Material Safety Data Sheet

Identity: **PHC™ BioPak Plus™** **Last Update:** March 3, 2011

Section I -- Manufacturer

Lebanon Seaboard Corporation
1600 East Cumberland Street
Lebanon PA 17042

Emergency Phone #: 800-424-9300 CHEMTREC
Phone # for Information: 717-273-1685

Section II -- Hazardous Ingredients/Identity Information

Hazardous Components	%	OSHA PEL	ACGIH TLV
Live Bacteria beneficial to plants.			
Ferrous sulfate monohydrate	24%	None determined	
Iron salts, soluble, as Fe			1 mg/m^3
Manganese disodium EDTA complex	1.5%	None determined	
Manganese, inorganic compounds as Mn			0.2 mg/m^3
Zinc EDTA complex	1.4%	None determined	
Magnesium hydroxide	3.7%	None determined	
Nuisance Dust:			
Respirable		5 mg/m^3	3 mg/m^3
Total		15 mg/m^3	10 mg/m^3

Section III -- Physical/Chemical Characteristics

Boiling Point: NA **Specific Gravity:** NA
Vapor Pressure: NA **Melting Point:** >200 F
Vapor Density: No vapor **Evaporation Rate:** NA
Solubility in Water: soluble
Appearance and Odor: black and gold speckled powder, mild odor.

Section IV -- Fire and Explosion Hazard Data

Flash Point: No Data **Flammable Limits; LEL:** No Data; **UEL:** No Data

Extinguishing Media: Water fog, foam, alcohol foam, CO_2, dry chemical

Special Fire Fighting Procedures:

Fire fighters should wear butyl rubber boots, gloves, and a NIOSH/MSHA approved self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Not a fire or explosion hazard when stored under normal conditions.

Section V -- Reactivity Data

Stability: Chemically stable **Conditions to Avoid:** High heat sources, sparks, open flame
Avoid prolonged storage at high temperatures.

Incompatibility (Materials to avoid): Long term storage in direct contact with reactive metals such as aluminum, zinc, copper, copper alloys, nickel, magnesium, etc. may react to release hydrogen gas which can form explosive mixtures with air. Aqueous reaction with strong alkalis can create heat. Other materials to avoid include strong oxidizing agents, strong acids, strong reducing agents, calcium nitrate, phosphorus, maleic anhydride, and ethoxyethynyl alcohols with ether.

Hazardous Decomposition or Byproducts: Burning may release noxious fumes and gases such as carbon monoxide, nitrous oxides, acetic acid, sulfuric acid, sulfur dioxide, or other toxic compounds depending on the other combustion sources.

Hazardous Polymerization: Will Not Occur

Section VI -- Health Hazard Data

HMIS Rating:
Healthy: 1 (slight) Flammability: 0 (None) Reactivity: 1 (slight) Contact: 2 (moderate)

Route(s) of Entry: Inhalation--yes Skin--yes Ingestion--yes Eyes: yes

Health Hazards (Acute and Chronic):
Acute: Skin contact may result in irritation. Eye irritant. Direct contact with eyes or open wounds could result in infection. Contains some manganese compounds, which can cause localized inflammation if small particles become embedded into the skin. Avoid skin and eye contact. Inhalation : dust may be slightly irritating with symptoms of sore throat and coughing. Levels above 10 $\mu g/m^3$ of suspended sulfates in the air may cause an excess risk of asthmatic attacks in susceptible persons. Inhalation of the product's bacteria-laden dust into the respiratory tract could theoretically cause symptoms of infection to occur in persons with a weakened immune system. Ingestion of significant amounts may cause diarrhea and abdominal pain. Persons with compromised immune systems, such as those with advanced AIDS, or those taking anti-rejection drugs, or those undergoing chemotherapy, or anyone susceptible to infections from exposure to common, otherwise harmless bacteria should consult their physician before handling bacterial products.
Excessive and repeated inhalation of manganese compounds (beyond the allowable levels) can produce, pleuritis, and/or fatal pneumonia..

Chronic: Prolonged inhalation may lead to respiratory tract irritation. Contains only a trace amount (less than 0.006%) of a material, Nitrilotriacetic acid (NTA), which has been shown to cause kidney toxicity based on animal data. Repeated or prolonged inhalation of magnesium dust has been reported to cause increased incidence of digestive disorders. Long-term exposure to excessive levels of dust containing significant amounts of manganese compounds can cause a Parkinson Disease-like syndrome or psychosis. Avoid breathing dust.

Carcinogenicity: No carcinogens are known to be present at reportable amounts.

Reproductive Effects: Possible birth defects hazard: contains material which may cause birth defects based on animal data. EDTA and its sodium salts have been reported, in some studies, to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are possibly associated with zinc deficiency caused by chelation and removal of zinc from the body. Exposures having no effect on the mother are expected to have no effect on the fetus.

Signs and Symptoms of Exposure: Skin or eye irritation with potential for causing infection. May cause nausea and intestinal distress if ingested in significant quantities. Excess inhalation of dust may result in irritation of the throat, and respiratory system, or cause shortness of breath, and reduced pulmonary function. Infection could result if product contacts open wounds or eyes. Can cause eye irritation or allergic response. See above under "Health Hazards", Acute and Chronic. If ingested in sufficient quantity, may cause gastrointestinal disturbance, including nausea, abdominal pain, diarrhea,

Medical Conditions Generally Aggravated by Exposure: May result in irritation or infection if product comes in direct contact with open wounds or eyes. May provoke asthmatic response in persons with asthma who are sensitive to airway irritants. Risk of both respiratory, eye, or wound infection is increased for exposed persons with weakened immune systems such as individuals with AIDS, or those taking anti-rejection drugs, or those receiving chemotherapy. Individuals at increased risk of infection by common microorganisms should avoid exposure to microbial-based products. Individuals with kidney impairment may be at increased risk. Interactions with medications may occur.

Emergency and First Aid Procedures: Eyes: Flush with water for at least 15 minutes. Call a physician.
Skin: Wash affected area with soap and water. If material contacts wounded or broken skin, treat wound with an antiseptic to prevent infection. If irritation develops, consult a physician. Remove and launder contaminated clothing separately before reuse.
Inhalation: If inhaled, move to fresh air. If difficulty in breathing persists, administer oxygen, and get immediate medical attention. Watch for possible development of respiratory infection.
Ingestion: Seek immediate medical attention. Unless advised otherwise, induce vomiting by administering syrup of ipecac or by sticking finger down throat. Do not give anything by mouth if person is unconscious or nearly so, has no gag reflex, or is having convulsions.

Section VII -- Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled: Avoid stirring up excessive dust. Moisten to sweep up and collect excess material while avoiding creating airborne dust. Do not breathe dust. Then apply the product to the lawn as directed. If dissolved product is spilled, contain and collect the spill to prevent discharge to surface streams or storm sewers. Then use the product as directed, or dry the product for proper disposal.. Subsequently, clean the spill area with a disinfectant. Beware of slippery floors when material becomes wet, or if spillage occurs in wet areas. Dissolved product will discolor water. This product may be corrosive to

aluminum.

Waste Disposal Method: If possible, the dissolved product should be dried before disposal. Disposal must be in accord with federal, state, and local regulations

Precautions to be Taken in Handling or Storage: Avoid stirring up dust. Use local exhaust. Do not freeze. Avoid unnecessary skin contact. Do not breath dust, mist, or fumes. This product may be corrosive to aluminum. Store in PVC, PE, stainless steel or bituminized containers.
Other Precautions: Eye wash fountains should be readily available, and easily accessible. All foods and smoking materials should be kept in a separate area from the storage/use location of this product. Eating, smoking, and drinking should be prohibited in areas where there is potential for significant exposure to this material. Hands and face should be thoroughly washed before eating, drinking, or smoking.

Section VIII -- Control Measures

Respiratory Protection: If dusts, vapors, or mists are generated, wear NIOSH/MSHA approved respirator with dust, mist, and fume filters.
Ventilation: Use local exhaust for liquid dissolved material, and filtered exhaust for dry, dusty material. Do not breathe dusts, mists, or fumes. Avoid unnecessary skin contact. Do not freeze.

Protective Gloves: Rubber, latex, vinyl, or any gloves without pores.

Eye Protection: Chemical goggles recommended if dusting conditions exists.

Other Protective Clothing or Equipment: Coveralls, apron, gloves, boots as necessary to prevent skin contact. Clean clothing should be worn daily to avoid possible long-term buildup of the product leading to chronic overexposure.

Other: Open wounds or disruptions in the skin should be covered with a chemical-resistant patch to minimize absorption risks and infection risks.

Work/Hygienic Practices: Wash hands after handling. If material contacts wounded or broken skin, was affected area with antibacterial soap and water. Treat wound with an antiseptic to prevent infection. If spilled on clothes, wash separately from other clothes. Clean clothing should be worn daily to avoid possible long-term buildup of the product leading to chronic overexposure. Wash hands and face before handling food or drink.

Transport Information:

Environmental Hazardous Substance: This product does not contain an environmentally hazardous substance.

Regulatory Information:

The manganese and zinc compounds in this product are subject to SARA Title III, Section 313 supplier notification/release reporting requirements under the manganese and zinc compounds

categories, respectively. This product contains about 0.2% manganese, and about 0.32% zinc. The EDTA-containing ingredients are subject to the following:

Environmental Lists:

TSCA: Toxic Substance Control Act -- listed
DSL: Domestic Substance List (Canada)