**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

1.1. **Product identifier**
- **Product form**: Mixture
- **Trade name**: Cell-Tech®
- **Product**: liquid nitrogen-fixing inoculant for pea and lentil

1.2. **Relevant identified uses of the substance or mixture and uses advised against**
- **Use of the substance/mixture**: Rhizobium Inoculant

1.3. **Details of the supplier of the safety data sheet**
- MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167
- Telephone: 800-332-3111, Fax: 314-694-5557
- E-mail: safety.datasheet@monsanto.com

1.4. **Emergency telephone number**
- **Emergency number**: FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted). FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

**SECTION 2: Hazards identification**

2.1. **Classification of the substance or mixture**
- **GHS-US classification**: Not classified

2.2. **Label elements**
- **GHS-US labelling**: No labelling applicable

2.3. **Other hazards**
- **Other hazards**: No additional information available

2.4. **Unknown acute toxicity (GHS-US)**
- **This mixture contains 4.17% of ingredients with unknown acute toxicity.**

**SECTION 3: Composition/information on ingredients**

3.1. **Substance**
- Not applicable

3.2. **Mixture**
- **Active ingredients**: Liquid medium of *Rhizobium leguminosarum bv. viceae* 4.17%w/w

This mixture does not contain any substances to be mentioned according to the criteria of Appendix D to Regulations 29 CFR 1910.1200.

**SECTION 4: First aid measures**

4.1. **Description of first aid measures**
- **First-aid measures general**: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- **First-aid measures after inhalation**: Allow breathing of fresh air. Allow the victim to rest. In all cases of doubt, or when symptoms persist, seek medical advice.
- **First-aid measures after skin contact**: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- **First-aid measures after eye contact**: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- **First-aid measures after ingestion**: Rinse mouth. Do NOT induce vomiting unless directed to do so by medical personnel. Give water to drink if victim completely conscious/alert. Get medical advice/attention if you feel unwell.
4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use. This product contains beneficial microorganisms. Monsanto exclusively uses non-pathogenic beneficial microorganisms that are considered to be non-allergenic, non-irritating and non-sensitizing when used as directed. Exposure to very high levels of airborne microbial spores may result in very rare respiratory impairments or cause an allergic reaction in sensitized individuals.

Symptoms/injuries after eye contact : Contact may cause eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : None known.
Explosion hazard : None known.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protective equipment for firefighters : As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Collect all waste in suitable and labelled containers and dispose according to local legislation.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide adequate ventilation. Avoid contact with skin, eyes and clothing.

Hygiene measures : Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practices.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : 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 freeze.


Storage temperature : 4 - 12 °C (39°F-54°F)
7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls : Ensure adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or safety glasses.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Where exposure through inhalation may occur from use, approved respiratory protection equipment is recommended.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state : Liquid
Appearance : Opaque liquid.
Colour : Opaque
Odour : Slight
Odour threshold : No data available
pH : 6.5 - 7.4
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : Not applicable
Freezing point : -4 °C (25°F)
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : Not applicable
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Solubility : No data available
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : Not applicable

9.2. Other information
No additional information available
Cell-Tech® Liquid Pea
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 10: Stability and reactivity

10.1. Reactivity
Stable.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Direct sunlight. Heat sources. Extremely high or low temperatures.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified
(Based on available data, the classification criteria are not met)

Skin corrosion/irritation : Not classified
(Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified
(Based on available data, the classification criteria are not met)

Respiratory or skin sensitisation : Not classified
(Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified
(Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified
(Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified
(Based on available data, the classification criteria are not met)

Specific target organ toxicity (single exposure) : Not classified
(Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : Not classified
(Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified
(Based on available data, the classification criteria are not met)

Symptoms/injuries after eye contact : Contact may cause eye irritation.

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Cell-Tech® Liquid Pea</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not established.</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Cell-Tech® Liquid Pea</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not established.</td>
</tr>
</tbody>
</table>
### 12.4 Mobility in soil
No additional information available

### 12.5 Other adverse effects
- **Effect on ozone layer**: No additional information available
- **Effect on the global warming**: No additional information available
- **Other information**: Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods
- **Waste disposal recommendations**: Dispose in a safe manner in accordance with local/national regulations.
- **Ecology - waste materials**: Avoid release to the environment.

### SECTION 14: Transport information

- **In accordance with DOT**: Not regulated for transport

#### Additional information
- **Other information**: No supplementary information available.

**ADR**
No additional information available

**Transport by sea**
No additional information available

**Air transport**
No additional information available

### SECTION 15: Regulatory information

#### 15.1 US Federal regulations
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese whey</td>
<td>9219-90-3</td>
<td>0.17%</td>
</tr>
</tbody>
</table>

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### 15.2 International regulations
No additional information available

#### 15.2.2 National regulations
**Cell-Tech® Liquid Pea**
This material is not considered hazardous according to the criteria of the US OSHA Hazard Communication Standard (29 CFR 1910.1200).

**California Proposition 65** - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

### SECTION 16: Other information

#### Abbreviations and acronyms
- ACGIH (American Conference of Government Industrial Hygienists).
- ATE - acute toxicity estimate.
- CAS - Chemical Abstracts Service.
- GHS - Globally Harmonised System.
- OSHA - Occupational Safety and Health Administration.
- PEL - Permissible Exposure Level.
- STEL - Short-Term Exposure Limit.
- TWA - Time Weighted Average.

#### Other information
None.
Cell-Tech® Liquid Pea
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

NFPA health hazard: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard: 0 - Materials that will not burn.
NFPA reactivity: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

SDS US (GHS HazCom 2012)

Although the information and recommendations set forth herein (hereinafter “Information”) are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.