

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

Product Name: **Roots PHC Ecto Injectable for Trees; Roots Ecto Injectable for Trees**

Product Identity: Mixed dry soluble microbial soil inoculant.

Recommended use:

This product is a mixed dry soluble microbial soil inoculant for arboriculture.

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 Statements:**

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

H335: May cause respiratory irritation. (Category 3)



**Precautionary Statements for handling:** See also Section 7.

P233: Keep container tightly closed.

P264: Wash hands and exposed skin thoroughly after handling.

P261: Avoid breathing dust.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear gloves, eye protection and face protection.

P281: Use appropriate personal protective equipment as required to avoid breathing dust.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P337, P351: If eye irritation occurs and persists, rinse cautiously with water for several minutes.

P340: If inhaled and discomfort occurs, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P403: Store in a well-ventilated place.

Keep out of reach of children.

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

**Hazards not otherwise classified (HNOC):** The microbes contained in this product are strains of safe, typically harmless soil and water microbes, 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.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Weight %
Yucca plant extract	90147-57-2	10 -15
Citric Acid	77-92-9	5 - 10
Mycorrhizal Fungi spores	NA	0.4
Rhizosphere Bacteria*	68038-70-0	54.6 Million cfu/g
Nonhazardous ingredients	Various	Balance

\*Note: Bacteria are present on a carrier (maltodextrin) and cannot be expressed as a percent weight due to their insignificant mass.

**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	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, CO<sub>2</sub>, 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 and to avoid breathing dust. 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	Get special instructions before use. Use only outdoors or in a well-ventilated area. 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*
Nuisance Dusts	15 mg/m <sup>3</sup> (TWA- inhalable)	15 mg/m <sup>3</sup> (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 do not cause infections under normal circumstances. 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.

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

**Individual protection measures**

Wear protective gloves, protective clothing, eye protection, and face protection.

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. Wash contaminated clothing before reuse.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	Solid
Appearance	Fine powders
Color	Mixed, various
Odor	Slight herbal odor
Odor Threshold	No information available
pH	4.2 to 5.2 (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	0.4 to 0.6 g/cc
Water solubility	Miscible
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 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 (NO<sub>x</sub>), 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	No information available
Carcinogenicity	None
Reproductive toxicity	None
STOT - single exposure	No information available
STOT - repeated exposure	No information available
Chronic toxicity	
Target Organ Effects	
Aspiration hazard	No information available

**12. ECOLOGICAL INFORMATION**

Based on composition, this material is not expected to be harmful to aquatic life.

Persistence and degradability	Approximately 78% of the composition readily biodegrades.
Bioaccumulation	Not likely to bioaccumulate
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**

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

<b>IMDG:</b>	Not a dangerous good.
<b>ICAO/IATA:</b>	Not a dangerous good.

**15. REGULATORY INFORMATION**

TSCA (USA):	Complies
<b>General Product Information:</b>	This product is not federally regulated as a hazardous material.
<b>Clean Air Act:</b>	No information is available.

**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:	Yes
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 .

**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**

**State Right-to-Know:** No ingredients are known to be listed.

**California Proposition 65:** This product may contain detectable quantities of a substance (sand mineral: silica) known to the State of California to cause cancer by prolonged, repeated inhalation over a long period of time (months to years).

**International Inventories**

**Component Analysis – WHMIS IDL**

**Citric Acid, Anhydrous (77-92-9):** Class D Division 2 Subdivision B - Toxic material causing other toxic effects

**Citric Acid:** Listed on the Canadian Ingredient Disclosure List

**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.