Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name: **VAULT® HP Rhizobium Inoculant**
Product Code: not available

Hazardous Material Information System:

Health	1
Flammability	0
Physical Hazard	0
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. Ingredients and Hazards Identification

Emergency Overview: Rhizobia are soil bacteria that are not pathogenic to plants or humans.

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, exposure to vapors or mist may cause coughing or wheezing when inhaled.

Ingestion: Not an intended route of exposure. Short term harmful effects are not expected. However, Ingestion of large quantities may cause nausea.

Section 3. Composition/Information on Ingredients

Component	CAS Number
Bradyrhizobium species soil bacteria in aqueous nutrient solution.	Not available

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 irritation.

Skin Contact: Wash with soap and water. If irritation develops seek medical attention.

Inhalation: Move to fresh air. Seek medical attention if irritation develops.

Ingestion: Seek medical attention.

Section 5. Fire Fighting Measures

Flammability of Product: Not a fire or explosion hazard.

Fire Fighting Media: Foam, alcohol foam, CO2, dry chemical, water fog.

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.

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 mist. 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. Protect eyes to prevent contact. Avoid prolonged or repeated exposure to skin.

Storage: Store between 4° to 20°C (40 to 70°F). Temperatures above 50° C (120°F) are lethal to Rhizobia bacteria. Do not freeze. Keep container in a dry place. Keep containers sealed until ready for use. Store away from food and feed.

Section 8. Exposure Control/Personal Protection

		Occupational Exposure Limits		
Component	**CAS Number**	**OSHA PEL**	**ACGIH TLV**	**Weight Percent**
Bradyrhizobium species soil bacteria in aqueous nutrient solution.	Not available	None established	None established	100 %
No reportable quantities of hazardous ingredients are present				

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. 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 wear 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	Musty odor	**Vapor Density**	Heavier than air
Color	Straw colored	**Evaporation Rate**	Slower than ether
Physical state	Liquid	**Specific Gravity (H_20 = 1)**	Approximately 1.0 g/mL
pH	not available	**Solubility**	Water soluble
Melting/Freezing Point	not available		

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, 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): Materials to avoid include strong oxidizing agents, disinfectants, biocides. Avoid extremes in temperature. Microorganisms denature at >50°C

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
IATA Classification: Not regulated

Section 15. Regulatory Information

US Federal Regulations This product is not considered to be hazardous based on evaluations made by Becker Underwood under the OSHA HazCom Standard 29 CFR 1910.1200.

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) All ingredients are listed or are exempt from the requirement.

Section 16. Other Information

Revision:	1
Revision date:	October 27, 2009
Supersedes:	September 1, 2009

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