not available. Upper/lower flammability or explosive limits

Flammability limit - lower

(%)

Not available.

Not available.

Flammability limit - upper (%)

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

0.00001 hPa estimated Vapor pressure

Not available. Vapor density

1.33 g/cm3 (typical) Relative density

Solubility(ies)

Solubility (water) 100 %

Partition coefficient Not available.

(n-octanol/water)

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

Other information

Percent volatile 56.44 % estimated Pounds per gallon 11.1 (typical) Shelf life > 4 years

6.55 % estimated VOC

10. Stability and reactivity

Reactivity Reacts violently with strong alkaline substances. This product may react with reducing agents.

Chemical stability Material is stable under normal conditions. Possibility of hazardous Hazardous polymerization does not occur.

reactions

Conditions to avoid Do not mix with other chemicals. Contact with incompatible materials. Incompatible materials

Bases. Reducing agents.

Hazardous decomposition

products

No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful.

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

physical, chemical and toxicological characteristics

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

Test Results

redness and pain.

Species

Information on toxicological effects

Acute toxicity

Product

Brandt Southeast Crop Mix	-	
<u>Acute</u>		
Inhalation		
LD50	Rat	190 mg/l estimated
Oral		
LD100	Mouse	4834 mg/kg estimated
LD50	Mouse	17255 mg/kg estimated
	Rat	41224 mg/kg estimated
Components	Species	Test Results
Disodium Octaborate Tetral	hydrate (CAS 12008-41-2)	
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Guinea pig	5300 mg/kg
	Rat	2550 mg/kg
		2 g/kg
Manganese Sulfate, monoh	ydrate (CAS 10034-96-5)	
<u>Acute</u>		
Oral		
LD100	Mouse	305 mg/kg
Urea (CAS 57-13-6)		
<u>Acute</u>		
Oral	_	
LD50	Rat	8471 mg/kg
	Sheep	28500 mg/kg
Zinc Sulfate (CAS 7733-02-	-0)	
<u>Acute</u>		
Dermal	5 .	
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	623 mg/kg

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

Skin corrosion/irritation Causes skin irritation.

Material name: Brandt Southeast Crop Mix

SDS US

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.

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Carcinogenicity

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 toxicity Suspected of damaging fertility or the unborn child.

Specific target organ

toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated

exposure

Not classified.

Aspiration hazard

Not available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Toxic to aquatic life. Harmful to aquatic life with long lasting effects. Because of the low pH of this **Ecotoxicity**

product, it would be expected to produce significant ecotoxicity upon exposure to aquatic

organisms and aquatic systems.

	organioni	o ana aquado oyotomo.	
Product		Species	Test Results
Brandt Southeast Crop	Mix		
Aquatic			
Crustacea	EC50	Daphnia	1713.5691 mg/l, 48 hours estimated
Fish	LC50	Fish	12293.1211 mg/l, 96 hours estimated
Components		Species	Test Results
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, m	onohydrate (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

Urea (CAS 57-13-6)

Aquatic

Crustacea EC50 Water flea (Daphnia magna) 3910 mg/l, 48 hours Fish LC50 Carp (Leuciscus idus melanotus) > 10000 mg/l, 48 hours

> 16200 - 18300 mg/l, 96 hours Guppy (Poecilia reticulata)

Harlequinfish, red rasbora (Rasbora

heteromorpha)

12000 mg/l, 96 hours

Mozambique tilapia (Tilapia

590 - 730 mg/l, 96 hours

mossambica)

Material name: Brandt Southeast Crop Mix 29004 Version #: 02 Revision date: 10-17-2017 Issue date: 10-16-2017 Components Species Test Results

Zinc Sulfate (CAS 7733-02-0)	
Aquatic	

Algae LC50 Green algae (Chlorella vulgaris) 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) 76 - 118.8 mg/l, 24 hours

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

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Urea -2.11

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

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 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. (Zinc Sulfate RQ = 71942 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

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

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 71942 lbs (6481 gallons); 32632 kg (24533 liters).

NOTE: DOT Corrosive to aluminum and/or steel (not skin). Not regulated if transported by motor vehicle or rail car in a packaging that will not react dangerously or be degraded by this material [See 49 CFR Sect 173.154(d)].

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

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Phosphorous Acid)

Transport hazard class(es)

Class 8
Subsidiary risk Label(s) 8
Packing group III
Environmental hazards Yes

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

IMDG

UN number UN3264

UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphorous Acid), MARINE POLLUTANT

Transport hazard class(es)

Class 8
Subsidiary risk Packing group III
Environmental hazards

Marine pollutant Yes
EmS F-A, S-B

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

DOT





Marine pollutant



General information

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 71942 lbs (6481 gallons); 32632 kg (24533 liters).

NOTE: DOT Corrosive to aluminum and/or steel (not skin). Not regulated if transported by motor vehicle or rail car in a packaging that will not react dangerously or be degraded by this material [See 49 CFR Sect 173.154(d)].

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.

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)

Manganese Sulfate, monohydrate (CAS 10034-96-5) Listed. Zinc Sulfate (CAS 7733-02-0) 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.	
Manganese Sulfate, monohydrate	10034-96-5	5 - < 10	_
Zinc Sulfate	7733-02-0	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

Zinc Sulfate (CAS 7733-02-0)

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

Disodium Octaborate Tetrahydrate (CAS 12008-41-2) Manganese Sulfate, monohydrate (CAS 10034-96-5)

Phosphorous Acid (CAS 13598-36-2)

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

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

Zinc Sulfate (CAS 7733-02-0)

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.

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)	Yes
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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
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	Yes

^{*}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

10-16-2017 Issue date 10-17-2017 **Revision date**

Version # 02

The information provided in this Safety Data Sheet is correct to the best of Manufacturer's Disclaimer

> knowledge, information and belief at the date of its publication; however, it is provided only as a quidance 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.

Product and Company Identification: Product and Company Identification Hazard(s) identification: Supplemental information

Composition / Information on Ingredients: Disclosure Overrides

Transport information: General information

Material name: Brandt Southeast Crop Mix

Revision information