

**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:** REAX™ MANGANESE 4-0-0 C<sup>2</sup>

**1.2 RECOMMENDED USE:** CROP NUTRIENT SOLUTION

**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 – **Product Information:** 1-888-574-2878 (LPI-CUST)  
**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
Acute Toxicity/Oral	Category 4	H302

**2.2 Label elements**



Signal word: WARNING  
Hazard Statement: H320 – Causes eye irritation.  
H302 – Harmful if swallowed.  
H313 – May be harmful in contact with skin.

Precautionary Statement: P264 – Wash hands and face thoroughly after handling.  
(Prevention): P280 – Wear protective gloves/protective clothing/eye protection/face protection.  
P270 – Do not eat, drink, or smoke when using this product.

Precautionary Statement: P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.  
(Response): P337+P313: If eye irritation persists: Get medical advice/attention.  
P301+P312: IF SWALLOWED: Call a poison center or doctor/physician if you feel unwell.  
P330 – Rinse mouth.

Precautionary Statement: (Storage): Not applicable.

Precautionary Statement: (Disposal): Dispose of contents/container at an approved waste disposal facility.

**2.3 Other hazards**

None known.



## SAFETY DATA SHEET

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### 3. COMPOSITION, INFORMATION ON INGREDIENTS

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#### 3.1 Substances

#### 3.2 Mixtures

##### Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Concentration [%]
Anhydrous Ammonia	7664-41-7	15 – 35
Manganese Sulfate	7785-87-7	15 – 35
Manganese (II) Oxide	1344-43-0	≤ 2.5
Leonardite	1415-93-6	5 – 10
Gluconic Acid	526-95-4	Trace
Water	7732-18-5	25 – 50

Ingredients not precisely identified are proprietary or non-hazardous.

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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.

<b>Eye contact:</b>	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.
<b>Skin contact:</b>	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.
<b>Ingestion:</b>	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.
<b>Inhalation:</b>	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.

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

Symptoms: Ingestion: Harmful if swallowed.  
Eyes: Causes eye irritation.  
Skin: May be harmful in contact with skin.

#### 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.



**SAFETY DATA SHEET**

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**5. FIRE FIGHTING MEASURES**

**5.1 EXTINGUISHING MEDIA:**

Suitable Extinguishing Media: Dry chemical, carbon dioxide (CO<sub>2</sub>), alcohol foam, foam, water spray or fog. 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, hazardous by-products can be released, including oxides of carbon, oxides of sulfur, ammonia, silicon, sodium, and oxides of nitrogen.

**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.

**6. ACCIDENTAL RELEASE MEASURES**

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

Personal Precautions: Avoid inhalation of vapors 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: Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.  
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to Remove residual contamination.  
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 mists, vapors / spray and contact with eyes, skin and clothing. Do not breathe mists 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 above 40 °F (4.4 °C). Store in original containers only. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. Store in a cool, dry, well-ventilated place, preferably in a locked storage area away from children, feed and food products, and seed. 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 (ACGIH) TLVs**

Components	Type	Value
Ammonia	TWA	17 mg/m <sup>3</sup>
	STEL/CEIL (C)	24 mg/m <sup>3</sup>
Manganese compounds	TWA	0.02 mg/m <sup>3</sup> (resp.)

**U.S. Workplace Exposure Level (OSHA) PELs**

Components	Type	Value
Ammonia	TWA	35 mg/m <sup>3</sup>
Manganese compounds	STEL/CEIL (C)	5 mg/m <sup>3</sup>

**Biological limit values**

**ACGIH Biological Exposure Indices**

Components	Value	Specimen
No listings		



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### 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: Coveralls worn over long-sleeved shirt and long pants. Chemical-resistant gloves. Chemical-resistant footwear plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment such as MSHA/NIOSH approved respirator with approved 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:	Liquid
ODOR:	Odorless.
ODOR THRESHOLD:	No data available.
COLOR:	Black.
pH:	8.9 (neat)
MELTING POINT / FREEZING POINT:	No data available
BOILING POINT:	> 212°F (> 100 °C)
FLASH POINT:	Does not flash.
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOR PRESSURE:	23 hPa (17 mm Hg).
SOLUBILITY:	Soluble
PARTITION CO-EFFICIENT, n-OCTANOL / WATER:	No data available.
AUTO-IGNITION TEMPERATURE:	No data available.
DECOMPOSITION TEMPERATURE:	No data available.
VISCOSITY:	No data available.
SPECIFIC GRAVITY (Water = 1):	1.3 g/ml
BULK DENSITY:	11.0 lbs./gal / 1.3 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

Stable under normal temperature conditions

### 10.3 POSSIBILITY OF HAZARDOUS REACTIONS

Will not polymerize.

### 10.4 CONDITIONS TO AVOID

Storage, piping, or handling systems made of brass, copper and galvanized metals may be subject to mild corrosion from prolonged or repeated contact with this product.

### 10.5 INCOMPATIBLE MATERIALS

None known.

### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include but are not limited to oxides of carbon, oxides of sulfur, ammonia, sodium, sulfur, zinc, and oxides of nitrogen.



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## 11 TOXICOLOGICAL INFORMATION

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### 11.3 LIKELY ROUTES OF EXPOSURE

Eye contact. Skin contact. Ingestion.

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

**LD<sub>50</sub> Oral (rat):** 35 mg/kg (Ammonia); 2,150 mg/kg (Manganese Sulfate)

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

**Acute Toxicity Estimates:** No data available.

**Skin Irritation (rabbit):** No data available.

**Eye Irritation (rabbit):** Causes eye irritation.

**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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### 12.3 ECOTOXICITY

Avoid spills or release to watercourses. 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

	Species	Test Results
Manganese (II) Oxide	Daphnia magna	> 4 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

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

#### 14.3 LAND TRANSPORT

DOT Shipping Description: NOT REGULATED

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	<u>Y</u>	Fire	<u>N</u>	Sudden Release of Pressure	<u>N</u>
	Delayed	<u>N</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Ammonia (CAS: 7664-41-7) 100 lbs.; Manganese Compounds (see 50 FR 13456, April 4, 1985)

SARA, Title III, Section 313: Ammonia (CAS: 7664-41-7); Manganese Compounds (N450)

RCRA Waste Code: Not listed

CA Proposition 65: Not applicable.

### 16 OTHER INFORMATION

SDS STATUS: New

PREPARED BY: Product Stewardship and Regulatory Affairs

REVIEWED BY: Safety, Health and Environment

ReaX is a trademark of Loveland Products, Inc.

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