

**SAFETY DATA SHEET**

SDS NUMBER: 1000597776-14-LPI

SDS REVISIONS: NEW

DATE OF ISSUE: 07/30/2014

**SIGNATURE® IRON-MAN 12-0-0**

SUPERSEDES: NEW

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300****1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER****1.1 PRODUCT IDENTIFIER:****TRADE NAME:** SIGNATURE® IRON-MAN 12-0-0**1.2 RECOMMENDED USE:** LIQUID FERTILIZER**1.3 SUPPLIER DETAILS:**

LOVELAND PRODUCTS, INC.

P.O. BOX 1286• Greeley, CO 80632-1286

**1.4 24-Hour Emergency Phone:** 1-800-424-9300- **Medical Emergencies:** 1-866-944-8565**U.S. Coast Guard National Response Center:** 1-800-424-8802**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

Not classified

**2.2 Label elements****Signal word:** WARNING**Hazard Statements:** H313 – May be harmful in contact with skin.  
H333 – May be harmful if inhaled.  
H320 – Causes eye irritation  
H303 – May be harmful if swallowed**Precautionary Statement:**P261 – Avoid breathing dust / fume / gas / mist / vapors / spray  
P273 - Avoid release to the environment  
P280 - Wear protective gloves and eye / face protection**(Prevention):**  
**Precautionary Statement:**

P305 and P351 and P338 – IF IN EYES: Rinse with water for 15 to 20 minutes. Remove contact lenses, if present, and continue rinsing eyes.

**(Response):**

P302 and P352 – IF ON SKIN: Wash with plenty of water for 15 to 20 minutes

**Precautionary Statement:****(General):**

P101 and P102 and P103 – If medical advice is needed, have product container or label available. Keep out of reach of children. Read label before use

**2.3 Other hazards**

None known

**KEEP OUT OF REACH OF CHILDREN –**

Appearance and odor: Pale brown liquid with typical odor.

**WARNING – POSSIBLE SKIN IRRITATION – POSSIBLE EYE IRRITATION – POSSIBLE RESPIRATORY TRACT IRRITATION****Potential Health effects****Routes of exposure** Eye contact, skin contact, inhalation.**Eyes** May cause eye irritation.**Skin** May cause skin irritation.**Inhalation** May be irritating to respiratory system.**Ingestion** May be irritating to mouth, throat, and stomach.**Target organs** Skin. Eyes. Inhalation.**Signs and symptoms** May cause irritation to the eyes, skin, gastrointestinal tract, and respiratory system.**Potential environmental effects** This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have harmful or damaging effect on the environment.

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**3. COMPOSITION, INFORMATION ON INGREDIENTS****3.2 Mixtures**

Chemical Name:	CAS No.	Classification	Concentration [%]
Urea	57-13-6		26.09
Ferrous Sulfate	7720-78-7		30.00
Manganese Sulfate	7785-87-7		9.70
Citric Acid	77-92-9		trace
Water	7732-18-5		Balance

**4. FIRST AID MEASURES****4.1 Description of First Aid Measures**

General Advice : Get medical attention if symptoms occur.

- Eye contact:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Ingestion:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. 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.
- Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Inhalation:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

**4.2 Most Important Symptoms and Effects, Acute and Delayed**

Symptoms : Nausea and vomiting could be expected upon large dose ingestion. The acute ingestive effects are described as nausea, chills, and diarrhea. Eye or skin contact with these products could cause irritation (particularly in sensitive persons), and respiratory irritation could be expected from the unprotected inhalation of fertilizer dusts.

**4.3 Immediate Medical Attention and Special Treatment**Treatment : **FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.**  
Take container, label or product name with you when seeking medical attention.**NOTES TO PHYSICIAN:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.**5. FIRE FIGHTING MEASURES****5.1 EXTINGUISHING MEDIA:**

Suitable Extinguishing Media : Considered non-combustible, use medium appropriate to surrounding fire. Dry chemical, carbon dioxide, foam, water spray or fog.

**5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:**

Specific Hazards During Firefighting : May include but are not limited to oxides of carbon, hydrogen chloride, hydrogen fluoride, oxides of nitrogen, ammonia, oxides of phosphorus, oxides of sulfur, hydrogen sulfide.

**5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS**

Special Protective Equipment for Firefighters : Wear self-contained breathing apparatus and full protective gear. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire. Urea may decompose in a fire situation and release cyanuric acid, ammonia, hydrogen cyanide, oxides of nitrogen, and irritating particulates.

**6. ACCIDENTAL RELEASE MEASURES****6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

Personal Precautions: Avoid breathing mists.

**6.2 ENVIRONMENTAL PRECAUTIONS**

Environmental Precautions: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

**6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP**

Methods for Clean-Up: Absorb and sweep up liquid spills immediately and transfer to suitable containers for possible land application according to label use or for disposal. Check local, state and federal regulations for proper disposal.

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**7. HANDLING AND STORAGE**

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**7.1 PRECAUTIONS FOR SAFE HANDLING:**

Advice on Safe Handling:

Avoid inhalation of dusts, vapors / spray and contact with eyes, skin and clothing. Do not breathe dusts, mist or vapor. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

**7.2 CONDITIONS FOR SAFE STORAGE:**

Requirements for Storage Areas and Containers:

Store in a cool dry place away from children, feed and food products, and seed. Do not contaminate water, food, or feed by storage or disposal.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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**8.1 CONTROL PARAMETERS:**

Not normally required.

**8.2 EXPOSURE CONTROLS:****Engineering Measures**

Provide adequate ventilation

**Individual Protection Measures:**

Eye / Face Protection: Chemical goggles or shielded safety glasses.

Hand Protection: Wear rubber or chemical-resistant gloves.

Respiratory Protection: If vapors or dusts exceed acceptable levels, wear a MSHA/NIOSH approved pesticide respirator.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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- 9.1 APPEARANCE :** Liquid solution  
**COLOR:** Pale brown-colored  
**pH:** Not determined  
**MELTING POINT / FREEZING POINT:** Not applicable  
**BOILING POINT:** Not applicable  
**FLASH POINT:** Not applicable  
**FLAMMABILITY (solid, gas):** This product is not flammable.  
**UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:** Not applicable.  
**VAPOR PRESSURE:** Not applicable.  
**SOLUBILITY:** Appreciable  
**PARTITION CO-EFFICIENT, n-OCTANOL/WATER:** Not data available.  
**AUTO-IGNITION TEMPERATURE:** Not applicable.  
**DECOMPOSITION TEMPERATURE:** Not determined  
**VISCOSITY :** Not applicable  
**SPECIFIC GRAVITY (Water = 1):** 1.433 g/ml  
**BULK DENSITY:** 11.96 lbs/gal / 1.43 kg/L

Note: These physical data are typical values based on material tested but may vary from sample to sample.  
Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

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**10. STABILITY AND REACTIVITY**

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**10.1 REACTIVITY**

Stable

**10.2 CHEMICAL STABILITY**

No decomposition if used and stored as directed

**10.3 POSSIBILITY OF HAZARDOUS REACTIONS**

No reactions known under normal use conditions. Will not polymerize.

**10.4 CONDITIONS TO AVOID**

None known.

**10.5 INCOMPATIBLE MATERIALS**

None known.

**10.6 HAZARDOUS DECOMPOSITION PRODUCTS**

May decompose to release cyanuric acid, ammonia, HCN, NO.

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**11. TOXICOLOGICAL INFORMATION****11.1 LIKELY ROUTES OF EXPOSURE**

Inhalation, eye contact, skin contact

LC<sub>50</sub> (rat): No data available.LD<sub>50</sub> Oral (rat): 2150 mg/kg (Manganese Sulfate); 1480 mg/kg (Ferrous Sulfate)LD<sub>50</sub> Dermal (rat): No data available

Acute Toxicity Estimates: Acute oral toxicity: 14,300 mg/kg rat (Urea)

Skin Irritation (rabbit): No data available

Eye Irritation (rabbit): No data available

Specific Target Organ Toxicity: Single exposure: No data available.

Aspiration: No data available

Skin Sensitization (guinea pig): No data available

Carcinogenicity: None listed in OSHA, NTP, IARC or ACGIH

Germ Cell Mutagenicity: No data available

Interactive Effects: None known

**12. ECOLOGICAL INFORMATION****12.1 ECOTOXICITY**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Ecotoxicological Data**

Components	Species	Test Results
Urea (CAS: 57-13-6)		
<b>Aquatic</b>		
Fish	LC <sub>50</sub>	Tilapia mossambica 22,500 µ/L, 96 hours
Fish	LC <sub>50</sub>	Colisa fasciata 5,000 µ/L, 96 hours
Fish	LC <sub>50</sub>	Barillius barna > 9,100 mg/L, 96 hours
Invertebrates	EC <sub>50</sub>	Daphnia magna > 10,000 mg/L, 24hours

Drift or runoff may adversely affect non-target plants.

Do not apply directly to water.

Do not contaminate water when disposing of equipment wash water.

Do not apply when weather conditions favor drift from target area.

**12.2 PERSISTENCE AND DEGRADABILITY**

Biodegradability: The product is not readily biodegradable

**12.3 BIOACCUMULATIVE POTENTIAL**

Bioaccumulation: Not applicable

**12.4 MOBILITY IN SOIL**

Physical-chemical removability: Not applicable

**12.5 OTHER ADVERSE EFFECTS**

Assessment: No data available.

**13. DISPOSAL CONSIDERATIONS****13.1 WASTE TREATMENT METHODS**

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrecycle.org/>. Do not contaminate water, food or feed by storage or disposal.

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**14. TRANSPORT INFORMATION****14.1 LAND TRANSPORT**

DOT Shipping Description: NOT REGULATED BY USDOT

U.S. Surface Freight Classification: FERTILIZING COMPOUNDS (MANUFACTURED FERTILIZERS), NOI, LIQUID (NMFC 68140, SUB 6; CLASS 70)

**15. REGULATORY INFORMATION****15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS****NFPA & HMIS Hazard Ratings:**

NFPA

HMIS

1 Health	0 Least	1 Health
0 Flammability	1 Slight	0 Flammability
0 Instability	2 Moderate	0 Reactivity
	3 High	B PPE
	4 Severe	

**SARA Hazard Notification/Reporting**

SARA Title III Hazard Category: Immediate Y Fire N Sudden Release of Pressure N  
 Delayed N Reactive N

Reportable Quantity (RQ) under U.S. CERCLA: Not listed

SARA, Title III, Section 313: Not listed

RCRA Waste Code: Not listed

CA Proposition 65: WARNING: This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

**16. OTHER INFORMATION**

SDS STATUS: New

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.regulatory-info-lpi.com>

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