SAFETY DATA SHEET



1. Identification

Product identifier	Brandt Copper-All 5%			
Other means of identification				
Product code	26003			
Recommended use	Agricultural/ Horticultural Use- Micronutrient Fertilizer- Refer to product label.			
Recommended restrictions	Refer to product label.			
Manufacturer/Importer/Supplier/				
Manufacturer				
Company name	Brandt Consolidated, Inc.			
Address	2935 South Koke Mill Road			
	Springfield, IL 62711			
	United States	4 047 547 50	200	
Telephone	Corporate Office www.brandt.co	1-217-547-58	300	
Website E-mail	msds@brandt.co			
Contact person	EH&S / Regulatory Department			
Emergency phone number	CHEMTREC (24 hours):			
	USA, Canada, Puerto Rico	1-800-424-93		
	Virgin Islands International Maritime	1-800-424-93		
	International Mantime	+1 (703) 527-	3887	
2. Hazard(s) identification				
Physical hazards	Not classified.			
Health hazards	Acute toxicity, oral		Category 4	
	Acute toxicity, dermal		Category 5	
	Skin corrosion/irritation		Category 2	
	Serious eye damage/eye irritation	on	Category 2A	
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			ct with skin. Causes skin irritation. Causes serious atic life with long lasting effects.	
Precautionary statement				
Prevention	Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear eye protection/face protection. Wear protective gloves.			
Response	If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. 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. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.			
Storage	Store away from incompatible materials.			
D'I I I I	Disease of contents/containers in			

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

Disposal

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Cupric Sulfate, pentahydrate		7758-99-8	13
copper citrate		866-82-0	7
Other components below repo	ortable levels		80

Other components below reportable levels

*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. Get medical advice/attention Skin contact if you feel unwell. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Eye contact Immediately flush eves 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 Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred symptoms/effects, acute and vision. Skin irritation. May cause redness and pain. delayed Indication of immediate Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed. medical attention and special treatment needed Ensure that medical personnel are aware of the material(s) involved, and take precautions to **General information** 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, 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 protective equipment and or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. emergency procedures 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 product is miscible in water. 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, skin, and clothing. Avoid prolonged exposure. 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. Wash contaminated clothing before reuse. 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

ccupational exposure mints	
US. ACGIH Threshold Limit Values	

Components	Туре	Value	Form
copper citrate (CAS 866-82-0)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Cupric Sulfate, pentahydrate (CAS 7758-99-8)	TWA	1 mg/m3	Dust and mist.
,		0.2 mg/m3	Fume.
US. NIOSH: Pocket Guide to	o Chemical Hazards		
Components	Туре	Value	Form
copper citrate (CAS 866-82-0)	TWA	1 mg/m3	Dust and mist.
Cupric Sulfate, pentahydrate (CAS 7758-99-8)	TWA	1 mg/m3	Dust and mist.
ological limit values	No biological exposure limits noted f	or the ingredient(s).	
opropriate engineering ontrols	Good general ventilation (typically 10 should be matched to conditions. If a or other engineering controls to main exposure limits have not been estab wash facilities and emergency show	applicable, use process enclosu ntain airborne levels below recor lished, maintain airborne levels	res, local exhaust ventilation, nmended exposure limits. If to an acceptable level. Eye
dividual protection measures	, such as personal protective equipn	nent	
Eye/face protection	Face shield is recommended. Wear	safety glasses with side shields	(or goggles).
Skin protection			
Hand protection	Wear appropriate chemical resistant supplier.	gloves. Suitable gloves can be	recommended by the glove
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.		
Respiratory protection	In case of insufficient ventilation, we	ar suitable respiratory equipmer	ıt.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.		
eneral hygiene onsiderations	Keep away from food and drink. Alw washing after handling the material a work clothing and protective equipm	and before eating, drinking, and	

9. Physical and chemical properties

	Appearance	Clear. Liquid.		
	Physical state	Liquid.		
	Form	Liquid.		
	Color	Blue		
	Odor	None known.		
	Odor threshold	Not available.		
	рН	2.5 +/- 0.16		
	Melting point/freezing point	Not available.		
	Initial boiling point and boiling range	219.2 °F (104 °C)		
	Flash point	Not available.		
	Evaporation rate	Not available.		
	Flammability (solid, gas)	Not applicable.		
	Upper/lower flammability or exp	losive 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		1.18 g/cm3 +/- 0.06 (typical)		
	Solubility(ies)			
	Solubility (water)	Soluble		
	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	73 % estimated		
	Pounds per gallon	9.88 lb/gal +/- 0.06 (typical)		
	Specific gravity	2.29 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.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	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	Prolonged inhalation may be harmful.	
Skin contact	May be harmful in contact with skin. Causes skin irritation.	

Eye contact	Causes serious eye irritation.		
Ingestion	Harmful if swallowed.		
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.		
nformation on toxicological ef	fects		
Acute toxicity	Harmful if swallowed. May be harmful	in contact with skin.	
Product	Species	Test Results	
Brandt Copper-All 5%			
<u>Acute</u>			
Oral			
LD100	Mouse	385 mg/kg estimated	
LD50	Rat	7385 mg/kg estimated	
Components	Species	Test Results	
Cupric Sulfate, pentahydrate (CA	S (158-99-8)		
<u>Acute</u>			
Oral LD100	Mouse	50 mg/kg	
		50 mg/kg	
LD50	Rat	960 mg/kg	
* Estimates for product may I	be based on additional component data n	ot shown.	
Skin corrosion/irritation	Causes skin irritation.		
Serious eye damage/eye rritation	Causes serious eye irritation.		
Respiratory or skin sensitizatio	n		
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.	
Not listed.	Evaluation of Carcinogenicity ed Substances (29 CFR 1910.1001-1056))	
Not regulated. US. National Toxicology Pr	ogram (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.		
Chronic effects	Prolonged inhalation may be harmful.		
2. Ecological informatio	n		
cotoxicity	Toxic to aquatic life with long lasting ef	fects.	
Product	Species	Test Results	
Brandt Copper-All 5%			
Aquatic			
Crustacea	EC50 Daphnia	60.8015 mg/l, 48 hours estimated	

LC50

Fish

Fish

5.0769 mg/l, 96 hours estimated

Components		Species	Test Results		
Cupric Sulfate, pentahydrate (CAS 7758-99-8)					
Aquatic					
Crustacea	EC50	Water flea (Daphnia magna)	0.0058 - 0.0073 mg/l, 48 hours		
Fish	LC50	Bluegill (Lepomis macrochirus)	0.66 - 1.15 mg/l, 96 hours		
* Estimates for product may	be based on add	ditional component data not shown.			
Persistence and degradability	No data is av	ailable on the degradability of this product.			
Bioaccumulative potential	No data avai	lable.			
Aobility in soil	No data avai	lable.			
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 consideratio	ons				
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.				
ocal disposal regulations	Dispose in accordance with all applicable regulations.				
lazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.				
Vaste 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		d containers may retain product residue, fo pty containers should be taken to an approv	0		

14. Transport information

disposal.

DOT

OT	
UN number	UN3082
UN proper shipping name	Environmentally hazardous substances, liquid, n.o.s. (Cupric Sulfate, pentahydrate RQ = 78), MARINE POLLUTANT
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	
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 exceptions	155
Packaging non bulk	203
Packaging bulk	241

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 78 lbs (7.9 gallons); 35 kg (30 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.

ΙΑΤΑ

UN number UN proper shipping name Transport hazard class(es)	UN3082 Environmentally hazardous substances, liquid, n.o.s. (Cupric Sulfate, pentahydrate)
Class	9
Subsidiary risk	-
Label(s)	9

 Packing group
 III

 Environmental hazards
 Yes

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

IM	DG
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UN number	UN3082
UN proper shipping name	Environmentally hazardous substances, liquid, n.o.s. (Cupric Sulfate, pentahydrate), MARINE POLLUTANT
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	
Environmental hazards	
Marine pollutant	Yes
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT; IATA; IMDG



Marine pollutant



General information

Not DOT regulated in domestic (USA ground) transportation in package sizes less than 78 lbs (7.9 gallons); 35 kg (30 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 Subst	ance List (40 CFR 302.4)
copper citrate (CAS 866 SARA 304 Emergency relea	,
Not regulated. OSHA Specifically Regulat	ed Substances (29 CFR 1910.1001-1050)
Not regulated.	

Superfund Amendments and R	Reauthorization Act of 19	986 (SARA)		
Hazard categories	Immediate Hazard - Y Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No	es		
SARA 302 Extremely haza Not listed.	rdous substance			
SARA 311/312 Hazardous chemical	No			
SARA 313 (TRI reporting) Chemical name		CAS number	% by wt.	
Cupric Sulfate, pentahy copper citrate	drate	7758-99-8 866-82-0	13 7	-
Other federal regulations				
Clean Air Act (CAA) Section	on 112 Hazardous Air Po	llutants (HAPs) List		
Not regulated. Clean Air Act (CAA) Section	on 112(r) Accidental Rele	ease Prevention (40 CF	[:] R 68.130)	
Not regulated.		·		
Safe Drinking Water Act (SDWA)	Not regulated.			
US state regulations				
US. California Controlled S	Substances. CA Departn	nent of Justice (Califor	nia Health and Safety Co	ode Section 11100)
Not listed. US. Massachusetts RTK - S	Substance List			
Cupric Sulfate, pentahy US. New Jersey Worker an		Know Act		
copper citrate (CAS 866 Cupric Sulfate, pentahy US. Pennsylvania Worker a	drate (CAS 7758-99-8)	o-Know Law		
Cupric Sulfate, pentahy US. Rhode Island RTK	drate (CAS 7758-99-8)			
copper citrate (CAS 866	6-82-0)			
US. California Proposition WARNING: This produc reproductive harm.		wn to the State of Califo	ornia to cause cancer and	birth defects or other
International Inventories				
Country(s) or region	Inventory name			On inventory (yes/no)*
Australia	Australian Inventory o	f Chemical Substances	(AICS)	No
Canada	Domestic Substances	List (DSL)		No
Canada	Non-Domestic Substa	nces List (NDSL)		No
China	Inventory of Existing C	Chemical Substances in	China (IECSC)	No
Europe	European Inventory of Substances (EINECS)	FExisting Commercial C	hemical	No
Europe	European List of Notif	ied Chemical Substance	s (ELINCS)	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
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

02-10-2016

Revision date Version #	11-28-2016 02
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	This document has undergone significant changes and should be reviewed in its entirety.