

Solid core granular pea and lentil Inoculant

Establish XL Granular

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Inoculant granulaire au noyau dense pour pois et lentille

*Rhizobium leguminosarum* biovar *viceae*  
STRAIN 1435 / SOUCHE 1435

- Technologically advanced carrier / Support issu d'une nouvelle technologie
- Easy flow formulation / Formule favorisant l'écoulement
- Performance and convenience / Pratique et efficace

(Additional information on back panel / Informations supplémentaires au verso)

Registration NUMBER 2019175A Fertilizers Act  
NUMÉRO D'enregistrement 2019175A Loi sur les engrais

Manufactured for and Distributed by/ Fabriqué pour et Distribué par:  
Loveland Products Canada Inc.  
789 Donnybrook Drive  
Dorchester, Ontario N0L 1G5

Product inquiries / Renseignements sur les produits: 1-800-328-4678  
24hr emergency contact / Contact en cas d'urgence, 24 heures sur 24: 1-800-561-8273

NET WEIGHT /  
POIDS NET:

22,68 kg (50 lb)

  
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Establish XL Granular

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## Establish XL Granular

Solid core granular pea and lentil Inoculant

This granular inoculant contains living organisms and requires a relatively high moisture content compared to granular pesticides. To optimize flow (especially under humid conditions) it is suggested to only fill large compartments to no more than 50 percent capacity.

Directions for use: Screen solid core granules prior to auguring into air seeder tank. Break apart any clumps before adding. Use loading auger to fill tank and screens provided by equipment manufacturer.

Row Spacing		Application Rate		Area treated per bag	
cm	inches	kg/ha	lbs/ac	ha	ac
17.8	7	5.3	4.7	4.3	10.6
20.3	8	4.6	4.1	4.9	12.2
22.9	9	4.0	3.6	5.7	13.9
25.4	10	3.7	3.3	6.1	15.2
27.9	11	3.4	3.0	6.6	16.7
30.5	12	3.0	2.7	7.5	18.5

For row spacing not represented on application rate table, please contact your Loveland representative for rate.

### EQUIPMENT CALIBRATION

This solid core granular inoculant is similar in particle size to some herbicide granules with a mean particle size distribution between 0.6 - 1.7 mm (92%) when submitted to standard Tyler Mesh particle size calibration and a bulk density of 0.90 grams per cubic centimeter (56 pounds per cubic foot).

### STORAGE/PRECAUTIONS

- Store granular inoculant in a cool 10-15°C (50-60°F) dry place and away from pesticides and bulk fertilizers.
- Store bags flat, keeping off of floor (i.e. pallet) to avoid direct contact with cold, damp surfaces.
- Use before expiration date.
- Apply granular inoculant directly to the furrow. **The product must not be applied at a depth that is less than the planting depth of the seed.**
- Do not mix granular inoculant with granular pesticides or fertilizers during planting.
- Remove any unused granules from the hopper box at the end of each days planting. Do not allow granules to sit in hopper overnight.
- Environmental conditions may affect flowability of the product. Regularly check metering system to ensure proper flow.

### PRECAUTIONS

Wear respiratory protection, such as a respirator, if ventilation is inadequate. Wear chemical resistant gloves, safety glasses with side shields, and closed work clothing. Do not eat, drink or smoke while using. Wash with soap and water after handling. Remove contaminated clothing and wash before reuse.

### FIRST-AID MEASURES

If inhaled: Remain calm, remove to fresh air.

If on skin: Wash thoroughly with soap and water.

If in eyes: Wash affected eyes for at least 15 minutes under running water with eyelids held open.

If swallowed: Rinse mouth and then drink plenty of water.

GHS: The product does not require a hazard warning label in accordance with GHS criteria.

### GUARANTEE

This product contains a minimum of 8 x 10<sup>7</sup> viable cells of *Rhizobium leguminosarum* biovar *viceae* STRAIN 1435 CFU/gram.

WARRANTY: Since weather, crops, soil and other conditions may vary, neither BASF CANADA, nor the Seller make a warranty of any kind, expressed or implied, concerning the use of this product. The user assumes all risk of use and handling whether or not in accordance with directions or suggestions.

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## Establish XL Granulaire

Inoculant granulaire au noyau dense pour pois et lentille

Cet inoculant granulaire contient la matière organique et exige une haute teneur en humidité relativement comparée aux pesticides granulaires. Pour optimiser l'écoulement (particulièrement dans des conditions humides) on le suggère de remplir seulement grands compartiments à pas plus de 50 pour cent de capacité.

Mode d'emploi : Tamiser toutes les granules au noyau solide avant de les acheminer vers le réservoir à engrais du semoir pneumatique. Briser en morceaux toute motte avant l'ajout. Utiliser un collecteur à vis sans fin pour remplir la cuve et les grilles fournies par le fabricant de l'équipement.

Largeur des rangs		Taux d'application		Secteur à traité par sac	
cm	pouces	kg/ha	lbs/ac	ha	ac
17.8	7	5.3	4.7	4.3	10.6
20.3	8	4.6	4.1	4.9	12.2
22.9	9	4.0	3.6	5.7	13.9
25.4	10	3.7	3.3	6.1	15.2
27.9	11	3.4	3.0	6.6	16.7
30.5	12	3.0	2.7	7.5	18.5

Pour les espacements entre les rangs non indiqués dans le tableau des doses d'application, veuillez communiquer avec votre représentant de Loveland pour la dose.

### ÉTALONNAGE DE L'ÉQUIPEMENT

Cet inoculant granulaire à noyau solide et enrobage multicouche est constitué de particules dont la taille est semblable à celle de certains herbicides granulaires, soit une distribution granulométrique moy-enne de 0,6 à 1,7 mm (92 %), d'après la mesure granulométrique normalisée Tyler Mesh pour une masse volumique apparente de 0,90 g/cm<sup>3</sup> (56 lb/pi<sup>3</sup>).

### STOCKAGE/PRECAUTIONS

- Stockez l'inoculant granulaire dans un endroit 10-15 °C (50-60 °F) sec frais et loin des pesticides et des engrais en vrac.
- Stockez les sacs plats, retenu du plancher (c.-à-d. palette) pour éviter le contact direct avec les surfaces froides et humides.
- Employez avant date d'échéance.
- Appliquez l'inoculant granulaire directement au sillon. **Le produit ne doit pas être appliqué à une profondeur qui est moins que la profondeur de plantation de la graine.**
- Ne mélangez pas l'inoculant granulaire aux pesticides ou aux engrais granulaires pendant la plantation.
- Enlevez tous les granules inutilisés de la boîte de distributeur à la fin de chaque jour de plantation. Ne pas laisser des granules reposer toute la nuit dans le distributeur.
- Les conditions environnementales peuvent affecter la fluidité du produit. Vérifiez régulièrement le système de mesure pour assurer l'écoulement approprié.

### PRECAUTIONS

Porter une protection respiratoire, comme un respirateur, si la ventilation est insuffisante. Porter des gants résistants aux produits chimiques, des lunettes de sécurité avec des protections latérales et vêtements de travail fermés. Ne pas manger, ne pas boire et ne pas fumer pendant l'utilisation. Se laver avec de l'eau et du savon après avoir manipulé. Enlever les vêtements contaminés et les laver avant de les réutiliser.

### PREMIERS SECOURS

Lorsque inhalé : Repos, air frais.

Lorsque en contact avec la peau : Laver à fond avec de l'eau et du savon.

Lorsque en contact avec les yeux : Laver à fond à l'eau courante pendant au moins 15 minutes en maintenant les paupières écartées.

Lorsque avalé : Se rincer la bouche et boire de l'eau abondamment.

GHS: Le produit n'est pas soumis à étiquetage selon les critères du GHS.

### GARANTIE

Ce produit contient un minimum de 8 x 10<sup>7</sup> cellules viables de *Rhizobium leguminosarum* biovar *viceae* SOUCHE 1435 CFU/gramme.

GARANTIE : Puisque les conditions de la météo, de la culture, du sol et autres sont variables, BASF CANADA et le vendeur ne donnent aucune garantie, expresse ou implicite, concernant l'usage de ce produit. L'utilisateur assume tout risque d'emploi ou de manipulation en conformité ou non avec le mode d'emploi et les suggestions.

ESTABLISH est une marque déposée de Loveland Products, Inc.

  
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# SAFETY DATA SHEET

SDS NUMBER: 2019175A-19-LPI

SDS REVISIONS: NEW

DATE OF ISSUE: 10/11/19

**ESTABLISH® XL**  
SUPERSEDES: NEW

**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® XL GRANULAR

1.2 RECOMMENDED USE: INOCULANT FOR PEA AND LENTIL

### 1.3 DISTRIBUTED BY:

LOVELAND PRODUCTS CANADA, INC.

789 DONNYBROOK DRIVE • DORCHESTER, ONTARIO N0L 1G5

1.4 24 Hour Emergency Phone: (Chemtrec): 1-800-424-9300 (Toll Free) - Additional Emergency Phone 1-800-561-8273

Loveland Technical Service: 1-800-328-4678

## 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> biovar <i>viceae</i> Strain 1435		8 x 10 <sup>7</sup> viable cells CFU/g
Crystalline silica	14808-60-7	1.0 – 5.0

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#### 4. FIRST AID MEASURES

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##### 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.

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#### 5. FIRE FIGHTING MEASURES

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##### 5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Foam. Dry powder. Carbon dioxide. Water spray. 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 and oxides of nitrogen.

##### 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.

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#### 6. ACCIDENTAL RELEASE MEASURES

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##### 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.

**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.

Avoid dust formation. Dust can form explosive mixture with air. Prevent electrostatic charge – sources of ignition should be kept well clear – fire extinguishers should be kept handy.

**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. Protect against freezing. Protect from temperatures below 5 °C. Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time. Protect from temperatures above 25 °C. Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time. 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
Silica, crystalline, α-quartz	TWA	0.025 mg/m <sup>3</sup> R (measured as inhalable fraction of the aerosol)

**U.S. Workplace Exposure Level (OSHA) PELs**

Components	Type	Value
Silica, crystalline, α-quartz	TWA	0.05 (Respirable dust)

**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.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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9.1 APPEARANCE:	Solid.
ODOUR:	Faint.
ODOUR THRESHOLD:	No data available.
COLOUR:	White to grey.
pH:	~ 5 - 7.
MELTING POINT / FREEZING POINT:	Not applicable.
BOILING POINT:	Not applicable.
FLASH POINT:	> 93 °C.
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOUR PRESSURE:	No data available.
SOLUBILITY:	Insoluble.
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):	Not applicable.
DENSITY:	200 – 1200 kg/m <sup>3</sup> .

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.

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**10. STABILITY AND REACTIVITY**

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**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**

Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid prolonged exposure to extreme heat. Avoid contamination. Avoid electro-static discharge. Avoid prolonged storage. This product may form an explosive mixture if: 1. the dust is suspended in the atmosphere as a dust cloud AND 2. the concentration of the dust is above the lower explosion limit (LEL) AND 3. the limiting oxygen concentration (LOC) is exceeded.

**10.5 INCOMPATIBLE MATERIALS**

Acids. Bases. Strong oxidizing agents.

**10.6 HAZARDOUS DECOMPOSITION PRODUCTS**

None known.

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**11 TOXICOLOGICAL INFORMATION**

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**11.3 LIKELY ROUTES OF EXPOSURE**

Primarily ingestion and inhalation, but may include eye contact, skin contact.

**LC<sub>50</sub> (rat):** > 5.0000 mg/L – ATE (dust).

**LD<sub>50</sub> Oral (rat):** > 5,000 mg/kg - ATE.

**LD<sub>50</sub> Dermal (rabbit):** > 5,000 mg/kg - ATE.

**Acute Toxicity Estimates:** No data available.

**Eye Irritation (rabbit):** Not irritating.

**Skin Irritation (rabbit):** Not irritating.

**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: 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]: D2A: Materials Causing Other Toxic Effects – Very toxic material. 



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### 16 OTHER INFORMATION

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**SDS STATUS:** New.

**PREPARED BY:** Product Stewardship and Regulatory Affairs

**REVIEWED BY:** Safety, Health and Environment

**FERTILIZERS ACT REG. NO.:** 2019175A

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