

SAFETY DATA SHEET

Section 1: Identification

Product Name: IQ Set
Product Use: Liquid fertilizer mixture.
Not recommended for: No available information.

AGRONOMIC PARTNERS
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(972) 755-1941

FOR CHEMICAL EMERGENCY:
Call CHEMTREC, day or night
(800) 424-9300, USA/Canada
(703) 527-3887, International

Section 2: Hazard(s) Identification

GHS Ratings:

Reproductive toxin 1

GHS Hazards

H360 May damage fertility or the unborn child

GHS Precautions

P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P264 Wash skin thoroughly after handling
P280 Wear protective gloves/protective clothing/eye protection/face protection
P281 Use personal protective equipment as required
P308+P313 IF exposed or concerned: Get medical advice/attention
P405 Store locked up
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Signal Word: **Danger**



Section 3: Composition/Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
Glycine	56-40-6	10.00% - 20.00%
Citric acid, anhydrous	77-92-9	1.00% - 5.00%
Ferrous sulfate monohydrate	17375-41-6	1.00% - 5.00%
Manganese sulfate, monohydrate	10034-96-5	1.00% - 5.00%
Zinc sulfate, monohydrate	7446-19-7	1.00% - 5.00%

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.

Fire fighting 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 breathing vapors, mist or gas. Ensure adequate ventilation. Wear suitable protective clothing. For personal protection, see section 8.

Small spills

Ventilate the contaminated area. Wipe up with absorbent material or mix the appropriate sorbent into the spilled material. Use an absorbent like sawdust for aqueous, waterborne, and solvent-borne coatings. Collect the saturated towels or sorbent and transfer into a covered container.

Large spills

Prevent this material from entering sewers and watercourses by diking or impounding the spilled material. Ventilate the contaminated area. Mix the appropriate sorbent into the spilled material. Use an absorbent like sawdust for aqueous, waterborne, and solvent-borne coatings. Collect the saturated sorbent and transfer it into a covered container.

Steel containers are acceptable for all acid-free wastes. Use suitable plastic containers for acid-bearing wastes. Dispose of the waste in compliance with all Federal, state, regional, and local regulations.

Section 7: Handling and Storage

Precautions for safe handling

Avoid inhalation of vapors/spray and 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

Prevent from freezing. Do not store above 120 F (49 C). 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	Not Established	Not Established	Not Established
Citric acid, anhydrous 77-92-9	TWA: 15 mg/m ³ (Total dust), 5 mg/m ³ (Respirable fraction)	Not Established	DFG MAKs: TWA: 4 mg/m ³ (Total dust), 1.5 mg/m ³ (Respirable fraction)
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/m ³ (Total dust); 5 mg/m ³ (Respirable fraction)	Not Established	DFG MAKs: TWA: 4 mg/m ³ (Total dust); 1.5 mg/m ³ (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

Splash goggles are recommended. Avoid contact with eyes. If extra protection is required, wear a face shield over the splash goggles. Face shields are effective only if worn in addition to splash goggles.

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

<p>Appearance: Green liquid</p> <p>Odor: No Data</p> <p>Odor threshold: No Data</p> <p>pH 3.4 - 3.9</p> <p>Specific gravity: 1.2</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>Explosive limits: No Data</p> <p>Vapor pressure: 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>
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**Partition coefficient (n- No Data
octanol/water):**

Viscosity: No Data

Section 10: Stability and Reactivity

Chemical stability

STABLE

Incompatible materials

Powdered metals

Strong acids (hydrochloric, nitric, sulfuric, hydrobromic, hydroiodic, perchloric)

Strong oxidizing agents

Alkali carbonates

Alkali hydroxides

Borax

Calcium

Lead

Strontium

Tannins

Gold and silver salts

Lead acetate

Lime water

Potassium iodide

Potassium

Sodium borate

Sodium tartrate

Soluble carbonates

Strong alkalis

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)

Hazardous decomposition

Sulfur oxides

Manganese

Zinc oxides

Acrid smoke

Carbon dioxide

Carbon monoxide

Irritating fumes

Hazardous polymerization will not occur.

Section 11: Toxicological Information

Mixture Toxicity

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)

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 May cause irritation to the skin. Symptoms can include pain, itching and/or redness.

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

Eye contact May cause eye irritation. Symptoms can include irritation, pain, watering and/or redness.

Conditions aggravated

No data available

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
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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>
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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 1 to 5 %

The following chemicals are listed under Canadian NDSL

- None

Section 16: Other Information

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Reviewer Revision

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