

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY**Product Name: **Roots Agriplex**Recommended use

This product is a concentrated liquid fertilizer for landscape use.

Supplier/Manufacturer

Lebanon Seaboard Corporation
1600 East Cumberland Street
Lebanon PA 17042
Tel: 800-233-0628
(717-273-1685)

Supplier Email: customerservice@lebsea.comEmergency telephone numbers

Chemtrec (Spill) 1-800-424-9300

Prosar (Health) 888-208-1368

2. HAZARDS IDENTIFICATION

Signal Word: Warning

Hazard Statements:

H302: Harmful if swallowed (Category 4)

H373: May cause damage to organs through prolonged or repeated exposure. (Category 2)

H319: Causes serious eye irritation. (Category 2A)

H361: Suspected of damaging (male) fertility via significant ingestion. (Category 2)

May irritate the digestive tract if ingested in quantity.

Keep out of reach of children.



Precautionary Statements for handling: See also Section 7.

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P260: Do not breathe mist, vapors, or spray.

P264: Wash hands and exposed skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P281: Use personal protective equipment as required.

P301, P310, P330: IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

P308: If exposed or concerned, seek medical advice.

P314: Get medical advice/attention if you feel unwell.

P351, P337: If in eyes: rinse cautiously with water for several minutes. If eye irritation occurs and persists: seek medical attention.

P391: Collect spillage for proper use or disposal.

P405: Store locked up.

Precautionary Statements for disposal - Dispose in accordance with all federal, state and local regulations.

Hazards not otherwise classified (HNOC): None

Unknown acute toxicity <1% of the mixture consists of ingredients of unknown toxicity

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight %
Magnesium sulfate	10034-99-8	17.5
Citric acid (neutralized in process)	77-92-9	14
Potassium hydroxide (neutralized in process)	1310-58-3	8
Iron powder	7439-89-6	6.8
Phosphoric acid (neutralized in process)	7664-38-2	6
Manganese sulfate	7785-87-7	3.7
Zinc sulfate monohydrate	7746-19-7	1.65
Tetrapotassium pyrophosphate	7320-34-5	0.46
Sodium tetraborate pentahydrate	12179-04-3	0.12
2-Bromo-2-nitro-1,3-propanediol (Bromopol)	52-51-7	0.056
Diiodomethyl-p-tolylsulfone (preservative)	20018-9-1	0.036
Propylene glycol	8061-52-7	0.023
Magnesium nitrate	10377-60-3	0.02
Nipacide (4-chloro-3,5-xyleneol)	88-04-0	0.003
5-Chloro-2-methyl-4-Isothiazolin-3-one	26172-55-4	0.001
Calcium lignosulfonate	8061-52-7	0.001
Polyakylene glycol	9003-11-6	0.001
Magnesium chloride	7786-30-3	0.0006
2-Methyl-4-isothiazolin-3-one	2682-20-4	0.0004
Tris	126-11-4	0.0003
Copper Nitrate trihydrate	10031-43-3	0.0002
Water	7732-18-5	Balance

4. FIRST AID MEASURES

Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash with soap and water. If injury occurs, or if discomfort or irritation persists contact a physician.
Inhalation	If inhaled and discomfort occurs, move to fresh air, and keep person at rest in a position comfortable for breathing. If difficulty in breathing occurs and/or persists, administer oxygen and get medical attention. If medical advice is needed, have product container or label on hand.
Ingestion	Rinse mouth. Drink Plenty of water. Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting of an unconscious person.

Self-protection of the first aider: When spraying, use dust/mist mask or any appropriate personal protective equipment as required.

Most important symptoms and effects, both acute and delayed:

Symptoms: Mist inhalation can result in irritation with nasal discomfort; skin irritation possible, but not likely with normal use. Chronic overexposure to manganese compounds may result in CNS effects such as weakness, sleepiness, emotional instability and spastic gait. These effects can be permanent. Chronic overexposure to manganese can cause "manganism," characterized by fatigue, irritability, headaches and asthenia. Symptoms are reversible when exposure stops. When later

changes occur, some permanent brain damage can result resembling Parkinson's disease. High or repeated exposures may damage the kidneys or liver.

Indication of any immediate medical attention and special treatment needed: Treat Symptoms.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media

Liquid product is not a fire hazard, and will not burn. Use extinguishing media suitable to local circumstances and the surrounding environment. Options in this case include water, CO₂, ABC Dry Chemical extinguisher, or foam.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire, do not breathe fumes.

Explosion data

Sensitivity to mechanical impact: None
 Sensitivity to static discharge: None

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and standard protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

- Personal Precautions Use reasonable personal protective equipment as required to prevent contact with eyes or skin, and to avoid breathing mist.
- Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.
- Methods for containment Prevent further leakage or spillage, if safe to do so.
- Methods for clean-up Use reasonable personal protective equipment as required. Soak up excess with inert absorbent material, or take up mechanically, placing in appropriate containers for disposal. Avoid creating mist. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

- Safe Handling Use personal protective equipment during use as required to prevent contact with eyes or skin, and to avoid breathing mist. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.
- Storage Conditions Keep containers tightly closed in a cool, well- ventilated place. Store locked up.Keep out of the reach of children.
- Incompatible materials Avoid strong acids or alkali, or other reactive substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
Manganese sulfate (7785-87-7)	0.2 mg/m ³ TWA (Mn)	1 mg/m ³ TWA (Mn fume) 5 mg/m ³ Ceiling (Mn)	500 mg/m ³ (Mn)

Engineering controls: Avoid creating fine, inhalable mists during application.

Individual protection measures: Wear protective gloves/protective clothing/eye protection/face protection.

Eye protection	Safety glasses, or goggles if eye contact with concentrated product or diluted mist is likely.
Skin and Body Protection	Gloves and normal work coveralls recommended.
Respiratory Protection	Dust/mist mask recommended for misty conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene	When using product, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Aqueous Liquid
Appearance	Solution
Color	Mixed, various
Odor	Slight
Odor Threshold	No information available
pH	6.5
Melting point/freezing point	No information available
Boiling point / boiling range	No information available
Flash point	Not applicable
Evaporation rate	No information available
Flammability (solid, gas)	Will not burn
Flammability Limit in Air	
Upper flammability limit:	Will not burn
Lower flammability limit:	Will not burn
Vapor pressure	Similar to water
Vapor density	No information available
Specific Gravity	1.38 g/cc
Water solubility	Fully soluble in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	Will not burn
Decomposition temperature	No information available
Oxidizing properties	No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable.

Possibility of Hazardous Reactions

May release heat and fumes when mixed in solution with incompatible reactive materials.

Hazardous polymerization

Will not occur.

Conditions to avoid

None known

Incompatible materials

Strong acids or alkali, or other reactive substances.

Hazardous Decomposition Products

May emit toxic fumes under fire conditions, such as Nitrogen oxides (NOx), Ammonia, Oxides of sulfur, Hydrogen chloride and Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Routes of exposure: Ingestion, eyes (contact), skin (contact), mist inhalation

Symptoms	May irritate the digestive tract if ingested in quantity, causing nausea, vomiting and diarrhea. Chronic overexposure to manganese compounds may result in CNS effects such as weakness, sleepiness, emotional instability and spastic gait. These effects can be permanent. Chronic overexposure to manganese can cause "manganism", characterized by fatigue, irritability, headaches and asthenia. Symptoms are reversible when exposure stops. When later changes occur, some permanent brain damage can result resembling Parkinson's disease. High or repeated exposures may damage the kidneys or liver.
Sensitization	No information available.
Germ cell mutagenicity	No information available
Carcinogenicity	No carcinogenic substance is present at reportable levels.
Reproductive toxicity	Reproductive toxicity - mouse - male - Oral: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). (Manganese compounds). Men exposed to manganese dusts showed a decrease in fertility.
STOT - single exposure	No information available
STOT - repeated exposure	No information available
Chronic toxicity	See above under "Symptoms"
Target Organ Effects	Nervous system, brain, liver, kidneys, testes.
Aspiration hazard	No information available
Other:	High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds. Prolonged or repeated inhalation may cause: Pneumonia.

12. ECOLOGICAL INFORMATION

Fertilizers may be harmful to aquatic life with short term effects, causing algal bloom and increased BOD, depending on the amount released. Avoid uncontrolled/unintended release to the environment.

Persistence and degradability	No information available
Bioaccumulation	No information available
Other adverse effects	No information available

13. DISPOSAL CONSIDERATIONS

This material, as supplied is not a hazardous waste according to federal regulations (40 CFR 261).

Disposal of wastes:

This product is a non-hazardous waste material suitable for approved solid waste landfills.

No EPA Waste Numbers are applicable for this product's components.
 Dispose of in accordance with Local, State, and Federal regulations.

Contaminated packaging

No US Federal special packaging considerations at the date of this document. Follow local regulations.

14. TRANSPORT INFORMATION

DOT:	Not Regulated	ADR:	Not Regulated
Proper Shipping Name:	Non Regulated	ADN:	Not Regulated
Hazard Class:	Not Applicable	RID:	Not Regulated
IATA:	Not Regulated	IATA:	Not Regulated
Proper Shipping Name:	Non Regulated	TDG:	Not Regulated
Hazard Class:	Not Applicable	ICAO:	Not Regulated
IMDG/IMO	Not Regulated	MEX:	Not Regulated
Hazard Class	Not Applicable		
Marine Pollutant	No		

This product is not a hazardous material and is not regulated by the United States Department of Transportation (D.O.T).

IMDG: Not a dangerous good.
ICAO/IATA: Not a dangerous good.

15. REGULATORY INFORMATION

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4):

Manganese sulfate (7785-87-7) SARA 313:

- 1% *de minimis* concentration (related to Manganese)

Clean Air Act: No information is available.
Clean Water Act: No information is available.

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS#	CA	MA	MN	NJ	PA	RI
Manganese Sulfate (related to Mn) ¹	7785-87-7	Yes ¹	Yes ¹	Yes ¹	Yes ¹	Yes ¹	Yes ¹

Other state regulations may apply. Check individual state requirements.

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS#	Minimum Concentration
Manganese Sulfate (related to Mn) ¹	7785-87-7	1% (related to elemental manganese, Mn)

Component Related Regulatory Information :

This product may be regulated, have exposure limits or other information identified as the following: Manganese (7439-96-5), Manganese compounds, n.o.s., Manganese compounds, inorganic, Manganese inorganic salts.

16. OTHER INFORMATION

Disclaimer

The information provided in this material safety data sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.