

**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® 24-4-8 WITH 3.5% IRON
- 1.2 **RECOMMENDED USE:** FERTILIZER FOR USE BY LANDSCAPE PROFESSIONALS
- 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**

**Classification according to 29 CFR 1910.1200**

Eye Damage/Irritation	Category 2B	H320
Skin Corrosion/Irritation	Category 2	H315
STOT SE	Category 3	H335

**2.2 Label elements**



Signal word:

WARNING

Hazard Statement: H320 – Causes eye irritation.  
H315 – Causes skin irritation.  
H335 – May cause respiratory irritation.

Precautionary Statement:

P261 – Avoid breathing dust / fume / gas / mist / vapors / spray  
P273 – Avoid release to the environment.

(Prevention):

P280 – Wear protective gloves and eye / face protection.

Precautionary Statement:

P337+P313 – If eye irritation persists: get medical attention

(Response):

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

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

Precautionary Statement:

(General):

P101+P102+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



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### 3. COMPOSITION, INFORMATION ON INGREDIENTS

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#### 3.1 Substances

Classification according to 29 CFR 1910.1200

#### 3.2 Mixtures

Chemical Name:	CAS No.	Concentration [%]
Sulfate of Potash	7778-80-5	0.1 – 17
Methylene Ureas	9011-05-6	0.1 – 45
Monoammonium Phosphate	7722-76-1	0.1 – 7.75
Ammonium Sulfate	7783-20-2	0.1 – 32
Iron Oxide	1309-37-1	0.1 – 3.5
Iron Oxysulfate	7782-63-0 and 7785-87-7	0.1 – 3.5
Manganese Oxide	1344-43-0	0.1 – 7.75
Manganese Oxysulfate	1344-43-0 and 7720-78-7	0.1 – 7.75

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### 4. FIRST AID MEASURES

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#### 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: Eye irritation.

#### 4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

**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.

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### 5. FIRE FIGHTING MEASURES

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#### 5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Foam, carbon dioxide (CO<sub>2</sub>), dry powder, water spray. Do not use water jet as this will spread the fire.

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

Specific Hazards During Firefighting: During a fire, oxides of carbon and silicon dioxide can be released.

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

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.



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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapors, dusts and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

### 6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers, or watercourses.

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

Methods for Clean-Up: Avoid breathing dusts. Sweep up dry 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. Never return spills to original containers for re-use.

## 7. HANDLING AND STORAGE

### 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 original container. Keep tightly closed. Do not reuse empty container. Do not contaminate water, food or feed by storage or disposal.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS:

#### OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (AIHA) WEELs – ACGIH – OSHA\*

Components	Type	Value
Particulates (PNOC**)	TWA	15 mg/m <sup>3</sup>

#### Biological limit values

##### ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

### 8.2 EXPOSURE CONTROLS:

#### Engineering Measures

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eyewash station and safety shower.

#### Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Chemical resistant clothing is recommended. Routinely wash work clothing and protective equipment to remove contaminants. The use of chemical-resistant gloves is recommended when handling undiluted product. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of dusts or vapors, use suitable respiratory equipment such as MSHA/NIOSH TC-21C or NIOSH approved respirator with N, R, P or HE filter. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.



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### 9. PHYSICAL AND CHEMICAL PROPERTIES

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9.1 APPEARANCE :	Granular solid
ODOR:	Dusty.
ODOR THRESHOLD:	No data available.
COLOR:	Multi-colored.
pH:	No data available.
MELTING POINT / FREEZING POINT:	No data available
BOILING POINT:	No data available
FLASH POINT:	No data available
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOR PRESSURE:	No data available.
SOLUBILITY:	Appreciable
PARTITION CO-EFFICIENT, n-OCTANOL / WATER:	No data available.
AUTO-IGNITION TEMPERATURE:	No data available.
DECOMPOSITION TEMPERATURE:	No data available
VISCOSITY, dynamic:	No data available
SPECIFIC GRAVITY (Water = 1):	0.64 g/ml – 1.121 g/ml
BULK DENSITY:	40 lbs./ft <sup>3</sup> – 70 lbs/ft <sup>3</sup> / 640 kg/m <sup>3</sup> – 1121 kg/m <sup>3</sup>

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

Stable under normal temperature conditions

#### 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 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.

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### 11. TOXICOLOGICAL INFORMATION

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#### 11.1 LIKELY ROUTES OF EXPOSURE

Eye contact, skin contact.

LC<sub>50</sub> (rat): No data available

LD<sub>50</sub> Oral (rat): > 5,000 mg/kg (Methylene Ureas); 6,600 mg/kg (Sulfate of Potash)

LD<sub>50</sub> Dermal (rat): No data available.

Acute Toxicity Estimates: No data available

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): Not a sensitizer

Carcinogenicity: No data available

Germ Cell Mutagenicity: No data available

Interactive Effects: None known



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## 12. ECOLOGICAL INFORMATION

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### 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. This product is not intended for use in aquatic settings.

#### Ecotoxicological Data

Components	Species	Test Results
	Fathead minnow	510 - 880 mg/L 96-hour LC <sub>50</sub>
	Daphnia Magna	890 mg/L 48-hour EC <sub>50</sub>

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: No data available

### 12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: No data available.

### 12.4 MOBILITY IN SOIL

No data available.

### 12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

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## 13. DISPOSAL CONSIDERATIONS

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### 13.1 WASTE TREATMENT METHODS

Do not reuse empty bag. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Do not contaminate water, food or feed by storage or disposal.

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## 14. TRANSPORT INFORMATION

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### 14.1 LAND TRANSPORT

DOT Shipping Description: NOT REGULATED.

U.S. Surface Freight Classification: FERTILIZING COMPOUNDS (MANUFACTURED FERTILIZERS), NOI, DRY (NMFC 68140, SUB 5; CLASS 50)



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**15. REGULATORY INFORMATION**

**15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS**

<b>NFPA &amp; HMIS Hazard Ratings:</b>	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:** No listings  
**SARA, Title III, Section 313:** No listings  
**RCRA Waste Code:** Not listed  
**CA Proposition 65: WARNING:** This product contains chemicals known to the State of California to cause cancer of birth defects or other reproductive harm.

**16. OTHER INFORMATION**

**SDS STATUS:** All sections reviewed; change in format  
**PREPARED BY:** Registrations and Regulatory Affairs **REVIEWED BY:** Environmental Health and Safety  
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