

## 1. Identification

**Product identifier** MICROSTART PLATINUM

**Other means of identification**  
**Product code** 278000

**Recommended use** Soil additive, micronutrient.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**  
**Supplier:**  
**Company name:** Advanced Micronutrient Products  
**Address:** 2405 W. Vassar Road (M-15)  
 Reese, MI 48757  
 USA

**Telephone number:** 800-292-3672 or 989-752-2138  
**Email:** info@ampmicros.com  
**Contact person:** Product Stewardship

**Emergency telephone number** +1 703-741-5970 CCN 724829

## 2. Hazard identification

**Physical hazards** Not classified.

**Health hazards** Serious eye damage/eye irritation Category 1

**Environmental hazards** Hazardous to the aquatic environment, acute hazard Category 1  
 Hazardous to the aquatic environment, long-term hazard Category 1

### Label elements



**Signal word** Danger

**Hazard statement** Causes serious eye damage. Very toxic to aquatic life with long lasting effects.

**Precautionary statement**  
**Prevention** Avoid release to the environment. Wear eye protection/face protection.  
**Response** 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 CENTRE/doctor. Collect spillage.  
**Storage** Store away from incompatible materials.  
**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Supplemental information** None.

**Other hazards** None known.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Ulexite		1319-33-1	45 - 70
Calcium sulphate		7778-18-9	7 - 13
Calcium carbonate		471-34-1	7 - 13

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Chemical name	CAS number	%
Zinc oxide	1314-13-2	7 - 13
Dicopper oxide	1317-39-1	1 - 5
Urea	57-13-6	1 - 5
Zinc sulphate	7733-02-0	1 - 5
Iron oxide	1309-37-1	0.1 - 1.5

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#### 4. First-aid measures

<b>Inhalation</b>	Move 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>	Do not rub eyes. 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 immediately.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. 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.

#### 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. Carbon oxides. Sulphur oxides. Nitrogen Oxides. Metal oxides.
<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. Dike fire control water for later disposal. Water runoff can cause environmental damage. Avoid discharge into drains, water courses or onto the ground.
<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. 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.
<b>Methods and materials for containment and cleaning up</b>	Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent product from entering drains. Stop the flow of material, if this is without risk.  Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Retain and dispose of contaminated wash water.  Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.
<b>Environmental precautions</b>	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. 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

Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not get this material in contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store in tightly closed container. 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. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium sulphate (CAS 7778-18-9)	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.
Dicopper oxide (CAS 1317-39-1)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0.2 mg/m <sup>3</sup>	Fume.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Respirable fraction.
	TWA	2 mg/m <sup>3</sup>	Respirable fraction.

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	10 mg/m <sup>3</sup>	
Calcium sulphate (CAS 7778-18-9)	TWA	10 mg/m <sup>3</sup>	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m <sup>3</sup>	Respirable.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Respirable.
	TWA	2 mg/m <sup>3</sup>	Respirable.

#### Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Calcium sulphate (CAS 7778-18-9)	TWA	10 mg/m <sup>3</sup>	Inhalable
Iron oxide (CAS 1309-37-1)	STEL	10 mg/m <sup>3</sup>	Fume.
	TWA	5 mg/m <sup>3</sup>	Dust.
		5 mg/m <sup>3</sup>	Fume.
		3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Total dust.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Respirable.
	TWA	2 mg/m <sup>3</sup>	Respirable.

#### Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Calcium sulphate (CAS 7778-18-9)	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.
Dicopper oxide (CAS 1317-39-1)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0.2 mg/m <sup>3</sup>	Fume.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Respirable fraction.
	TWA	2 mg/m <sup>3</sup>	Respirable fraction.

**Canada. New Brunswick OELs: Threshold Limit Values (TLVs) Based on the 1991 and 1997 ACGIH TLVs and BEIs Publication (New Brunswick Regulation 91-191)**

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	10 mg/m3	
Calcium sulphate (CAS 7778-18-9)	TWA	10 mg/m3	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Dust.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	
	TWA	5 mg/m3	
		10 mg/m3	Dust.

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value	Form
Calcium sulphate (CAS 7778-18-9)	TWA	10 mg/m3	Inhalable fraction.
Dicopper oxide (CAS 1317-39-1)	TWA	0.2 mg/m3	Fume.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

**Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)**

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	10 mg/m3	Total dust.
Calcium sulphate (CAS 7778-18-9)	TWA	10 mg/m3	Total dust.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Dust and fume.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable dust.
	TWA	2 mg/m3	Respirable dust.

**Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)**

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	15 minute	20 mg/m3	
	8 hour	10 mg/m3	
Calcium sulphate (CAS 7778-18-9)	15 minute	20 mg/m3	
	8 hour	10 mg/m3	
Iron oxide (CAS 1309-37-1)	15 minute	20 mg/m3	
	8 hour	10 mg/m3	
Zinc oxide (CAS 1314-13-2)	15 minute	10 mg/m3	Respirable fraction and dust or fume.
	8 hour	2 mg/m3	Respirable fraction and dust or fume.

**Biological limit values**

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

**Appropriate engineering controls**

Good general ventilation 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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

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

**Eye/face protection**

When working with powders or dusts, wear dust-proof chemical goggles and face shield unless full facepiece respiratory protection is worn.

<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
<b>Other</b>	Wear appropriate chemical resistant clothing.
<b>Respiratory protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Wear respirator with dust filter.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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

<b>Physical state</b>	Solid.
<b>Form</b>	Granular.
<b>Colour</b>	Gray, Tan or Brown

**Odour** Not available.

**Odour threshold** Not available.

**pH** 5 - 7

**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

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

**Explosive limit – upper (%)** Not available.

**Vapour pressure** Not available.

**Vapour 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.

### Other information

**Explosive properties** Not explosive.

**Oxidising properties** Not oxidising.

**Particle size** 2 - 3 mm

## 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.

**Incompatible materials** Strong reducing agents. Acids. Bases. Aluminium. Phosphorus.

**Hazardous decomposition products** No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Dust or powder may irritate the skin.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	May cause discomfort if swallowed.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes.
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### Information on toxicological effects

<b>Acute toxicity</b>	Not expected to be acutely toxic.
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<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Zinc sulphate (CAS 7733-02-0)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	920 mg/kg

<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
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<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
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### Respiratory or skin sensitisation

<b>Respiratory sensitisation</b>	Not a respiratory sensitiser.
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<b>Skin sensitisation</b>	This product is not expected to cause skin sensitisation.
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<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
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<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.
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<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
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<b>Specific target organ toxicity - single exposure</b>	Not classified.
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<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
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<b>Aspiration hazard</b>	Not an aspiration hazard.
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<b>Chronic effects</b>	Prolonged inhalation may be harmful.
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## 12. Ecological information

<b>Ecotoxicity</b>	Very toxic to aquatic life with long lasting effects.
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<b>Persistence and degradability</b>	The product contains inorganic compounds which are not biodegradable.
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<b>Bioaccumulative potential</b>	No data available.
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<b>Mobility in soil</b>	The product is soluble in water. Expected to be mobile in soil.
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<b>Other adverse effects</b>	No data available.
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## 13. Disposal considerations

<b>Disposal instructions</b>	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.
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<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
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<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
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<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).
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<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
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## 14. Transport information

### TDG

**UN number** UN3077  
**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide, Dicopper oxide)  
**Transport hazard class(es)**  
**Class** 9  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards** Yes  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

### IATA

**UN number** UN3077  
**UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (Zinc oxide, Dicopper oxide)  
**Transport hazard class(es)**  
**Class** 9  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards** Yes  
**ERG Code** 9L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

### IMDG

**UN number** UN3077  
**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide, Dicopper oxide)  
**Transport hazard class(es)**  
**Class** 9  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards**  
**Marine pollutant** Yes  
**EmS** F-A, S-F  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## 15. Regulatory information

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

### Controlled Drugs and Substances Act

Not regulated.

### Export Control List (CEPA 1999, Schedule 3)

Not listed.

### Greenhouse Gases

Not listed.

### Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Dicopper oxide (CAS 1317-39-1)

Zinc oxide (CAS 1314-13-2)

Zinc sulphate (CAS 7733-02-0)

### Precursor Control Regulations

Not regulated.

### International regulations

#### Stockholm Convention

Not applicable.

#### Rotterdam Convention

Not applicable.

#### Kyoto Protocol

Not applicable.

**Montreal Protocol**

Not applicable.

**Basel Convention**

Not applicable.

**International Inventories**

<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
Australia	Australian Inventory of Industrial Chemicals (AICIS)	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)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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**

**Issue date** 25-August-2022

**Revision date** -

**Version No.** 01

**Disclaimer** The information and recommendations contained in this Safety Data Sheet relate only to the specific material referred to herein (the "Material") and does not relate to the use of such Material in combination with any other material or process. The information and recommendations contained herein are believed to be current and correct as of the date prepared. However, the information and recommendations are presented without warranty, representation or license of any kind, express or implied, with respect to its accuracy, correctness or completeness, and the seller, supplier and manufacturer of the Material and their respective affiliates disclaim all liability for reliance on such information and recommendations. This Data Sheet is not a guarantee of safety. A buyer or user of the Material (a "Recipient") is responsible for ensuring that it has all current information necessary to safely use the Material for its specific purpose. Furthermore, the Recipient assumes all risk in connection with the use of the Material. The Recipient assumes all responsibility for ensuring the Material is used in a safe manner in compliance with applicable environmental, health, safety and security laws, policies and guidelines. The Supplier does not warrant the merchantability of the Material or the fitness of the Material for any particular use and assumes no responsibility for injury or damage caused directly or indirectly by or related to the use of the Material.



## 1. Identification

### MICROSTART PLATINUM DUO

**Product identifier**  
**Other means of identification**  
**Product code** 281000  
**Recommended use** Soil additive, micronutrient. None known.  
**Recommended restrictions**

#### Manufacturer/Importer/Supplier/Distributor information

**Supplier:**  
**Company Name:** Advanced Micronutrient Products  
**Address:** 2405 W. Vassar Road (M-15)  
 Reese, MI 48757  
 USA  
**Telephone Number:** 800-292-3672 or 989-752-2138  
**Email:** info@ampmicros.com  
**Contact person:** Product Stewardship

**Emergency telephone number** +1 703-741-5970 CCN 724829

## 2. Hazard(s) identification

**Physical hazards** Not classified.  
**Health hazards** Serious eye damage/eye irritation Category 1  
**Environmental hazards** Hazardous to the aquatic environment, acute hazard Category 1  
 Hazardous to the aquatic environment, long-term hazard Category 1  
**OSHA defined hazards** Not classified.

#### Label elements



**Signal word** Danger  
**Hazard statement** Causes serious eye damage. Very toxic to aquatic life with long lasting effects.  
**Precautionary statement**  
**Prevention** Avoid release to the environment. Wear eye protection/face protection.  
**Response** 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. Collect spillage.  
**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	CAS number	%
Ulexite	1319-33-1	45 - 70
Calcium sulfate	7778-18-9	7 - 13
Calcium carbonate	471-34-1	7 - 13
Zinc oxide	1314-13-2	1 - 5
Dicopper oxide	1317-39-1	1 - 5
Urea	57-13-6	1 - 5
Zinc sulfate	7733-02-0	0.1 - 1.5
Iron oxide	1309-37-1	0.1 - 1.5

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#### 4. First-aid measures

<b>Inhalation</b>	Move 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>	Do not rub eyes. 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 immediately.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. 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.

#### 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. Carbon oxides. Sulfur oxides. Nitrogen oxides. Metal oxides.
<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. Dike fire control water for later disposal. Water runoff can cause environmental damage. Avoid discharge into drains, water courses or onto the ground.
<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. Wear appropriate protective equipment and clothing during clean-up. 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. 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>	Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent product from entering drains. Stop the flow of material, if this is without risk.  Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Retain and dispose of contaminated wash water.  Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. 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**

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not get this material in contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store in tightly closed container. 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 sulfate (CAS 7778-18-9)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
Iron oxide (CAS 1309-37-1)	PEL	10 mg/m <sup>3</sup>	Fume.
Zinc oxide (CAS 1314-13-2)	PEL	5 mg/m <sup>3</sup>	Fume.
		5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Calcium sulfate (CAS 7778-18-9)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Zinc oxide (CAS 1314-13-2)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Calcium sulfate (CAS 7778-18-9)	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.
Dicopper oxide (CAS 1317-39-1)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0.2 mg/m <sup>3</sup>	Fume.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Respirable fraction.
	TWA	2 mg/m <sup>3</sup>	Respirable fraction.

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

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Calcium sulfate (CAS 7778-18-9)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Dicopper oxide (CAS 1317-39-1)	TWA	1 mg/m3	Dust and mist.
		0.1 mg/m3	Fume.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Dust and fume.
Zinc oxide (CAS 1314-13-2)	Ceiling	15 mg/m3	Dust.
	STEL	10 mg/m3	Fume.
	TWA	5 mg/m3	Fume.
		5 mg/m3	Dust.

**US. Workplace Environmental Exposure Level (WEEL) Guides**

Components	Type	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m3	Total particulate.

**Biological limit values**

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

**Appropriate engineering controls**

Good general ventilation 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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

When working with powders or dusts, wear dust-proof chemical goggles and face shield unless full facepiece respiratory protection is worn.

**Skin protection****Hand protection**

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Skin protection****Other**

Wear suitable protective clothing.

**Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Wear respirator with dust filter.

**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****Appearance****Physical state**

Solid.

**Form**

Granular.

**Color**

Gray, Tan or Brown

**Odor**

Not available.

**Odor threshold**

Not available.

**pH**

5 - 7

**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.
<b>Upper/lower flammability or explosive limits</b>	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
<b>Solubility(ies)</b>	
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
<b>Other information</b>	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Particle size	2 - 3 mm

## 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>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong reducing agents. Acids. Bases. Aluminum. Phosphorus.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Dust or powder may irritate the skin.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	May cause discomfort if swallowed.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes.
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### Information on toxicological effects

<b>Acute toxicity</b>	Not expected to be acutely toxic.
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Components	Species	Test Results
Calcium carbonate (CAS 471-34-1)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	6450 mg/kg
Zinc sulfate (CAS 7733-02-0)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	920 mg/kg
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.	

<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Iron oxide (CAS 1309-37-1)	3 Not classifiable as to carcinogenicity to humans.
<b>NTP Report on Carcinogens</b>	
Not listed.	
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b>	
Not listed.	
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Calcium carbonate (CAS 471-34-1)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish	LC50	Western mosquitofish ( <i>Gambusia affinis</i> ) > 56000 mg/l, 96 Hours

**Persistence and degradability** The product contains inorganic compounds which are not biodegradable.

**Bioaccumulative potential** No data available.

<b>Partition coefficient n-octanol / water (log Kow)</b>	
Urea (CAS 57-13-6)	-2.11

**Mobility in soil** The product is soluble in water. Expected to be mobile in soil.

**Other adverse effects** No data available.

## 13. Disposal considerations

**Disposal instructions** Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. 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** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

<b>DOT</b>	
<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (Zinc oxide, Dicopper oxide)

**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, A112, B54, B120, IB8, IP3, N20, T1, TP33

**Packaging exceptions** 155

**Packaging non bulk** 213

**Packaging bulk** 240

**IATA**

**UN number** UN3077

**UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (Zinc oxide, Dicopper oxide)

**Transport hazard class(es)**

**Class** 9  
**Subsidiary risk** -

**Packing group** III

**Environmental hazards** Yes

**ERG Code** 9L

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

**IMDG**

**UN number** UN3077

**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide, Dicopper oxide)

**Transport hazard class(es)**

**Class** 9  
**Subsidiary risk** -

**Packing group** III

**Environmental hazards**

**Marine pollutant** Yes

**EmS** F-A, S-F

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

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

**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)**

Dicopper oxide (CAS 1317-39-1) Listed.

Zinc oxide (CAS 1314-13-2) Listed.

Zinc sulfate (CAS 7733-02-0) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated "active".

**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Serious eye damage or eye irritation

**SARA 313 (TRI reporting)**

<b>Chemical name</b>	<b>CAS number</b>	<b>% by wt.</b>
Dicopper oxide	1317-39-1	1 - 5
Zinc oxide	1314-13-2	7 - 13
Zinc sulfate	7733-02-0	1 - 5

**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)** Contains component(s) regulated under the Safe Drinking Water Act.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Calcium carbonate (CAS 471-34-1)  
Calcium sulfate (CAS 7778-18-9)  
Iron oxide (CAS 1309-37-1)  
Zinc oxide (CAS 1314-13-2)  
Zinc sulfate (CAS 7733-02-0)

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

Calcium carbonate (CAS 471-34-1)  
Calcium sulfate (CAS 7778-18-9)  
Dicopper oxide (CAS 1317-39-1)  
Iron oxide (CAS 1309-37-1)  
Zinc oxide (CAS 1314-13-2)  
Zinc sulfate (CAS 7733-02-0)

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

Calcium carbonate (CAS 471-34-1)  
Calcium sulfate (CAS 7778-18-9)  
Dicopper oxide (CAS 1317-39-1)  
Iron oxide (CAS 1309-37-1)  
Zinc oxide (CAS 1314-13-2)  
Zinc sulfate (CAS 7733-02-0)

**US. Rhode Island RTK**

Calcium carbonate (CAS 471-34-1)  
Calcium sulfate (CAS 7778-18-9)  
Iron oxide (CAS 1309-37-1)  
Zinc oxide (CAS 1314-13-2)

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**International Inventories**

<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
Australia	Australian Inventory of Industrial Chemicals (AICIS)	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)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes



Country(s) or region	Inventory name	On inventory (yes/no)*
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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

Issue date	27-August-2024
Revision date	-
Version #	01
NFPA ratings	



### Disclaimer

The information and recommendations contained in this Safety Data Sheet relate only to the specific material referred to herein (the "Material") and does not relate to the use of such Material in combination with any other material or process. The information and recommendations contained herein are believed to be current and correct as of the date prepared. However, the information and recommendations are presented without warranty, representation or license of any kind, express or implied, with respect to its accuracy, correctness or completeness, and the seller, supplier and manufacturer of the Material and their respective affiliates disclaim all liability for reliance on such information and recommendations. This Data Sheet is not a guarantee of safety. A buyer or user of the Material (a "Recipient") is responsible for ensuring that it has all current information necessary to safely use the Material for its specific purpose. Furthermore, the Recipient assumes all risk in connection with the use of the Material. The Recipient assumes all responsibility for ensuring the Material is used in a safe manner in compliance with applicable environmental, health, safety and security laws, policies and guidelines. The Supplier does not warrant the merchantability of the Material or the fitness of the Material for any particular use and assumes no responsibility for injury or damage caused directly or indirectly by or related to the use of the Material.