

SAFETY DATA SHEET

Section 1: Identification

Product Name: IQ Micro
Product Use: Dry fertilizer mixture.
Not recommended for: No available information.

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FOR CHEMICAL EMERGENCY:
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(800) 424-9300, USA/Canada
(703) 527-3887, International

Section 2: Hazard(s) Identification

GHS Ratings:

Oral Toxicity	Acute Tox. 4
Skin corrosive	2
Eye corrosive	1

GHS Hazards

H315	Causes skin irritation.
H319	Causes serious eye irritation.

GHS Precautions

P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P321	Specific treatment (see section 4 on this SDS).
P362	Take off contaminated clothing and wash before reuse.
P302+P352	IF ON SKIN: Wash with soap and water.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.

Signal Word: Warning



Section 3: Composition/Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
Glycine	56-40-6	20.00% - 30.00%
Ferrous sulfate monohydrate	17375-41-6	10.00% - 20.00%
Manganese sulfate, monohydrate	10034-96-5	10.00% - 20.00%
Zinc sulfate, monohydrate	7446-19-7	10.00% - 20.00%
Copper sulfate, pentahydrate	7758-99-8	5.00% - 10.00%
Citric acid, anhydrous	77-92-9	5.00% - 10.00%

Section 4: First-Aid Measures

If inhaled

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and seek medical attention immediately. Maintain an open airway. If symptoms appear or you feel unwell, seek medical advice/attention immediately. Loosen tight clothing such as a collar, tie, belt or waistband. In case of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

If in eyes

Rinse continuously with water for several minutes, occasionally lifting the upper and lower eyelids. Remove contact lenses if present and easy to do, continue rinsing. Seek medical advice/attention immediately.

If on skin (or hair)

Remove immediately all contaminated clothing. Rinse skin with plenty of soap and water for several minutes. If irritation/rash develops or persists, seek medical advice/attention immediately. Wash contaminated clothing before reuse.

If swallowed

Seek immediate medical advice/attention. Call a poison control center or physician. Rinse mouth with water. Remove dentures, if any. Move victim to fresh air and keep at rest in a position comfortable for breathing. If the person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place victim in recovery position and seek medical attention immediately. Maintain an open airway. Loosen tight clothing such as collar, tie, belt or waistband.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 11.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Section 5: Fire-Fighting Measures

Suitable extinguishing media

Water fog. Water spray. Dry chemical. Carbon dioxide (CO₂). Foam.

Unsuitable extinguishing media

None known.

Special hazards arising from the chemical(s)

None known.

Hazardous combustion products

See section 10.

Firefighting

If evacuation of personnel is necessary, evacuate to an upwind area. Decontaminate personnel and equipment with a water wash-down after fire and smoke exposure.

Firefighting equipment

Firemen and emergency responders: wear full turnout gear or Level A equipment, including positive-pressure, self-contained breathing apparatus (SCBA).

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away from the contaminated area. Avoid raising and breathing dust, and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator and suitable protective clothing. For personal protection, see section 8.

Take steps to avoid release into the environment, if safe to do so.

Methods and materials used for containment

Stop the spread of this material, if this can be done without risk. Contain spill and collect, as appropriate. If sweeping of a contained area is necessary use a dust suppressant agent, which does not react with product (see section 10 for incompatibility information). Dispose of the waste in compliance with all Federal, state, regional, and local regulations.

Section 7: Handling and Storage

Precautions for safe handling

Do not breathe in dust. Avoid contact with skin and eyes. Do not ingest. Use only with adequate ventilation.

Observe good industrial hygiene practices. Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, or processed. Workers should wash hands and face, before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed when not in use. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink.

Section 8: Exposure Controls / Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Glycine 56-40-6	5 mg/m ³ PEL (Respirable) 15 mg/m ³ PEL (Total Inhalation)	10 mg/m ³ TLV (Inhalation)	Not Established
Ferrous sulfate monohydrate 17375-41-6	TWA: 1 mg/m ³ (related to Iron salts (soluble))	TWA: 1 mg/m ³ (related to Iron salts (soluble))	NIOSH: TWA: 1 mg/m ³ (related to Iron salts (soluble))
Manganese sulfate, monohydrate 10034-96-5	STEL: 5 mg/m ³ , ceiling (fume & manganese, elemental & inorganic compounds, as Mn); Vacated 1989 PEL: TWA = 1 mg/m ³ (fume); STEL = 3 mg/m ³ (fume)	TWA: 0.2 mg/m ³ (fume and manganese, elemental & inorganic compounds, as Mn); Notice of Intended Change: 0.03 (respirable fraction) (fume & manganese, elemental & inorganic compounds, as Mn)	DFG MAKs: TWA: 0.5 mg/m ³ , Ceiling. Peak: 3 MAK, 15 minutes, avg value, 1-hr interval (fume) NIOSH: TWA: 1 mg/m ³ STEL: 3 mg/m ³ IDHL: 500 mg/m ³

Zinc sulfate, monohydrate 7446-19-7	TWA: 15 mg/m3 (Total dust); 5 mg/m3 (Respirable fraction)	Not Established	DFG MAKs: TWA: 4 mg/m3 (Total dust); 1.5 mg/m3 (Respirable fraction)
Copper sulfate, pentahydrate 7758-99-8	TWA: 1 mg/m3 (dusts & mists), 0.1 mg/m3 (fume)	TWA: 1 mg/m3 (dusts & mists), 0.2 mg/m3 (fume)	NIOSH: TWA: 1 mg/m3 (dusts & mists), 0.1 mg/m3 (fume) DFG MAKs: TWA: 1 mg/m3, Peak, 2MAK 15 minutes, avg value, 1-hr interval (copper and inorganic copper compounds); 0.1 mg/m3, Peak, 2MAK 15 minutes, avg value, 1-hr interval (fume)
Citric acid, anhydrous 77-92-9	TWA: 15 mg/m3 (Total dust), 5 mg/m3 (Respirable fraction)	Not Established	DFG MAKs: TWA: 4 mg/m3 (Total dust), 1.5 mg/m3 (Respirable fraction)

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Ventilation

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.

Personal protective equipment

Eye/face protection

Safety glasses with side shields or goggles are recommended. Avoid contact with eyes.

Hand protection

Wear chemical-resistant gloves (butyl rubber or neoprene). Protective gloves should be inspected frequently and discarded when they exhibit cuts, tears, pinholes, or signs of excessive wear. Wash and dry hands after use.

Body protection

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge.

Section 9: Physical and Chemical Properties

Appearance: Off-white powder

Odor: Vinegar odor

Explosive limits: No Data

Vapor pressure: No Data

<p>Odor threshold: No Data</p> <p>pH: No Data</p> <p>Specific gravity: No Data</p> <p>Boiling point: No Data</p> <p>Melting point/Freezing point: No Data</p> <p>Flash Point: No Data</p> <p>Flammability: No Data</p> <p>Partition coefficient (n-octanol/water): No Data</p>	<p>Vapor density: No Data</p> <p>Relative density: No Data</p> <p>Solubility: No Data</p> <p>Boiling range: No Data</p> <p>Evaporation rate: No Data</p> <p>Autoignition temperature: No Data</p> <p>Decomposition temperature: No Data</p> <p>Viscosity: No Data</p>
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Section 10: Stability and Reactivity

Chemical stability

STABLE

Incompatible materials

Strong oxidizing agents
 Citric acid when wet or in a solution is corrosive to brass, copper, zinc, aluminum and their alloys, lead, cast iron and steel (not stainless steel).
 Metal nitrates
 Oxidizing agents
 Strong bases (sodium / potassium / barium hydroxides)
 Alkalines
 Phosphates
 Alkali carbonates
 Alkali hydroxides
 Borax
 Calcium
 Lead
 Strontium
 Tannins
 Powdered metals
 Strong acids (hydrochloric, nitric, sulfuric, hydrobromic, hydroiodic, perchloric)
 Gold and silver salts
 Lead acetate
 Lime water
 Potassium iodide
 Potassium
 Sodium borate
 Sodium tartrate
 Soluble carbonates
 Strong alkalis

Hazardous decomposition

Irritating fumes
 Acrid smoke
 Carbon dioxide
 Carbon monoxide
 Copper oxides
 Sulfur oxides

Zinc oxides
Manganese

Hazardous polymerization will not occur.

Section 11: Toxicological Information

Mixture Toxicity

Oral Toxicity LD50: 1,275mg/kg

Component Toxicity

17375-41-6	Ferrous sulfate monohydrate Oral LD50: 1,520 mg/kg (mouse)
7446-19-7	Zinc sulfate, monohydrate Oral LD50: 574 mg/kg (rat) Dermal LD50: 2,001 mg/kg (rat)
7758-99-8	Copper sulfate, pentahydrate Oral LD50: 369 mg/kg (mouse)

Likely routes of exposure

Inhalation Skin contact Eye contact Ingestion

Exposure may affect the following organs

Blood Kidneys Liver Central Nervous System Skin

Effects of exposure

Ingestion Ingestion may cause gastrointestinal irritation. Symptoms can include nausea, diarrhea, vomiting, and abdominal pain.

Skin contact Causes skin irritation. Symptoms may include pain, itching and/or redness. Prolonged and/or repeated exposure to this product may cause dermatitis or eczema.

Inhalation May cause respiratory irritation. Symptoms can include sore throat, coughing, sneezing, and labored breathing.

Eye contact Causes serious eye damage. Symptoms can include irritation, pain, watering and/or redness.

Conditions aggravated

Persons with pre-existing skin, eye, and/or respiratory disorders may be more susceptible to the effects of this product.

Carcinogenicity

The following chemicals comprise 0.1% or more of this mixture and are listed and/or classified as carcinogens or potential carcinogens by NTP, IARC, OSHA, or ACGIH.

<u>CAS Number</u>	<u>Description</u>	<u>% Weight</u>	<u>Carcinogen Rating</u>
None			N/A

Section 12: Ecological Information

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

Section 13: Disposal Considerations

Disposal instructions

Do not allow this material to drain into sewers/water supplies. All waste must be handled in accordance with local, state and federal regulations or with regulations of Canada and its Provinces. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

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 (refer to 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.

Section 14: Transport Information

<u>Agency</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT	Not regulated by DOT			

Section 15: Regulatory Information

State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): WARNING!

This product contains the following chemicals which are listed by the State of California as carcinogenic or a reproductive toxin:

7446-19-7 Zinc sulfate, monohydrate 10 to 20 %

The following chemicals are listed under Canadian NDSL

- None

Section 16: Other Information

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Reviewer Revision

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