

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

Product Name: **Roots Fertilizer for Trees 27-9-9; Roots PHC for Trees 27-9-9**

Recommended use:

This product is a mixed water dispersible tree fertilizer.

Supplier/Manufacturer

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

Emergency telephone numbers:

- Chemtrec (Spill) 1-800-424-9300
- Prosar (Health) 888-208-1368

2. HAZARDS IDENTIFICATION

Signal Word: Warning

Hazard Category: Oxidizing Solid, Category 3.

Hazard Statements and Category

H272: Contains an oxidizer. May intensify fire. (Category 3)

H302: Harmful if swallowed. (Category 4)

H315: Causes skin irritation. (Category 2)

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

H335: May cause respiratory irritation.



Precautionary Statements

P210, P220: Keep away from heat/sparks/open flame/hot surfaces, from clothing, and from other combustible materials. No smoking.

P221: Take precautions to avoid mixing with combustibles.

P261: Avoid breathing dust.

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.

P283: Wear fire/flame resistant/retardant clothing.

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

P304, P340: IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305, P351, P338, P337, P313: If in eyes: 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.

P332, P313: If skin irritation occurs: Get medical advice/attention.

P371, P380: In case of major fire involving large quantities, evacuate area.

P378: Use extinguishing media suitable to local circumstances and the surrounding environment. Options include water spray, dry chemical, carbon dioxide, Halon, or fog.

Keep out of reach of children.

Precautionary Statements for disposal - Dispose in accordance with all federal, state and local regulations. See Section 13.

Hazards not otherwise classified (HNOC): The bacteria contained in this product are strains of typically harmless soil and water bacteria, and are not associated with disease or infections under normal circumstances (Biosafety Level 1). However, reasonable precautions are in order. Handle as you would rich, dark soil or compost: keep it out of your mouth, eyes, lungs, and broken skin. Wash hands thoroughly after use. Remove and launder heavily soiled clothing separately before reuse. Persons with severely suppressed immune systems, such as those with advanced AIDS, or those taking anti-rejection drugs, or those undergoing chemotherapy should contact their physician before handling ordinary microbial products.

Unknown acute toxicity: 3% of the mixture consists of ingredients of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight %
Urea	57-13-6	25 - 30
Potassium Nitrate	7757-79-1	5 - 10
RZ3 Surfactant (Alkoxyated Glucopyranoside)	Trade Secret	1 - 5
Iron EDTA	15708-41-5	1
Manganese EDTA	15735-84-5	0.1 - 0.5
Copper EDTA	14025-15-1	0.1 - 0.5
Zinc EDTA	14025-21-9	0.1 - 0.5
Boric Acid	10043-35-3	0.15
Precipitated silica	7631-86-9	0.06
Ammonium Molybdate	12027-67-7	0.0015
Bacteria*	68038-70-0	20 million cfu/g
Nonhazardous fertilizers and fillers	Various	Balance

*Bacteria is present on a carrier of maltodextrin. Bacteria mass is too insignificant to express as percent weight.

4. FIRST AID MEASURES

- Eye Contact Rinse eyes cautiously with water for several minutes. Remove any contact lenses if easy to do, and continue rinsing. If discomfort or irritation persists contact a physician.
- Skin Contact Wash with soap and water. If injury occurs, or if discomfort or irritation persists or rash occurs, 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 IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting of an unconscious person.

Self-protection of the first aider: Use any appropriate personal protective equipment as required for nuisance dusts.

Most important symptoms and effects, both acute and delayed: Nuisance dust irritation may occur with nasal discomfort under highly dusty conditions.

Indication of any immediate medical attention and special treatment needed: Treat Symptoms. Consult physician if discomfort or irritation persists. Get medical advice or attention if you feel unwell.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing media suitable to local circumstances and the surrounding environment. Options in this case include water spray, CO₂, ABC Dry Chemical extinguisher, or fog. Avoid stirring up dust with extinguisher stream. This oxidizing material can increase the flammability of adjacent combustible materials.

Specific hazards arising from the chemical

Contains an oxidizer. Will increase intensity of fire. This oxidizing material can increase the flammability of adjacent combustible materials. 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

Note: Excessive amounts of any burnable dusts can produce explosive mixtures if allowed to disperse in the air in confined areas where ignition sources occur. Prevent excessive dust dispersal in areas of use, storage, or production.

Potassium nitrate is an NFPA Class 1 oxidizer:

- Slightly increases the burning rate of combustible materials.
- Does not cause spontaneous ignition when in contact with combustible materials.

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 (bunker) gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Personal Precautions	Use dust mask and gloves as needed or other reasonable personal protective equipment as required to prevent contact with eyes or skin. Remove ignition sources prior to clean-up.
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 dust mask and/or reasonable personal protective equipment as required to avoid breathing dusts. Moisten or cover powder spill with plastic sheet or tarp to minimize spreading. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Soak up excess with inert absorbent material. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Safe Handling	Read and understand all safety precautions before handling. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required to avoid breathing product dusts or mists, and to prevent eye contact. Wash hands thoroughly after handling.
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 IDLH*
Iron salts, soluble, as Fe	1 mg/m ³	Not Established	Not Established
Boric Acid	2 mg/m ³ TLV 6 mg/m ³ Ceil	Not Established	Not Established
Nuisance Dusts	10 mg/m ³ (TWA- Total dust)	15 mg/m ³ (TWA total) 50 mppcf (TWA total) 5 mppcf (TWA respirable)	Not Established

*IDLH refers to amounts that are "Immediately Dangerous to Life or Health"

Engineering controls: Use with adequate ventilation and follow safe work practices to prevent dust buildup in air.

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

Eye protection	Safety glasses, or goggles if eye contact is likely.
Skin and Body Protection	Gloves and fire/flame resistant/retardant clothing.
Respiratory Protection	Dust mask recommended for dusty or 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	Solid
Appearance	Coarse powder
Color	Mixed, various with blue powder
Odor	Slight
Odor Threshold	No information available
pH	Not applicable
Melting point/freezing point	Not applicable
Boiling point / boiling range	Not applicable
Flash point	No information available
Evaporation rate	Not applicable
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	Not applicable
Vapor density	Not applicable
Bulk Density	Approx. 0.9 g/cc (56.2 Lb per cu ft.)
Water solubility	Mostly soluble in water, but 36% will not dissolve.
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Oxidizing properties	Contains an oxidizer @ 5 - 10% of dry weight.

10. STABILITY AND REACTIVITY

Reactivity

Contains an oxidizer

Chemical stability

Reactive as an oxidizer.

Possibility of Hazardous Reactions

May release heat and fumes when mixed in solution with incompatible reactive materials. Will increase intensity of fire.

Hazardous polymerization

Will not occur.

Conditions to avoid

High heat, sparks and open flames, as some ingredients may be burnable.

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), dust inhalation

Symptoms	May irritate the digestive tract if ingested in quantity, causing nausea, vomiting and diarrhea. <i>After absorption of high quantities:</i> Blood in stool. Methemoglobinemia. <i>The following symptoms may appear later:</i> Blue/grey discoloration of the skin. Dizziness. Feeling of weakness. Disturbances of heart rate. Headache. Disturbances of consciousness. With repeated exposure/contact: Skin rash/inflammation.
Sensitization	None
Mutagenicity	No data.
Carcinogenicity	Contains EDTA. EDTA is not carcinogenic, but substances similar to EDTA (Nitrilotriacetic acid [NTA] and its salts) were determined to be "possibly carcinogenic to humans" (Group 2B) by IARC, a compound which "may reasonably be anticipated to be a carcinogen" by NTP and a "select carcinogen" by OSHA. EDTA may contain trace amounts of NTA.
Reproductive toxicity	There is limited evidence that <u>potassium nitrate</u> is a teratogen (birth defects) in animals. In both short and long-term reproductive studies with animals, <u>boric acid</u> has been found to act as a reproductive toxin to males and females exposed to sufficient doses. Data from occupational exposures, accidental poisonings and epidemiological studies have not provided any conclusive information on the reproductive toxicity of boric acid in humans. (Note also that recent evidence has suggested that boron may be an essential micronutrient.)
STOT - single exposure	No information available
STOT - repeated exposure	No information available
Chronic toxicity	With repeated exposure/contact: Skin rash/inflammation.
Target Organ Effects	Lungs-Nuisance dusts; Testicular atrophy and spermatogenic arrest (boric acid-oral-dogs)
Aspiration hazard	No information available

Other information: The bacteria contained in this product are natural strains of typically harmless soil and water bacteria, and are not associated with disease or infections under normal circumstances (Biosafety Level 1). However, reasonable precautions are in order. Handle as you would rich, dark soil or compost: keep it out of your mouth, eyes, lungs, and broken skin. Wash hands thoroughly after use. Remove and launder heavily soiled clothing separately before reuse. Persons with severely suppressed immune systems, such as those with advanced AIDS, or those taking anti-rejection drugs, or those undergoing chemotherapy should contact their physician before handling ordinary microbial products.

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.

Persistence and degradability	Not applicable
Bioaccumulation	Not expected to bioaccumulate based on composition.
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

Packing Group III

DOT:

Proper Shipping Name: 5.1 - Oxidizer
 Hazard Class: Not Applicable

IATA:

Proper Shipping Name: 5.1 - Oxidizing substances
 Hazard Class: Not Applicable

IMDG/IMO

Hazard Class 5.1 - Oxidizing substances
 Marine Pollutant No

15. REGULATORY INFORMATION

SARA 311/312 Hazard Categories

Acute: Yes
 Chronic: Yes
 Fire: Yes (Oxidizer)
 Sudden release of pressure: No
 Reactive: Yes (Oxidizer)

TSCA 8(b) inventory: Potassium nitrate

SARA 302/304/311/312 hazardous chemicals: Potassium nitrate

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Potassium nitrate: Fire hazard, Delayed (chronic) health hazard

SARA/CERCLA

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):

Potassium nitrate (7757-79-1) SARA 313:

- 1 % *de minimis* concentration (Chemical Category N511) (related to Water Dissociable Nitrate Compounds)

There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

- Contains manganese compounds, 313 Category N450.

Clean Water Act: This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

State Regulations

Component Analysis – State Potassium nitrate on the state Right-to-Know list for MA, NJ and PA.
California Proposition 65: No listed ingredients

International Inventories

Component Analysis - WHMIS IDL

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

Component	CAS#	Minimum Concentration or classification
Manganese EDTA	15735-84-5	1% (related to elemental manganese, Mn)
Potassium nitrate	7757-79-1	Disclosure at 1% according to classification criteria
Boric acid	10043-35-3	D2A, D2B. Disclosure at 0.1% according to classification criteria

16. OTHER INFORMATION

Potassium nitrate is an NFPA Class 1 oxidizer:

- slightly increases the burning rate of combustible materials.
- does not cause spontaneous ignition when in contact with combustible materials.

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.