

Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name: Nodulator[®] Liquid Inoculant
Product Code: CS/LQND
Effective Date: 10/27/2006

Hazardous Material Information System:

Health	1
Fire Hazard	1
Reactivity	1
Personal Protection	X

Manufacturer Information: Becker Underwood, Inc.
 801 Dayton Avenue
 Ames, Iowa 50010
 Information Phone: (515) 232-5907
 Emergency Phone: Chemtrec (800) 424-9300

Section 2. Hazard Identification

Hazardous Components		Occupational Exposure Limits		
Component	CAS Number	OSHA PEL	ACGIH TLV	Weight Percent
Liquid <i>Bradyrhizobium</i> spp in liquid carrier	Mixture	NE	NE	100%
No reportable quantities of hazardous ingredients are present				
No reportable quantities of toxic chemical(s) subject to the reporting requirements of Section 313 of SARA Title III and of 40 CFR 372 are present				

Emergency Overview: May cause respiratory tract, eye, and skin irritation.

Potential Acute Health Effects:

- Eyes:* Short term harmful effects are not expected. However, prolonged or repeated contact may result in irritation.
- Skin:* Short term harmful effects are not expected. However, prolonged or repeated contact may result in irritation.
- Inhalation:* Short term harmful effects are not expected. However, prolonged inhalation may lead to respiratory tract irritation.
- Ingestion:* Not an intended route of exposure. Short term harmful effects are not expected. However, Ingestion of large quantities may be harmful.

Section 3. Composition/Information on Ingredients

The composition of this material is a trade secret. Contains no other components or impurities which will influence the classification with regard to human and environmental risk assessment.

Section 4. First Aid Measures

- Eye Contact:** Immediately flush eyes with water for at least 15 minutes. Prolonged or repeated contact may result in mechanical irritation. Seek medical attention.
- Skin Contact:** Wash with soap and water. If irritation develops consult a physician. Remove and launder contaminated clothing before reuse.
- Inhalation:** Move to fresh air. Seek medical attention if irritation persists.
- Ingestion:** Seek medical attention. Unless advised otherwise, dilute with water or milk.

Section 5. Fire Fighting Measures

- Flammability of Product:** Not a fire or explosion hazard when stored under normal conditions.
- Fire Fighting Media:** Non-combustible liquid. Use extinguishing media for underlying cause of fire.
- Protective Clothing:** This product is an aqueous mixture which will not burn. If evaporated to dryness, the solid residue may pose a moderate fire hazard. No special procedures required besides standard fire fighting procedures.

Section 6. Accidental Release Measures

- Clean-Up Procedures:** Collect spilled material with an inert absorbent such as sand or vermiculite. Place in properly labeled and closed container. Dispose of collected material according to federal, state/provincial and local environmental regulations. Material is non-hazardous.
- Spills and Leaks:** Contain the spill or leak to prevent discharges to surface streams or storm sewers

Section 7. Handling and Storage

- Handling:** Avoid breathing fumes. General mechanical ventilation can be expected to effectively remove and prevent build up of any vapor or mist generated from handling this product in a closed environment. Do not freeze. Protect eyes to prevent contact. Avoid prolonged or repeated exposure to skin.
- Storage:** Keep container in a dry place inaccessible to children and pets at temperatures above freezing. Avoid high humidity. Keep containers sealed until ready for use.

Section 8. Exposure Control/Personal Protection

- Engineering controls:** General mechanical ventilation can be expected to effectively remove and prevent build up of any vapor or mist generated from handling this product in a closed environment.
- Personal Protection:**
- Eyes:* Wear safety glasses with side shields. Wear additional eye protection such as chemical goggles or face shield if splashing or spraying hazard exists. Have an eye wash station available.
 - Body:* To prevent skin contact use coveralls, apron, boots, or lab coat.
 - Hands:* Avoid skin contact by using chemically resistant gloves.
 - Respiratory:* No respiratory protection required under normal conditions of use. Use local exhaust to control excessive vapors/mists. If excessive vapors or mists are persist use appropriate NIOSH/MSHA approved organic vapor/mist respirator.
- Other:** Open wounds or skin surface disruptions should be covered with a chemical resistant patch to minimize absorption risks. Clean clothing should be worn daily to avoid possible long-term build up of the product leading to chronic overexposure.

Section 9. Physical and Chemical Properties

Odor	Slight odor	Vapor Density	NA
Color	Yellow-brown	Evaporation Rate	Slower than ether
Physical state	Liquid	Specific Gravity (H₂O = 1)	~ 1.0 g/mL
pH	NA	Solubility	Water soluble
Melting/Freezing Point	>100°C		

Section 10. Stability and Reactivity

- Chemical Stability:** This material is chemically stable under normal storage and handling conditions.
- Hazardous Decomposition:** When involved in a fire, burning may evolve noxious fumes which may include carbon monoxide, carbon dioxide, nitrous oxides, acetic acid, or other toxic compounds depending on the chemical composition and combustion conditions. However, all of the water must be driven off first for this to occur.
- Hazardous Polymerization:** Is not known to occur.
- Incompatibility (Materials to Avoid):** Long term storage in direct contact with reactive metals such as aluminum, zinc, copper, nickel, magnesium, etc. Other materials to avoid include strong oxidizing agents.
- Conditions to Avoid** High humidity. Extremes in temperature. High temperatures will cause bacteria to die. See label.

Section 11. Toxicological Information

- Chronic Toxicity:** None known
- Mutagenic Effects:** None known
- Teratogenic Effects:** None known
- Developmental Toxicity:** None known
- Acute Effects on Humans:** May cause skin, eye, and respiratory irritation.
- Sensitization:** Repeated or prolonged exposure to the substance at concentration above the exposure limits may cause respiratory tract and lung sensitization.
- Carcinogenic Effects:** This material is not known to cause cancer in animals or humans.
- Existing Medical Conditions Aggravated By Exposure:** May provoke asthmatic response in persons with asthma who are sensitive to airway irritants.

Section 12. Ecological Information

- Ecotoxicity:** No data available, however the material is not expected to have any deleterious toxic effect.
- Environmental Fate:** No data available regarding the environmental fate or biodegradation.

Section 13. Disposal Considerations

EPA Waste Number: Non-hazardous waste

Treatment: Dispose of according to all federal, state/provincial and local environmental regulations.

Section 14. Transport Information

D.O.T. Classification: Not regulated

IMO/IMDG Classification: Not regulated

Classification:

IATA Classification: Not regulated

Section 15. Regulatory Information

Hazardous Material Information System:

Health	1
Fire Hazard	1
Reactivity	1
Personal Protection	X

US Federal Regulations:

Product Information: This product is not considered hazardous.

SARA 311/312:

Acute: No
Chronic: No
Fire: No
Pressure: No
Reactive: No

SARA 313: No reportable quantities of toxic chemical(s) subject to the reporting requirements of Section 313 of SARA Title III and of 40 CFR 372 are present.

Regulatory Listings

United States	(TSCA):	Listed
Canada	(CEPA):	Listed
Europe	(EINECS):	Unknown
Australia	(AICS):	Unknown
Japan	(MITD):	Unknown
Korea	(ECL):	Unknown
China	(NEPA):	Unknown

Section 16. Other Information

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