


Safety Data Sheet

NFPA HAZARD RATING				U.S. TRANSPORT SUMMARY	
0	Least				Not regulated as a hazardous material for ground transport in quantities less than 368 gallons. (See Section 14 for additional information)
1	Slight	1	Health		
2	Moderate	0	Flammability		
3	High	0	Reactivity		
4	Severe				

SECTION 1: IDENTIFICATION	
Product Name:	Gravity® L 12-0-0 with Max-In® Technology
EPA Registration #:	Exempt
Product ID/Unity #:	1431547, 1431548, 1488567
Common Name:	Liquid nitrogen fertilizer with micronutrients
Chemical Description:	Urea, ferrous sulfate and manganese sulfate
Recommended Uses:	Fertilizer product - See product label for complete list of recommended uses and use sites.
Restrictions for Use:	See product label for information regarding restrictions on the use of this product.
Manufactured For: WINFIELD SOLUTIONS, LLC P. O. Box 64589 St. Paul, MN 55164-0589	MEDICAL EMERGENCY TELEPHONE NUMBER: 1-877-424-7452 (24hrs) Non-Emergency Business Inquiries: 1-855-494-6343 Mon – Fri 8am – 5pm (Central Standard Time)
FOR EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, CALL: CHEMTREC 1-800-424-9300 (24 hours)	

SECTION 2: HAZARDS IDENTIFICATION	
EMERGENCY OVERVIEW: Green to brown liquid with a faint sweet odor. Causes eye and skin irritation. Harmful if swallowed or absorbed through the skin.	
POTENTIAL HEALTH EFFECTS: Eyes: Causes serious but temporary irritation to the eyes. Skin: Causes moderate skin irritation including redness and itching. Inhalation: May be harmful if inhaled. Ingestion: Harmful if swallowed. Ingestion may cause nausea and vomiting. Preexisting Conditions: Pre-existing respiratory conditions may be aggravated by exposure to mists. Chronic Health Effects: Repeated exposure to ferrous sulfate can cause damage to the liver. Repeated exposure to manganese sulfate may cause damage to the lungs.	
Carcinogenicity	NTP: Not listed IARC: Not listed OSHA: Not listed
OSHA HCS 2012 CLASSIFICATION: Eye Irritant Category 2A; Skin Irritation Category 2; Acute Oral Toxicity Category 4; Acute Dermal Toxicity Category 4; Specific Target Organ Toxicity – Repeated Exposure – Category 2	
SIGNAL WORD: WARNING	
HAZARD STATEMENTS: Causes serious eye irritation. Causes skin irritation. Harmful if swallowed. Harmful in contact with skin. May cause damage to organs through prolonged or repeated exposure.	
Percent of product with unknown toxicity: 11.2% (acute oral toxicity); 66.2% (acute dermal toxicity)	

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PRECAUTIONARY STATEMENTS:

Prevention: Do not breathe mist or vapor. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye and face protection and protective gloves. Wear eye and face protection, protective gloves and protective clothing (See Section 8).

Response: **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 attention. **If on skin:** Wash with plenty of water. Immediately call a poison control center (1-877-424-7452) or doctor for treatment advice. Take off immediately all contaminated clothing and wash it before reuse. **If Swallowed:** Immediately call a poison control center (1-877-424-7452) or doctor for treatment advice. Rinse mouth. Get medical attention if you feel unwell.

Storage: See Section 7 for storage information.

Disposal: Dispose of contents/container in accordance with Federal, state and local regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	% (wt)	CAS Reg. #
Urea	26.5%	57-13-6
Ferrous sulfate, monohydrate	20.0 – 30.0%	17375-41-6
Manganese sulfate, monohydrate	3.0 – 5.0%	10034-96-5
*Ingredients not specifically listed are non-hazardous and/or considered to be confidential business information under 29 CFR 1910.1200(j).		
See Section 8 for exposure limits.		

SECTION 4: FIRST AID MEASURES

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention or call a poison control center for treatment advice.

Ingestion: Seek medical attention or call a poison control center immediately. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eyes: Flush eyes with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention if irritation persists.

Skin: Remove contaminated clothing and wash before re-using them. Wash exposed skin with soap and water. Seek medical attention if skin irritation persists.

SECTION 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use water spray, foam, dry chemical, or carbon dioxide (CO₂).

Unsuitable Extinguishing Media: Water jet.

Special Fire Fighting Procedures: Wear NIOSH/MSHA approved self-contained breathing apparatus and full bunker gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Avoid breathing vapors; keep upwind.

Hazardous Combustion Products: Toxic gases such as carbon monoxide and other asphyxiates may form.

Unusual Fire and Explosion Hazards: None known

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

Environmental Precautions: Keep spilled product from entering nearby sewers or waterways.

Methods for Containment: Contain spilled liquid by diking area with sand or earth.

Methods for Clean-up: Cover contained spill with an inert absorbent material such as sand, vermiculite or other appropriate material. Vacuum, scoop or sweep up material and place in a container for disposal. Do not place spilled material back in original container.

Other Information: Spills of this product may require reporting under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as the product contains Ferrous sulfate with a reportable quantity (RQ) of 1,000 lbs. See Section 15 for additional information.

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SECTION 7: HANDLING AND STORAGE

Handling: Ensure adequate ventilation. Immediately clean up spills that occur during handling. Keep containers closed when not in use. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Storage: Store in a locked, cool, dry area away from children, feed and food products in an area away from incompatible substances. Protect packaging from physical damage. Protect from exposure to fire. Maintain product between 40°F and 120°F.

Minimum Storage Temperature: 40°F

Other Precautions: Consult Federal, state and local laws and regulations pertaining to storage.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component:	OSHA PEL	ACGIH TLV	NIOSH REL
Manganese sulfate	5 mg/m ³ CEIL	0.1 mg/m ³ inhalable fraction 0.02 mg/m ³ respirable fraction	3 mg/m ³ STEL (fume) 1 mg/m ³ TWA (fume)
Ferrous sulfate		1 mg/m ³ TWA	1 mg/m ³ TWA

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear an OSHA/NIOSH-approved respirator for general particulates.

Engineering Controls: **Local Exhaust:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred.

Protective Gloves: Wear chemically protective gloves to prevent exposure to the skin.

Eye Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. Contact lenses are not eye protective devices. An emergency eyewash or water supply should be readily accessible to the work area.

Other Protective Clothing or Equipment: Wear long-sleeve shirt, long pants and shoes plus socks to prevent prolonged or repeated skin contact.

Work/Hygienic Practices: Never eat, drink, nor use tobacco in work areas. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Specific Gravity (H₂O=1):	1.325 – 1.330
Vapor Pressure (mm Hg):	Not determined	Density (lbs/gallon):	11.06 – 11.1 lbs/gal
Vapor Density (Air=1):	Not determined	Melting Point/Freezing Point:	Not determined
Solubility in Water (wt %):	100%	Boiling Point/Range:	Not determined
Viscosity:	Not determined	pH (1% Solution):	4.0 – 6.0
Appearance and odor:	Green to brown liquid with a faint sweet odor	Flash Point:	>200°F

SECTION 10: STABILITY AND REACTIVITY

Reactivity: None known.

Chemical Stability: Product is stable at ambient temperature and pressure, under normal storage and handling.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials.

Incompatible Materials: Strong oxidizing agents

Hazardous Decomposition Products: Toxic gases such as carbon monoxide and other asphyxiates may form.

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SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Eye Effects:	Causes serious but temporary irritation including redness, tearing, blurred vision and mild discomfort.
Skin Effects:	Estimated LD50 = 633 mg/kg (rat)
Acute Inhalation Effects:	LC50 is not determined. Based upon component data, this product is not anticipated to be acutely toxic via inhalation.
Acute Oral Effects:	Estimated LD50 = 2,449 mg/kg (dog). Swallowing can cause nausea and vomiting.
Specific Target Organ Toxicity:	Liver and lungs

CHRONIC TOXICITY

Chronic Effects:	Repeated exposure to ferrous sulfate can cause damage to the liver. Repeated exposure to manganese sulfate may cause damage to the lungs.
Carcinogenicity:	None of the components of this product are known or suspected of having carcinogenic effects.
Mutagenicity:	None of the components of this product are known or suspected of having mutagenic effects.
Teratogenicity:	None of the components of this product are known or suspected of having teratogenic effects.
Reproductive Toxicity:	None of the components of this product are known or suspected of having effects on the reproductive system.

POTENTIAL HEALTH EFFECTS:

Eyes:	Causes serious but temporary irritation to the eyes.
Skin:	Causes moderate skin irritation including redness and itching.
Inhalation:	May be harmful if inhaled.
Ingestion:	Harmful if swallowed. Ingestion may cause nausea and vomiting.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: Not determined

ECOTOXICITY DATA:

Fish Acute and Prolonged Toxicity:	Estimated 96 hr LC50 = 60 mg/L
Aquatic Invertebrate Acute Toxicity:	Estimated 48 hr EC50 (Daphnia) = 166 mg/L
Aquatic Plant Toxicity:	Not determined
Bird Acute and Prolonged Toxicity:	Not determined
Honeybee Toxicity:	Not determined

ENVIRONMENTAL EFFECTS:

Soil Absorption/Mobility:	Not determined
Persistence and degradability:	Not determined
Bioaccumulative Potential:	Not determined
Other adverse effects:	None known

SECTION 13: DISPOSAL CONSIDERATIONS

Waste: Dispose of in accordance with applicable Federal, state and local laws and regulations.
Container: Triple rinse and recycle the container or dispose of in accordance with Federal, state and local laws and regulations.
RCRA Characteristics: It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

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SECTION 14: TRANSPORT INFORMATION	
DOT: (Ground)	Not regulated by the U.S. Department of Transportation as a hazardous material in quantities less than 368 gallons. For quantities of 368 gallons or greater: UN3082, Environmentally hazardous substances, liquid, n.o.s. (ferrous sulfate),9,PGIII
IMDG: (Sea)	UN3082, Environmentally hazardous substances, liquid, n.o.s. (ferrous sulfate, manganese sulfate),9,PGIII, Marine Pollutant
IATA: (Air)	UN3082, Environmentally hazardous substances, liquid, n.o.s. (ferrous sulfate, manganese sulfate),9,PGIII
TDG: (Canada)	Not determined

SECTION 15: REGULATORY INFORMATION													
<p>TSCA Inventory: All components are listed on the TSCA inventory or are exempt from listing.</p> <p>SARA Title III Information:</p> <p style="margin-left: 20px;">Section 302 – Extremely hazardous substances: None listed</p> <p style="margin-left: 20px;">Section 311/312 – Hazard Categories: Immediate (Acute); Delayed (Chronic)</p> <p style="margin-left: 20px;">Section 313 – The following chemicals are subject to the reporting requirements of Section 313 of Title III, Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372: None listed</p>													
<p>CERCLA – This product contains the following chemicals which have a reportable quantity (RQ) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):</p> <p style="margin-left: 20px;">Ferrous sulfate has an RQ of 1,000 lbs which is met with 368 gallons of product.</p> <p style="margin-left: 20px;">Manganese compounds are considered CERCLA hazardous substances though no RQ is determined.</p>													
<p>California Proposition 65: This product contains no chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.</p>													
<p>U.S. State Worker and Community Right-To-Know (RTK) Information (CT, IL, MA, MN, NH, NJ, PA, RI):</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Chemical Name</th> <th style="text-align: left;">CAS #</th> <th style="text-align: left;">State(s)</th> </tr> </thead> <tbody> <tr> <td>Ferrous sulfate, monohydrate</td> <td>17375-41-6</td> <td>MA, NJ, RI</td> </tr> <tr> <td>Manganese sulfate, monohydrate</td> <td>10034-96-5</td> <td>NJ, RI</td> </tr> <tr> <td>Urea</td> <td>57-13-6</td> <td>MN</td> </tr> </tbody> </table>		Chemical Name	CAS #	State(s)	Ferrous sulfate, monohydrate	17375-41-6	MA, NJ, RI	Manganese sulfate, monohydrate	10034-96-5	NJ, RI	Urea	57-13-6	MN
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Urea	57-13-6	MN											
<p>Canadian Domestic Substances List: Not determined</p>													
<p>WHMIS Classification: This product is not approved for use in Canada. WHMIS classification is not determined.</p>													

SECTION 16: OTHER	
<p>Disclaimer: The information presented herein is based on available data from reliable sources and is correct to the best of WinField Solutions' knowledge. WinField Solutions, LLC makes no warranty, express nor implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.</p>	
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<p>Sections Revised: All</p>	