



SAFETY DATA SHEET

SDS NUMBER: 2012071A-16-LPI

SDS REVISIONS: FORMAT

DATE OF ISSUE: 06/08/16

ESTABLISH® LIQUID

SUPERSEDES: 11/02/12

**FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL DAY OR NIGHT 1-800-561-8273 or
CHEMTREC – DAY OR NIGHT 1 800-424-9300**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 PRODUCT IDENTIFIER:

TRADE NAME: ESTABLISH® LIQUID PLANT SIGNAL TECHNOLOGY FOR PEA AND LENTIL

1.2 RECOMMENDED USE: PLANT SIGNAL MOLECULES

1.3 DISTRIBUTED BY:

LOVELAND PRODUCTS CANADA, INC.

789 Donnybrook Drive • Dorchester, Ontario N0L 1G5

1.4 24 Hour Emergency Phone: 1-800-561-8273 - Additional Emergency Phone (Canutec): 1-613-996-6666 (Collect)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not classified

2.2 Label elements

None required

Signal word: Not required.

Hazard Statement: Not required.

Precautionary

Statement: None required.

2.3 Other hazards

None known

3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Chemical Name:	CAS No.	Concentration [%]
<i>Rhizobium leguminosarum</i> bv. <i>viceae</i> bacterium		0.88% w/w
Biological Signal molecules		
Hesperetin	520-33-2	0.0063% w/w
Naringenin	480-41-1	0.0025% w/w

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

- Inhalation:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable by mouth-to-mouth, if possible. Call a poison control centre or doctor for treatment advice.
- Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
- Eye contact:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.
- Ingestion:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Contact may cause eye irritation. Not expected to present a significant hazard under anticipated conditions of normal use. This product contains beneficial microorganisms. Exposure to very high levels of airborne microbial spores may result in very rare respiratory impairments or cause an allergic reaction in sensitized individuals. This product may cause adverse effects to individuals allergic to molds and/or fungi and should not be used by immunocompromised and/or immunosuppressed individuals.

4.3 Immediate Medical Attention and Special Treatment

Treatment: **NOTES TO PHYSICIAN:** There is no specific antidote. Treat symptomatically.
FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-561-8273
Take container, label or product name and Fertilizers Act Registration Number with you when seeking medical attention.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Foam. Dry powder. Carbon dioxide. Water spray. Sand. Use extinguishing media appropriate for surrounding fire. Do not use a heavy water stream.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: Accumulation of airborne dusts may present an explosion hazard in the presence of an ignition source. Thermal decomposition generates: oxides of carbon.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapours and dusts and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Prevent entry into sewers and public waters. Do not contaminate water. Do not allow to enter drains, sewers, or watercourses. Notify local or provincial authorities if liquid enters sewers or public waters.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. Collect all waste in suitable and labelled containers and dispose according to local legislation.
Never return spills to original containers for re-use.



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7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling:

Avoid inhalation of dusts, vapours / spray and contact with eyes, skin and clothing. Do not breathe dusts, mist or vapour. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers:

Keep only in the original container in a cool, well ventilated place away from: Direct sunlight, heat sources, extremely high or low temperatures. Keep container closed when not in use. Keep away from food, drink and animal feeding stuffs. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
No data available.		

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
No data available.		

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:

Engineering Measures

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eyewash station and safety shower.

Individual Protection Measures:

Eye / Face Protection:

Goggles or shielded safety glasses are recommended.

Skin Protection:

Chemical resistant clothing is recommended. Routinely wash work clothing and protective equipment to remove contaminants. The use of chemical-resistant gloves is recommended when handling undiluted product. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Respiratory Protection:

In case of inadequate ventilation or risk of inhalation of mists or vapours, use suitable respiratory equipment approved by MSHA/NIOSH. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with national or provincial standards. Wear air supplied respiratory protection if exposure concentrations are unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE:	Liquid.
ODOUR:	Mild.
ODOUR THRESHOLD:	No data available.
COLOUR:	Yellow to brown.
pH:	6 - 8.
MELTING POINT / FREEZING POINT:	-4 °C (25 °F) [Freezing point].
BOILING POINT:	102 °C (216 °F).
FLASH POINT:	No data available.
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOUR PRESSURE:	No data available.
SOLUBILITY:	Soluble.
PARTITION CO-EFFICIENT, n-OCTANOL / WATER:	No data available.
AUTO-IGNITION TEMPERATURE:	No data available.
DECOMPOSITION TEMPERATURE:	No data available.
VISCOSITY:	No data available.
SPECIFIC GRAVITY (Water = 1):	1.00 g/ml.
DENSITY:	1 kg/L / 8.34 lbs/gal.

Note: These physical data are typical values based on material tested but may vary from sample to sample.
Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No reactions known under normal use conditions. Will not polymerize.

10.4 CONDITIONS TO AVOID

Direct sunlight. Heat sources. Temperature extremes.

10.5 INCOMPATIBLE MATERIALS

Acids. Bases. Reducing agents. Oxidizing agents. Disinfectants, fungicides, and/or biocides may deactivate viable organisms.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Oxides of carbon.

11 TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE

Eye contact, skin contact.

LC₅₀ (rat): No data available.

LD₅₀ Oral (rat): No data available.

LD₅₀ Dermal (rabbit): No data available.

Acute Toxicity Estimates: No data available.

Eye Irritation (rabbit): No data available.

Skin Irritation (rabbit): No data available.

Inhalation: No data available.

Ingestion: No data available.

Specific Target Organ Toxicity: No data available.

Aspiration: No data available.

Skin Sensitization (guinea pig): Not a sensitizer

Carcinogenicity: None listed.

Germ Cell Mutagenicity: No data available.

Interactive Effects: None known.



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12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. This product is not intended for use in aquatic settings.

Ecotoxicological Data

Species	Test Results
No data available.	

Drift or runoff may adversely affect non-target plants.
Do not apply directly to water.
Do not contaminate water when disposing of equipment wash water.
Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: Not rapidly biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: No data available.

12.4 MOBILITY IN SOIL

No data available.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Do not reuse containers for any purpose. Make the empty container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Do not contaminate water, food, or feed by storage or disposal. For disposal, the container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse the product container for any other purpose.

14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

TDG Shipping Description: NOT REGULATED.

15 REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:

NFPA		HMIS	
1 Health	0 Least	1 Health	
0 Flammability	1 Slight	0 Flammability	
0 Instability	2 Moderate	0 Reactivity	
	3 High	B PPE	
	4 Severe		

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:	Immediate	<u>Y</u>	Fire	<u>N</u>	Sudden Release of Pressure	<u>N</u>
	Delayed	<u>N</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Not listed.

SARA, Title III, Section 313: Not listed.

RCRA Waste Code: Not applicable.

CA Proposition 65: Not applicable.

WHMIS [Canada]: Not controlled under WHMIS.



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16 OTHER INFORMATION

SDS STATUS: Format revised.

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

FERTILIZERS ACT REG. NO.: 2012071A

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