

# OPTIMIZE<sup>®</sup> LCO PROMOTER TECHNOLOGY<sup>™</sup>

## MATERIAL SAFETY DATA SHEET

### SECTION 1 PRODUCT & COMPANY IDENTIFICATION

**Material Names:** Optimize<sup>®</sup>, Optimize<sup>®</sup> LIFT<sup>®</sup>, Optimize<sup>®</sup> Pulse, LCO PT<sup>™</sup>

**Designations:** 1 x 10<sup>-7</sup> % Lipo-chitooligosaccharide in an aqueous carrier. *Optimize* and *Optimize Pulse* also contain a separate aqueous additive.

**Chemical Formula:** Mixture

**Manufacturer:** EMD Crop BioScience  
3101 W. Custer Ave., Milwaukee, WI 53209

**Emergency Telephone:** 414-462-7600  
Monday-Friday, 8:00 am - 4:30 pm CST

**After Hours:** Call CHEMTREC at 1-800-424-9300

### SECTION 2 INGREDIENT INFORMATION

Hazardous Ingredient:	CAS Number:	OSHA PEL:	ACGIH TLV:	ACGIH STEL:
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Contains no hazardous ingredients

Contains naturally-occurring, non-pathogenic rhizobia bacteria. These are symbiotic nitrogen-fixing bacteria, to be applied as a seed treatment to specific legume crops (not a plant food product). See product label for specific crop information, application rates and methods. Not for food, feed or drug use.

### SECTION 3 HAZARDS IDENTIFICATION

**Emergency Overview:** There are no known health effects caused by the rhizobia bacteria contained in this product.

**Primary Entry Routes:** Oral (swallowing)

**Acute Effects (Signs and Symptoms of Overexposure):**

**Eyes:** Liquid may cause minor eye irritation.

**Skin:** No known hazard.

**Inhalation:** No known hazard.

**Ingestion:** No known hazard.

**Chronic Effects:** No known hazard.

**Medical Conditions Aggravated by Exposure:** No known hazard.

**Target Organs:** None

**Carcinogenicity:** Contains no known or suspected carcinogens.

**HMIS:** Health – 0, Flammability – 0, Reactivity – 0

### SECTION 4 FIRST AID MEASURES

**Eyes:** Flush eyes with water for at least 15 minutes. Get medical attention if irritation persists.

**Skin:** Wash with soap and water.

**Inhalation:** Remove person to fresh air. Get medical attention if irritation persists.

**Ingestion:** No treatment necessary.

### SECTION 5 FIRE FIGHTING MEASURES

**Flash Point:** None

**Autoignition Temp.:** Not determined

**Explosive Limits:** LEL: Not applicable  
UEL: Not applicable



**Extinguishing Media:** Use media suitable for the surrounding fire

**Unusual Fire or Explosion Hazards:** None known

**Fire Fighting Instructions:** No special requirements.

### SECTION 6 ACCIDENTAL RELEASE MEASURES

**Large Spill/Leak Procedures:** Contain spill and recover for use or disposal.

**Small Spills:** Spilled liquid may cause slippery residue on hard floors. Flush spill area with water to wash away any slippery residue.

### SECTION 7 STORAGE AND HANDLING

**Storage Requirements:** Store in original container in a cool, dry place. Avoid repeated freeze/thaw cycles. Shake well before use. Open package only when ready to use. Use before expiration date printed on package.

**Handling Precautions:** No special handling requirements. Follow normal hygiene and housekeeping standards for agricultural products.

### SECTION 8 EXPOSURE CONTROLS/

#### PERSONAL PROTECTION

**Ventilation:** Special ventilation is not required for the normal handling and use of this product when following the label instructions.

**Protective Clothing/Equipment:** No special requirements.

**Respirator:** None required when used according to label instructions.

**Contaminated Equipment:** Clean application equipment with detergent and water after use.

**Comments:** Practice general personal hygiene after using this product. After handling any chemical or biological product, wash arms, hands and face with soap and water before eating, drinking or smoking.

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b> Liquids	<b>Water Solubility:</b> Soluble
<b>Color:</b> Yellow to brown	<b>% Volatile (Volume):</b> Not determined
<b>Odor:</b> Mild	<b>Specific Gravity:</b> 1.0 g/cc
<b>Melting Point:</b> Not determined	<b>Vapor Pressure:</b> Not determined
<b>Boiling Point:</b> 216°F (102°C)	<b>Vapor Density:</b> Not determined
<b>Freezing Point:</b> 25°F (-4°C)	<b>pH:</b> 6 to 8

### SECTION 10 STABILITY AND REACTIVITY

**Stability:** Stable

**Conditions to Avoid:** None

**Hazardous Polymerization:** Will not occur

**Chemical Incompatibilities:** Some seed-applied chemicals, including fungicides, may be harmful to the bacteria in this product. See product label for further information on the use of fungicides or other chemicals in conjunction with seed treatment.

**Hazardous Products of Decomposition:** Oxides of carbon

### SECTION 11 TOXICOLOGICAL INFORMATION

<b>Eye Effects/Eye Irritation:</b>	Non-irritating
<b>Acute Oral Effects:</b>	LD <sub>50</sub> (orl-rat): >5000 mg/kg
<b>Acute Inhalation Effects:</b>	No data available
<b>Acute Dermal Effects:</b>	LD <sub>50</sub> (dml-rbt): >2000 mg/kg
<b>Skin Irritation:</b>	Non-irritating
<b>Skin Sensitization:</b>	Not a skin sensitizer

### SECTION 12 ECOLOGICAL INFORMATION

This product contains non-pathogenic bacteria strains that occur naturally in soil, and is biodegradable.

### SECTION 13 DISPOSAL CONSIDERATIONS

**Disposal:** Small amounts of product which cannot be used according to label instructions may be disposed of in a landfill or sanitary sewer.

**RCRA Waste Status:** This product is not regulated as a hazardous waste. State and local regulation may affect the disposal of this product. Consult your state, local or provincial environmental agency for disposal of waste other than by use according to label instructions.

### SECTION 14 TRANSPORT INFORMATION

**Transportation Data:** This product is not regulated as a hazardous material for all modes of transportation within the U.S. and Canada.

**Hazard Class:** Not applicable **ID No.:** Not applicable

### SECTION 15 REGULATORY INFORMATION

**TSCA:** All components of this product are listed on the TSCA inventory.

**SARA Section 313:** Contains no reportable components.

**OSHA Hazard Classification:** Non-hazardous

**Proposition 65:** Contains no components subject to warning requirements.

**WHMIS / Controlled Products Regulations:** This product has been classified in accordance with the hazard criteria of the CPR and this MSDS contains all of the information required by the CPR.

### SECTION 16 OTHER INFORMATION

**Prepared by:** D. Joers

**Date:** 14 August 2007

Information presented on this Material Safety Data Sheet is believed to be accurate at the time of publication. No warranty, expressed or implied, is made with regard to this information. This information may not be adequate for every application, and the user must determine the suitability of this information due to the manner/conditions of use, storage or local regulations.