



3935 Thatcher Avenue, Saskatoon, SK. S7R 1A3 Canada

Material Safety Data Sheet

1. Product identification:

Designations: 2 x10⁻⁷ % Lipo-chitooligosaccharide in an aqueous Rhizobium carrier with a separate aqueous additive
Chemical formula: Mixture
Manufacturer: Novozymes BioAg Inc.
3101 W. Custer Ave., Milwaukee, WI 53209
Telephone: Phone: 414-462-7600;
M-F, 8:00 am – 4:30 pm CDT
MSDS number: NZWI-03
Effective date: June 1, 2011

Optimize[®] 400

2. Composition:

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.

3. Hazard 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

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

5. Fire-fighting measures:



Flash point: None

Auto-ignition 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

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

7. Handling and storage:

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

Questions: 1-800-558-1003;
Monday-Friday, 8:00 am – 4:30 pm CDT

8. Exposure controls, personal protection, and exposure limits:

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

9. Physical and chemical properties:

Physical state: Liquid

Water solubility: Soluble

Color: Yellow to brown

% Volatile (volume): Not determined

Odor: Mild

Specific gravity: 1.0 g/cc

Melting point: Not determined

Vapor pressure: Not determined

Boiling point: 216 °F (102 °C)

Vapor density: Not determined

Freezing point: 25 °F (-4 °C) **pH:** 6 to 8

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

11. Toxicological information:

Eye effects/eye irritation: Non-irritating

Acute oral effects: LD₅₀ (orl-rat) : >5000 mg/kg

Acute inhalation effects: No data available

Notice: The information contained in this Material Safety Data Sheet is presented in good faith and is believed to be accurate as of the effective date shown above. However, no other warranty, expressed, or implied, is given. Laws, regulations, and/or third party rights may prevent customers from importing, using, processing and/or reselling the products described herein in a given manner. Without separate written agreement between the customer and Novozymes to such effect this document does not constitute a representation or warranty of any kind and is subject to change without further notice.

Acute dermal effects: LD₅₀ (dml-rbt) : >2000 mg/kg

Skin irritation: Non-irritating

Skin sensitization: Not a skin sensitizer

12. Ecological information:

This product contains only components that are naturally occurring in soil and are biodegradable.

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

14. Transportation 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

15. Regulatory information:

TSCA A: 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

Master reference: On file

MSDS status: New MSDS

16. Other information:

Prepared by: D. Joers

This information may not be adequate for every application and therefore it is up to the user to determine the suitability of this information based on conditions of use, storage or local regulations.

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