



Revision Date: 01/28/2016

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANYProduct Name: **Roots PHC BioPak; Roots BioPak**

Product Identity: Mixed dry soluble bacterial inoculant.

Recommended use

This product is a mixed soluble soil inoculant for landscape use.

Supplier/Manufacturer**Lebanon Seaboard Corporation**
1600 East Cumberland Street
Lebanon PA 17042 USA
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 Statements and categories:

H316: may cause mild skin irritation. (Category 3)

Pictogram: None

Precautionary Statements for handling (See also Section 7):

P332: If skin irritation occurs: wash with plenty of soap and water. Seek medical attention if irritation persists.

P261: Avoid breathing dust or spray mist.

P362: Take off contaminated clothing and wash before reuse.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS No.	Weight %
Potassium lignosulfonate	68514-28-3	40 - 45
Seaweed extract	84775-78-0	30 -35
Maltodextrin*	9050-36-6	10 - 15
Yeast extract	8013-01-2	5 - 10
Polyethylene glycol	25322-68-3	1
Precipitated silica	7631-86-9	1
Bacteria* (Biosafety Level 1)	68038-70-0	116 million cfu/g

*Bacteria is present on a carrier of maltodextrin.

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 occurs and persists contact a physician.
Skin Contact	Wash with soap and water. If injury or rash 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 you feel unwell, call a poison control center or seek medical attention. 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, CO₂, ABC Dry Chemical extinguisher, or foam. Avoid stirring up dust extinguisher stream.

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

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.

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. Handle as rich soil or compost. Nonporous gloves recommended. Wash hands thoroughly after handling. Avoid breathing dust. Persons with severely compromised immune systems should consult with their physician before handling microbial products.
- 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*
Nuisance Dusts	15 mg/m ³ (TWA- inhalable)	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"

Other Information: 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 after use. Remove and launder heavily soiled clothing separately before reuse. For allergic response, treat symptoms, and contact physician. 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.

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

Individual protection measures

- Eye protection Safety glasses, or goggles if eye contact is likely
- Skin and Body Protection Gloves and standard work coveralls recommended.
- 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. Remove and wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state Solid
- Appearance Coarse powder
- Color Mixed, various
- Odor Slight herbal odor

Odor Threshold	No information available
pH	6.5 to 7.5 (1% aqueous solution)
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	approximately 0.5 g/cc
Water solubility	Mostly soluble in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Oxidizing properties	Not an oxidizer

10. STABILITY AND REACTIVITY

Reactivity

Not particularly reactive

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

High heat, sparks and open flames, as some ingredients are 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 (NO_x), 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.
Sensitization	No information available.
Germ cell mutagenicity	None expected based on composition.
Carcinogenicity	Not listed as carcinogenic.
Reproductive toxicity	None expected based on composition.
STOT - single exposure	No information available
STOT - repeated exposure	No information available
Chronic toxicity	Nuisance dust
Target Organ Effects	Lungs-Nuisance dust.
Aspiration hazard	No information available

The bacteria contained in this product are strains of typically harmless soil and water bacteria, and are not associated with disease or infection in normally healthy people under normal circumstances (Biosafety Level 1). However, reasonable precautions are in order. Use good hygiene practices. Handle as rich soil or compost. Nonporous gloves recommended. Wash hands thoroughly after handling. Avoid breathing dust. Persons with severely compromised immune systems should consult with their physician before handling microbial products.

12. ECOLOGICAL INFORMATION

Not expected to have toxic effects to aquatic or terrestrial life, based on composition.

Persistence and degradability	Biodegradable
Bioaccumulation	None expected based on formulation
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		

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

15. REGULATORY INFORMATION

TSCA (USA): Complies

General Product Information: This product is not federally regulated as a hazardous material.

Clean Air Act: No information is available.

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).

SARA 313 Superfund Amendments: This product contains no chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal regulations, Part 372.

SARA 311/312 Hazard Categories

Acute: Yes
Chronic: No
Fire: No
Sudden release of pressure: No
Reactive: No

CERCLA: This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material .

State Regulations – General: This product is not regulated by any State as a hazardous material.
Component Analysis – State
California Proposition 65: Precipitated silica: CA, PA
No ingredients listed.

Component Analysis – WHMIS IDL No components are listed in the WHMIS IDL.

16. OTHER INFORMATIONDisclaimer

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.