

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/05/2015

Reviewed on 05/05/2015

*** 1 Identification****· Product identifier****· Trade name: 4% Manganese****· Relevant identified uses of the substance or mixture and uses advised against**

For agricultural use only. Not for human or animal consumption.

· Product description

A commercial agricultural product used to improve soil and/or plant health and for improved growth.

NPK Values: 4 - 0 - 0 ; 4% Manganese, 2.5% Sulfur

· Details of the supplier of the safety data sheet**· Manufacturer/Supplier:**

Actagro, LLC

677 W. Palmdon Dr. #108

Fresno, CA 93704

Phone: (559) 369-2222

Fax: (559) 843-2845

· Emergency telephone number: INFOTRAC: (800) 535-5053*** 2 Hazard(s) identification****2.1 Classification of the substance or mixture****Classification according to 29 CFR 1910.1200**

Eye Irritation

Category 2B

H320

Acute Toxicity (Oral)

Category 5

H302

2.2 Label elements

Signal word:

WARNING

Hazard Statement:

H320 – Causes eye irritation.

H313 – May be harmful in contact with skin.

H302 – Harmful if swallowed

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

KEEP OUT OF REACH OF CHILDREN –

Appearance and odor: Black liquid with slight ammonia odor.

WARNING – CATEGORY 2B CAUSES EYE IRRITATION, CATEGORY 5 MAY BE HARMFUL IN CONTACT WITH SKIN, CATEGORY 5 HARMFUL IF SWALLOWED**Potential Health effects**

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Routes of exposure	Eye contact, skin contact, inhalation. Avoid breathing spray mist.
Eyes	Causes eye irritation.
Skin	Can cause skin irritation.
Inhalation	May be irritating to respiratory system.
Ingestion	May be irritating to mouth, throat, and stomach.
Target organs	Eyes. Skin. Inhalation.
Signs and symptoms	May be harmful if swallowed, absorbed through skin or inhaled.
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.

- **Hazard(s) not otherwise classified (HNOC):** None known

* 3 Composition/information on ingredients

CAS: 7732-18-5 RTECS: ZC 0110000	water, distilled, conductivity or of similar purity	25-50%
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- **Chemical characterization: Mixtures**

- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous Components:**

3012-65-5	Ammonium Citrate dibasic ⚠ Eye Irrit. 2A, H319; STOT SE 3, H335	15-35%
7785-87-7	Manganese Sulphate ⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 2, H411	15-35%
1415-93-6	Leonardite ⚠ STOT SE 3, H335; Eye Irrit. 2B, H320; Combustible Dust	5-10%
1344-43-0	Manganese(II) oxide ⚠ Acute Tox. 4, H332	≤ 2.5%

* 4 First-aid measures

- **Description of first aid measures**

- **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist. In case of unconsciousness, place patient securely on side position for transportation.

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· **After skin contact:**

Generally the product does not irritate the skin.

Wash with soap and water.

If skin irritation occurs, consult a doctor.

· **After eye contact:**

Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Consume large amounts of water. If symptoms persist, consult a physician.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

* 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Special hazards arising from the substance or mixture**

If incinerated, product will release the following toxic fumes: Oxides of Carbon, Manganese, Nitrogen (NOx), Silicon, Sodium and Sulfur, and Ammonia.

· **Advice for firefighters**

· **Protective equipment:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

* 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Material can create slippery conditions.

· **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (ie. sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

Dispose of the collected material according to regulations.

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

* 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.

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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 containers tightly closed when not in use. Store in a cool, dry well-ventilated area, 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

· **Additional information about design of technical systems:** No further data; see section 7.

· Control parameters

All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

· Components with occupational exposure limits:

1344-43-0 Manganese(II) oxide

PEL	Short-term value: 5 mg/m ³
TLV	Short-term value: 0.2 mg/m ³
TWA	Short-term value: 0.2 mg/m ³ Long-term value: 1 mg/m ³

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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Trade name: 4% Manganese**9 Physical and chemical properties****· Information on basic physical and chemical properties****· General Information****· Appearance:****Form:** Liquid**Color:** Black**· Odor:** Odorless**· Odor threshold:** Not determined.**· pH-value @ 20 °C (68 °F):** 8.9**· Change in condition****Melting point/Melting range:** Not determined.**Boiling point/Boiling range:** 100 °C (212 °F)**· Flash point:** Not applicable.**· Flammability (solid, gaseous):** Not applicable.**· Ignition temperature:****Decomposition temperature:** Not determined.**· Auto igniting:** Product is not self-igniting.**· Danger of explosion:** Product does not present an explosion hazard.**· Explosion limits:****Lower:** 0.0 Vol %**Upper:** 0.0 Vol %**· Vapor pressure @ 20 °C (68 °F):** 23 hPa (17 mm Hg)**· Density @ 20 °C (68 °F):** 1.319 g/cm³ (11.007 lbs/gal)**· Relative density** Not determined.**· Vapor density** Not determined.**· Evaporation rate** Not determined.**· Solubility in / Miscibility with****Water:** Soluble.**· Partition coefficient (n-octanol/water):** Not determined.**· Viscosity:****Dynamic:** Not determined.**Kinematic:** Not determined.**· Solvent content:****Organic solvents:** 0.0 %**Water:** 33.0 %**· Other information** No further relevant information available.

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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

None known.

*** 11 Toxicological information****11.1 LIKELY ROUTES OF EXPOSURE**

Eye contact, skin contact.

LC₅₀ (rat): No data available**LD₅₀ Oral (rat):** 35 mg/m³ (Ammonia); 2,150 mg/kg (Manganese Sulfate)**LD₅₀ 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*** 12 Ecological information****· Toxicity****· Aquatic toxicity:**

Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

1344-43-0 Manganese(II) oxide

EC50 >1.3 mg/l (Green algae)

>4 mg/l (daphnia)

· Persistence and degradability No further relevant information available.**· Behavior in environmental systems:****· Bioaccumulative potential** No further relevant information available.**· Mobility in soil** No further relevant information available.**· Ecotoxicological effects:****· Remark:** Harmful to fish**· Additional ecological information:****· Results of PBT and vPvB assessment****· PBT:** Not applicable.**· vPvB:** Not applicable.**· Other adverse effects** No further relevant information available.

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* 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packagings:**

· **Recommendation:**

Dispose of as unused product.
Disposal must be made according to official regulations.

* 14 Transport information

14.1 LAND TRANSPORT

DOT Shipping Description: NOT REGULATED.

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

* 15 Regulatory information

16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of preparation / last revision** 05/05/2015 / -

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Acute Tox. 4: Acute toxicity, Hazard Category 4
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3