

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY**

Product Name: **Roots Iron Roots Concentrate 0-2-4**

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
(717-273-0685)

Supplier Email: customerservice@lebsea.com

Emergency telephone numbers:

Chemtrec (Spill) 1-800-424-9300

Prosar (Health) 888-208-1368

2. HAZARDS IDENTIFICATION

Signal Word: Warning

Pictogram: Exclamation Point

**Hazard Statements:**

H302: Harmful if swallowed. (Category 4)
H317: May cause an allergic skin reaction.
H341: Suspected of causing genetic defects
May irritate the digestive tract if ingested.
Keep out of reach of children.

Precautionary Statements:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P261: Avoid breathing mist/vapors/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P281: Use personal protective equipment as required.
P301, P330: IF SWALLOWED: Rinse mouth, and Call a POISON CENTER or doctor/physician if you feel unwell.
P308: If exposed or concerned, seek medical advice/attention.
P352: Wash skin with plenty of soap and water.
P405: Store locked up.

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

Hazards not otherwise classified (HNOC):

Note: Preservatives used in this product are not appropriate for human consumption. Although present in low concentrations, they are potent as microbial growth inhibitors, and should not be ingested. When evaluating hazards, it is advisable to consider the combined total of all preservatives, as well as their individual levels and effects.

Unknown acute toxicity

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS#	%
Ascorbic Acid (Vitamin C)	50-81-7	1 - 5
Potassium sorbate	24634-61-5	0.3 - 0.5
1,2-Benzisothiazolin-3-one	2634-33-5	0.08
2-Bromo-2-nitro-1,3-propanediol (Bromopol)	52-51-7	0.04
Diiodomethyl-p-tolylsulfone	20018-9-1	0.03
4-chloro-3,5-xlenol (Nipacide)	88-04-0	0.01
5-Chloro-2-methyl-4-Isothiazolin-3-one	26172-55-4	0.0011
2-Methyl-4-isothiazolin-3-one	2682-20-4	0.0005
Nonhazardous or minimal ingredients	Various	Balance

Final mixture is pH adjusted.

Sum of Preservatives content: 0.55%

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. If discomfort occurs, seek medical attention. 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.

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. 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
Iron Salts, Soluble (as Fe)	1 mg/m ³ TWA	None established	1 mg/m ³ TWA
Aerosol mist, nontoxic	5 mg/m ³ TWA	5 mg/m ³ TWA	5 mg/m ³ TWA 10 mg/m ³ STEL

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

Individual protection measures

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	1.318 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.

Sensitization	None at reportable levels.
Germ cell mutagenicity	Potassium Sorbate induced chromosome aberrations in cultured Chinese hamster cells.
Carcinogenicity	Not carcinogenic.
Reproductive toxicity	No information available
STOT - single exposure	No information available
STOT - repeated exposure	No information available
Chronic toxicity	No information available
Target Organ Effects	No information available
Aspiration hazard	No information available

12. ECOLOGICAL INFORMATION

Fertilizers may be harmful to aquatic life with short term effects, causing algal bloom and increased BOD (biological oxygen demand), depending on the amount released.

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 Description: Liquid fertilizer, N.O.S.

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

General Product Information:	This product is not federally regulated as a hazardous material.
Clean Air Act:	No information is available.
Clean Water Act:	No information is available.
State Regulations – General:	This product is not regulated by any State as a hazardous material.
Component Analysis – State	Iron citrate: NJ, PA.

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.