

1. Identification

Product identifier Brandt 20-20-20 Micro
Other means of identification
Product code 31008
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 4
Serious eye damage/eye irritation Category 2A
Environmental hazards Not classified.
OSHA defined hazards Not classified.

Label elements

Signal word Warning
Hazard statement Harmful if swallowed. Causes serious eye irritation.
Precautionary statement
Prevention Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye/face protection.
Response If swallowed: Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse mouth. 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	%
Potassium Nitrate		7757-79-1	40 - < 50*
Urea		57-13-6	20 - < 30*
Mono potassium phosphate (MKP)		7778-77-0	3 - < 5*
EDTA, Disodium Copper(II) Salt		14025-15-1	< 1*
Manganese EDTA, disodium salt		15375-84-5	< 1*
Disodium Octaborate Tetrahydrate		12008-41-2	< 0.1*
Sodium Molybdate, Dihydrate		10102-40-6	< 0.1*
Other components below reportable levels			30 - < 40

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

4. First-aid measures

Inhalation	If dust from the material is inhaled, remove the affected person immediately 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. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Severe eye irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. 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 (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	Use water spray to cool unopened containers.
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. Keep out of low areas. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust from the spilled material. 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	Stop the flow of material, if this is without risk. Dike far ahead of spill for later disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Following product recovery, flush area with water. Sweep up or vacuum up spillage and collect in suitable container for disposal. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not taste or swallow. Avoid breathing dust. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Practice good housekeeping.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Manganese EDTA, disodium salt (CAS 15375-84-5)	Ceiling	5 mg/m ³
Sodium Molybdate, Dihydrate (CAS 10102-40-6)	PEL	5 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Disodium Octaborate Tetrahydrate (CAS 12008-41-2)	STEL	6 mg/m ³	Inhalable fraction.
Sodium Molybdate, Dihydrate (CAS 10102-40-6)	TWA	2 mg/m ³	Inhalable fraction.
	TWA	0.5 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
EDTA, Disodium Copper(II) Salt (CAS 14025-15-1)	TWA	1 mg/m ³	Dust and mist.
Manganese EDTA, disodium salt (CAS 15375-84-5)	STEL	3 mg/m ³	Fume.
	TWA	1 mg/m ³	Fume.

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m ³	Total particulate.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. 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). Use tight fitting goggles if dust is generated.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear suitable protective clothing.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Respiratory protection not required.

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	Powder.
Physical state	Solid.
Form	Powder.
Color	Light blue
Odor	None.
Odor threshold	Not available.
pH	Not available.
Salt-Out / Crystallization Temp	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
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	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

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	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed.
Inhalation	Prolonged inhalation may be harmful. Inhalation of dusts may cause respiratory irritation.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation. Dust in the eyes will cause irritation.

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. Not known.

Product	Species	Test Results
Brandt 20-20-20 Micro (CAS Mixture)		
Acute		
<i>Inhalation</i>		
LD50	Rat	2000.001 mg/l estimated
<i>Oral</i>		
LD50	Mouse	44738.0195 mg/kg estimated
	Rabbit	2879.7803 mg/kg estimated
	Rat	27290.1582 mg/kg estimated

Components	Species	Test Results
Disodium Octaborate Tetrahydrate (CAS 12008-41-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Guinea pig	5300 mg/kg
	Rat	> 2000 mg/kg
		2 g/kg

Mono potassium phosphate (MKP) (CAS 7778-77-0)

Acute

Oral

LD50 Mouse 1700 mg/kg

Potassium Nitrate (CAS 7757-79-1)

Acute

Oral

LD50 Rabbit 1166 mg/kg

Urea (CAS 57-13-6)

Acute

Oral

LD50 Rat 8471 mg/kg
Sheep 28500 mg/kg

* 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. Dust in the eyes will cause irritation.

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

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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 available.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity 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.

Product	Species	Test Results	
Brandt 20-20-20 Micro (CAS Mixture)			
Aquatic			
Crustacea	EC50	Daphnia	21209.8242 mg/l, 48 hours estimated
Fish	LC50	Fish	2169.9602 mg/l, 96 hours estimated
Components	Species	Test Results	
EDTA, Disodium Copper(II) Salt (CAS 14025-15-1)			
Aquatic			
Fish	LC50	Channel catfish (<i>Ictalurus punctatus</i>)	838 mg/l, 96 hours
Potassium Nitrate (CAS 7757-79-1)			
Aquatic			
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	1200 mg/l, 96 hours
<i>Acute</i>			
Fish	LC50	Fish	1378 - 3000 mg/l
Sodium Molybdate, Dihydrate (CAS 10102-40-6)			
Aquatic			
Crustacea	EC50	Tubificid worm (<i>Tubifex tubifex</i>)	42.48 - 65.64 mg/l, 48 hours
Fish	LC50	Striped bass (<i>Morone saxatilis</i>)	> 79.8 mg/l, 96 hours
Urea (CAS 57-13-6)			
Aquatic			
Crustacea	EC50	Water flea (<i>Daphnia magna</i>)	3910 mg/l, 48 hours
Fish	LC50	Carp (<i>Leuciscus idus melanotus</i>)	> 10000 mg/l, 48 hours
		Guppy (<i>Poecilia reticulata</i>)	16200 - 18300 mg/l, 96 hours
		Harlequinfish, red rasbora (<i>Rasbora heteromorpha</i>)	12000 mg/l, 96 hours
		Mozambique tilapia (<i>Tilapia mossambica</i>)	590 - 730 mg/l, 96 hours

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

Not regulated as dangerous goods.

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.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

EDTA, Disodium Copper(II) Salt (CAS 14025-15-1) Listed.

Manganese EDTA, disodium salt (CAS 15375-84-5) 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 - 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)

Chemical name	CAS number	% by wt.
Potassium Nitrate	7757-79-1	40 - < 50
Monoammonium Phosphate (MAP)	7722-76-1	20 - < 30

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Manganese EDTA, disodium salt (CAS 15375-84-5)

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. Massachusetts RTK - Substance List**

Potassium Nitrate (CAS 7757-79-1)

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

Disodium Octaborate Tetrahydrate (CAS 12008-41-2)

EDTA, Disodium Copper(II) Salt (CAS 14025-15-1)

Manganese EDTA, disodium salt (CAS 15375-84-5)

Potassium Nitrate (CAS 7757-79-1)

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

Potassium Nitrate (CAS 7757-79-1)

US. Rhode Island RTK

EDTA, Disodium Copper(II) Salt (CAS 14025-15-1)

Manganese EDTA, disodium salt (CAS 15375-84-5)

Potassium Nitrate (CAS 7757-79-1)

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)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
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

Issue date 06-05-2015

Revision date 03-03-2016

Version # 05

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 Product and Company Identification: Product and Company Identification
Hazard(s) identification: Supplemental information
Composition / Information on Ingredients: Component Summary
Transport Information: Agency Name, Packaging Type, and Transport Mode Selection
Other information, including date of preparation or last revision: Disclaimer