SAFETY DATA SHEET

Issuing Date 01-Dec-2016 **Revision Date** 01-Dec-2016 **Revision Number** 0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS product identifier

Product Name **MAX-IN IRON**

Other means of identification

Unity Number 1656162, 1656164, 1656163

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Fertilizer product – See product label for full directions for use.

Uses advised against See product label for any potential restrictions on use.

Supplier's details

Supplier Address
Winfield Solutions, LLC.
P.O. Box 64589
St. Paul, MN 55164-0589

For Non-Emergency Business Inquiries:
1-855-494-6343 Mon-Fri, 8am-5pm CST

Emergency telephone number

Emergency Telephone Number FOR MEDICAL EMERGENCY: 1-877-424-7452 (24hrs)

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, CALL: CHEMTREC 1-800-424-9300 (24 hours)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

Acute Oral Toxicity	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

GHS Label elements, including precautionary statements

Emergency Overview

Signal Word **Warning**

Hazard Statements
• Harmful if swallowed
• Causes skin irritation
• Causes serious eye irritation
• May cause damage to organs through prolonged or repeated exposure

Appearance Dark green. **Physical State** Liquid. **Odor** Mild, Soapy.

Precautionary Statements

Prevention
• Wash face, hands and any exposed skin thoroughly after handling.
• Do not eat, drink or smoke when using this product.
• Do not breathe dust/fume/gas/mist/vapors/spray.
• Wear protective gloves/protective clothing/eye protection/face protection.

General Advice
• Get medical attention/advice if you feel unwell

Eyes
• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
• If eye irritation persists: Get medical advice/attention.

Skin
• IF ON SKIN: Wash with plenty of soap and water.
• If skin irritation occurs: Get medical advice/attention.
• Take off contaminated clothing and wash before reuse.

Ingestion
• IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
• Rinse mouth.

Storage
• None

Disposal
• Dispose of contents/container to an approved waste disposal plant.

Hazard Not Otherwise Classified (HNOC)

Not applicable.

Other information
Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret

Ferrous sulfate heptahydrate	7782-63-0	10-30	*
Manganese sulfate monohydrate	10034-96-5	1-5	*
D-Glucopyranose, oligomeric, C9-11-alkyl glycosides	132778-08-6	1-5	*

**The exact percentage (concentration) of composition has been withheld as a trade secret.*

4. FIRST AID MEASURES

Description of necessary first-aid measures

Eye Contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Wash contaminated clothing separately before re-use. If skin irritation or rash occurs: Get medical advice/attention.

Inhalation Move to fresh air.

Ingestion IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Protection of First-aiders Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects Serious eye irritation or damage. Skin irritation. Ingestion may cause gastric disturbances. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Small Fires Dry chemical or CO_2.

Large Fires Water spray or alcohol resistant foam.

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon oxides, Sulfur oxides, Nitrogen oxides (NOx), metallic oxides of iron and manganese.

Explosion Data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Refer to Section 8 for personal protective equipment.

Advice for emergency responders Wear personal protective equipment.

Environmental Precautions

Environmental Precautions Dispose of contents/container to an approved waste disposal facility. Collect spillage. See Section 12 for additional Ecological Information. Prevent further leakage or spillage if safe to do so. Do not allow spilled product to enter sewers or waterways. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Dike to collect large liquid spills.

Methods for Cleaning Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Use personal protective equipment as required. Remove and wash contaminated clothing separately before re-use. Keep away from open flames, hot surfaces and sources of ignition.

Conditions for safe storage, including any incompatibilities

Storage Store away from children, food or feed products. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep away from open flames, hot surfaces and sources of ignition. Keep away from incompatible materials. Undiluted product may be corrosive to mild steel, aluminum, and brass and must be stored and/or shipped in fiberglass, propylene, or stainless steel—use only stainless or P.V.C fittings. Keep at temperatures between 7 and 38 °C (45 and 100 °F).

Incompatible Products Strong oxidizing agents. Strong reducing agents. Strong acids. Strong bases.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ferrous sulfate heptahydrate 7782-63-0	TWA: 1 mg/m^3 Fe	(vacated) TWA: 1 mg/m^3 Fe	TWA: 1 mg/m^3 Fe
Manganese sulfate monohydrate 10034-96-5	TWA: 0.2 mg/m^3 Mn	(vacated) Ceiling: 5 mg/m^3 Ceiling: 5 mg/m^3 Mn	IDLH: 500 mg/m^3 Mn TWA: 1 mg/m^3 Mn STEL: 3 mg/m^3 Mn

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Tightly fitting safety goggles.

Skin and Body Protection Wear protective gloves/clothing. Lightweight protective clothing. Impervious clothing. Chemical resistant gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Provide regular cleaning of equipment, work area and clothing. Remove and wash contaminated clothing and gloves, including the inside, separately before re-use. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid.	**Appearance**	Dark green.
Odor	Mild, Soapy.	**Odor Threshold**	No information available.

Property	Values	Remarks/ - Method
pH	2.39	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	No data available	None known
Flash Point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	Not applicable	None known
Flammability Limits in Air		
upper flammability limit	Not applicable	
lower flammability limit	Not applicable	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Specific Gravity	1.32	at 20 °C
Water Solubility	Miscible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known

Flammable Properties Not flammable

Explosive Properties Not explosive.
Oxidizing Properties Non-oxidizing.

Other information

VOC Content (%) No data available

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong oxidizing agents. Strong reducing agents. Strong acids. Strong bases.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors containing Carbon oxides, Sulfur oxides, Nitrogen oxides (NOx), metallic oxides of iron and manganese

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation There is no data available for this product. Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye Contact Based on components: Causes serious eye irritation.

Skin Contact Based on components: Causes skin irritation.

Ingestion Based on components: Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
D-Glucopyranose, oligomeric, C9-11-alkyl glycosides	>5000 mg/kg (rat)	>5000 mg/kg	>5 mg/L (dust/mist)

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Skin and eye contact may include pain, impaired vision, severe local redness and tissue damage. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization Not expected to be a skin sensitizer.

Mutagenic Effects Not expected to be mutagenic.

Carcinogenicity Contains no ingredients above reportable quantities listed as a carcinogen.

Reproductive Toxicity This product does not contain any known or suspected reproductive hazards.
STOT - single exposure No information available.
STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.
Aspiration Hazard No information available.

Numerical measures of toxicity - Product

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document:

LD50 Oral 1824 mg/kg; Acute toxicity estimate
LD50 Dermal 64519 mg/kg; Acute toxicity estimate
Inhalation
dust/mist 129.1 mg/L; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Urea 57-13-6		LC50: 16200-18300 mg/L Poecilia reticulata 96 h	EC50 = 23914 mg/L 5 min	EC50 48 h: = 3910 mg/L Static (Daphnia magna) EC50 24 h: > 10000 mg/L (Daphnia magna Straus)
D-Glucopyranose, oligomeric, C9-11-alkyl glycosides 132778-08-6		LC50: >1 - 10 mg/L		
Citric acid 77-92-9		LC50 96 h: = 1516 mg/L static (Lepomis macrochirus)		EC50 72 h: = 120 mg/L (Daphnia magna)

Persistence and Degradability No information available.

Bioaccumulation No information available.

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Do not re-use empty containers. Triple rinse and recycle the container or dispose of in accordance with Federal, state, and local laws and regulations.

14. TRANSPORT INFORMATION

DOT Not regulated for transportation when shipped in container sizes <665 gallons. The information presented below is for shipment in containers that are equal to or greater than 665 gallons.

UN-Number UN3082
Proper shipping name Environmentally hazardous substance, liquid, n.o.s.

Hazard Class	9
Packing Group	III
Description	**Container sizes >/= 665 Gallons:** UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III, RQ (Ferrous sulfate)

15. REGULATORY INFORMATION

International Inventories

TSCA	Not determined
DSL	Not determined

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Manganese sulfate monohydrate	10034-96-5	3.125	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ferrous sulfate heptahydrate				X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Ferrous sulfate heptahydrate	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Ferrous sulfate heptahydrate		X	X		X
Manganese sulfate monohydrate			X	X	

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard**	2	**Flammability**	0	**Instability**	0	**Physical and Chemical Hazards**	-
HMIS	**Health Hazard**	2*	**Flammability**	0	**Physical Hazard**	0	**Personal Protection**	X

**Indicates a chronic health hazard.*

Prepared By
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General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet