

**1. Identification**

<b>Product identifier</b>	<b>Brandt Aquaculture Mix</b>	
<b>Other means of identification</b>		
<b>Product code</b>	46001	
<b>Recommended use</b>	Aquaculture - Dry Soluble Nutrient Mixture - Refer to Product Label	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	Brandt Consolidated, Inc.	
<b>Address</b>	2935 South Koke Mill Road Springfield, IL 62711 United States	
<b>Telephone</b>	Corporate Office	1-217-547-5800
<b>Website</b>	www.brandt.co	
<b>E-mail</b>	msds@brandt.co	
<b>Contact person</b>	EH&S / Regulatory Department	
<b>Emergency phone number</b>	Not available. CHEMTREC (24 hours): USA, Canada, Puerto Rico 1-800-424-3900 Virgin Islands 1-800-424-3900 International Maritime +1 (703) 527-3887	

**2. Hazard(s) identification**

<b>Physical hazards</b>	Oxidizing solids	Category 3
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Serious eye damage/eye irritation	Category 2A
<b>Environmental hazards</b>	Not classified.	
<b>OSHA defined hazards</b>	Not classified.	
<b>Label elements</b>		



<b>Signal word</b>	Warning
<b>Hazard statement</b>	May intensify fire; oxidizer. Harmful if swallowed. Causes serious eye irritation.
<b>Precautionary statement</b>	
<b>Prevention</b>	Keep away from heat. Take any precaution to avoid mixing with combustibles. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/eye protection/face protection.
<b>Response</b>	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. In case of fire: Use appropriate media to extinguish.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	7.54% of the mixture consists of component(s) of unknown acute oral toxicity.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Potassium Nitrate		7757-79-1	80 - < 90*
Mono potassium phosphate (MKP)		7778-77-0	5 - < 10*
Manganese EDTA, disodium salt		15375-84-5	< 1*
Cobalt Sulfate, Monohydrate		10124-43-3	< 0.1*
EDTA, Disodium Copper(II) Salt		14025-15-1	< 0.1*
Other components below reportable levels			5 - < 10

\*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>	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.
<b>Ingestion</b>	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.
<b>Most important symptoms/effects, acute and delayed</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	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

<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>	May intensify fire; oxidizer.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
<b>Fire-fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
<b>Specific methods</b>	Cool containers exposed to flames with water until well after the fire is out.
<b>General fire hazards</b>	May intensify fire; oxidizer.

### 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. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from the spilled material. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. 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>	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop the flow of material, if this is without risk. 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. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Sweep up or vacuum up spillage and collect in suitable container for disposal. 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** Keep away from heat. Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Take any precaution to avoid mixing with combustibles. Avoid breathing dust. Avoid contact with eyes. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Keep away from heat. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Do not store near combustible materials. 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 <sup>3</sup>

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Cobalt Sulfate, Monohydrate (CAS 10124-43-3)	TWA	0.02 mg/m <sup>3</sup>

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

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

### Biological limit values

#### ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Cobalt Sulfate, Monohydrate (CAS 10124-43-3)	15 µg/l	Cobalt	Urine	*
	1 µg/l	Cobalt	Blood	*

\* - For sampling details, please see the source document.

**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. 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** Wear eye/face protection. Face shield is recommended. Use tight fitting goggles if dust is generated.

#### Skin protection

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Wear appropriate chemical resistant 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.

**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**

<b>Appearance</b>	Powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	Light yellow.
<b>Odor</b>	None.
<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>	487.4 °F (253 °C) estimated
<b>Initial boiling point and boiling range</b>	752 °F (400 °C) estimated
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<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.
<b>Vapor pressure</b>	0.00001 hPa estimated
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	300 g/l estimated
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>pH in aqueous solution</b>	5 - 7 (1% Solution) estimated

**10. Stability and reactivity**

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Excessive heat. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

**11. Toxicological information****Information on likely routes of exposure**

<b>Ingestion</b>	Harmful if swallowed.
<b>Inhalation</b>	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** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

**Information on toxicological effects**

**Acute toxicity** Harmful if swallowed.

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
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Brandt Aquaculture Mix (CAS Mixture)

**Acute**

*Oral*

LD50	Mouse	32327.1797 mg/kg estimated
	Rabbit	1336.9729 mg/kg estimated

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
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Cobalt Sulfate, Monohydrate (CAS 10124-43-3)

**Acute**

*Oral*

LD50	Mouse	584 mg/kg
	Rabbit	1800 mg/kg
	Rat	424 mg/kg

*Other*

LD100	Dog	16.2 mg/kg
LD50	Mouse	27.1 mg/kg
	Rat	18.2 mg/kg

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

**Acute**

*Oral*

LD50	Mouse	1700 mg/kg
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Potassium Nitrate (CAS 7757-79-1)

**Acute**

*Oral*

LD50	Rabbit	1166 mg/kg
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\* 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.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Cobalt Sulfate, Monohydrate (CAS 10124-43-3) Reasonably Anticipated to be a Human Carcinogen.

**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.

<b>Aspiration hazard</b>	Not available.
<b>Chronic effects</b>	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 Aquaculture Mix (CAS Mixture)		
<b>Aquatic</b>		
Fish	LC50	Fish
		814.4283 mg/l, 96 hours estimated
Components	Species	Test Results
Cobalt Sulfate, Monohydrate (CAS 10124-43-3)		
<b>Aquatic</b>		
Fish	LC50	Fathead minnow ( <i>Pimephales promelas</i> )
		3.75 mg/l, 96 hours
EDTA, Disodium Copper(II) Salt (CAS 14025-15-1)		
<b>Aquatic</b>		
Fish	LC50	Channel catfish ( <i>Ictalurus punctatus</i> )
		838 mg/l, 96 hours
Potassium Nitrate (CAS 7757-79-1)		
<b>Aquatic</b>		
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )
		1200 mg/l, 96 hours
<i>Acute</i>		
Fish	LC50	Fish
		1378 - 3000 mg/l

\* Estimates for product may be based on additional component data not shown.

<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	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

<b>Disposal instructions</b>	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.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	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).
<b>Contaminated packaging</b>	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

#### Basic shipping requirements:

<b>UN number</b>	UN1479
<b>Proper shipping name</b>	Oxidizing solid, n.o.s.
<b>Hazard class</b>	5.1
<b>Packing group</b>	III
<b>Special precautions</b>	Read safety instructions, SDS and emergency procedures before handling.

#### Additional information:

<b>Special provisions</b>	62, IB8, IP3, T1, TP33
<b>Packaging exceptions</b>	152
<b>Packaging non bulk</b>	213
<b>Packaging bulk</b>	240

**IATA**

<b>UN number</b>	UN1479
<b>UN proper shipping name</b>	Oxidizing solid, n.o.s. (Potassium Nitrate)
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	5.1
<b>Packing group</b>	III
<b>Environmental hazards</b>	No.
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Forbidden.
<b>Cargo aircraft only</b>	Forbidden.

**IMDG**

<b>UN number</b>	UN1479
<b>UN proper shipping name</b>	OXIDIZING SOLID, N.O.S.
<b>Transport hazard class(es)</b>	
<b>Class</b>	5.1
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-A, S-Q
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

**DOT**



**IATA; IMDG**



**DOT**





## 15. Regulatory information

### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

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

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

Cobalt Sulfate, Monohydrate (CAS 10124-43-3)	Listed.
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 - Yes  
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	80 - < 90

### Other federal regulations

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

Cobalt Sulfate, Monohydrate (CAS 10124-43-3)  
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

Cobalt Sulfate, Monohydrate (CAS 10124-43-3)  
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

Cobalt Sulfate, Monohydrate (CAS 10124-43-3)



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. WARNING: This product contains a chemical known to the State of California to cause cancer.

#### US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Cobalt Sulfate, Monohydrate (CAS 10124-43-3) Listed: May 20, 2005

#### 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)	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	11-05-2014
Version #	01
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.