



# SAFETY DATA SHEET

## 1. Identification

**Product identifier** Brandt Reaction S DS  
**Other means of identification**  
**Product code** 27035  
**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** Not classified.  
**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

**Hazard symbol** None.  
**Signal word** None.  
**Hazard statement** Harmful to aquatic life. Harmful to aquatic life with long lasting effects.  
**Precautionary statement**  
**Prevention** Avoid release to the environment.  
**Response** Wash hands after handling.  
**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** 4.13% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 4.13% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Urea		57-13-6	1 - < 3*

Chemical name	Common name and synonyms	CAS number	%
Calcium Silicate		1344-95-2	< 0.2*
Other components below reportable levels			90 - 100

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

#### 4. First-aid measures

<b>Inhalation</b>	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Direct contact with eyes may cause temporary irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/instructions</b>	Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	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.
<b>Methods and materials for containment and cleaning up</b>	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.
<b>Environmental precautions</b>	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

<b>Precautions for safe handling</b>	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Practice good housekeeping.
<b>Conditions for safe storage, including any incompatibilities</b>	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	Form
Calcium Silicate (CAS 1344-95-2)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Calcium Silicate (CAS 1344-95-2)	TWA	10 mg/m <sup>3</sup>

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium Silicate (CAS 1344-95-2)	TWA	5 mg/m <sup>3</sup>	Respirable.
		10 mg/m <sup>3</sup>	Total

#### US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m <sup>3</sup>	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.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** 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. Dust mask.

#### 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

<b>Appearance</b>	Powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	Light yellow.
<b>Odor</b>	Relatively Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Salt-Out / Crystallization Temp</b>	Not available.
<b>Melting point/freezing point</b>	455 °F (235 °C) estimated
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Noncombustible

**Upper/lower flammability or explosive limits**

<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.

**Vapor pressure** 0.00001 hPa estimated

**Vapor density** Not available.

**Relative density** 1.09 g/cm<sup>3</sup> (typical)

**Solubility(ies)**

**Solubility (water)** > 95 %

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Other information**

**pH in aqueous solution** 4 - 6 (10% solution)

**Pounds per gallon** 9.1 lbs/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** 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** Expected to be a low ingestion hazard.

**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** Dust in the eyes will cause irritation.

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

**Information on toxicological effects****Acute toxicity**

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
Brandt Reaction S DS (CAS Mixture)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rat	2085.5056 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	1042.7528 mg/m <sup>3</sup> estimated
<i>Oral</i>		
LD50	Rat	4649.4248 mg/kg estimated

Product	Species	Test Results
<i>Other</i>		
LD50	Mouse	4200 mg/kg estimated
	Rabbit	33000 mg/kg estimated
	Rat	88300 mg/kg estimated

Components	Species	Test Results
Urea (CAS 57-13-6)		
<b>Acute</b>		
<i>Oral</i>		
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** 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** Harmful to aquatic life with long lasting effects.

Product	Species	Test Results	
Brandt Reaction S DS (CAS Mixture)			
<b>Aquatic</b>			
Crustacea	EC50	Daphnia	54.2113 mg/l, 48 hours estimated
Fish	LC50	Fish	1146.6888 mg/l, 96 hours estimated
Components	Species	Test Results	

Urea (CAS 57-13-6)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea (Daphnia magna)	3910 mg/l, 48 hours
Fish	LC50	Carp (Leuciscus idus melanotus)	> 10000 mg/l, 48 hours
		Guppy (Poecilia reticulata)	16200 - 18300 mg/l, 96 hours
		Harlequinfish, red rasbora (Rasbora heteromorpha)	12000 mg/l, 96 hours
		Mozambique tilapia (Tilapia mossambica)	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. 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**

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 not known to be 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)**

Not 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 - No  
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)**

Not regulated.

**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

##### US. Massachusetts RTK - Substance List

Calcium Silicate (CAS 1344-95-2)

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

Calcium Silicate (CAS 1344-95-2)

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

Calcium Silicate (CAS 1344-95-2)

##### US. Rhode Island RTK

Not regulated.

##### 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)	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
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** 03-14-2016

**Version #** 01

**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  
Composition / Information on Ingredients: Ingredients  
Accidental release measures: Environmental precautions  
Physical & Chemical Properties: Multiple Properties  
Transport Information: Agency Name, Packaging Type, and Transport Mode Selection  
Other information, including date of preparation or last revision: Disclaimer  
GHS: Classification