



Safety Data Sheet: Recombinant *E.coli* BirA, Tag Free (Lyophilized)

Section 1: Identification

Identification of the Substance:	<ul style="list-style-type: none"> Product name: Recombinant <i>E.coli</i> Bir A, Tag free, Lyophilized Other names: Recombinant <i>E.coli</i> Biotin [acetyl-CoA-carboxylase] ligase, Tag Free Recommended Use: For Research Use Only. Not for diagnostic or therapeutic use.
Company/Undertaking Identification:	<ul style="list-style-type: none"> Future Fields Cellular Agriculture and Research LTD. 11130 105 Avenue NW, Edmonton, AB, Canada, T5H0L5
24 hour Emergency Response for Hazardous Materials [or Dangerous Goods] Incident, Spill, Leak, or Exposure	<ul style="list-style-type: none"> Emergency response: Call Environmental 360 Solutions Canada wide: 1-833-463-3607
24 hour Emergency Response for Fire, Exposure or Accident	<ul style="list-style-type: none"> Canada and USA: Call 911 Outside the USA and Canada: Call the local emergency response number

Section 2: Hazard(s) Identification

- **Relevant Ingredients ($\geq 1\%$):** None
- Mixture ingredients are Non-Hazardous according to GHS Classification Guidelines (less than 1% of mixture)

Section 3: Composition/Information on Ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution.

Substance	CAS Number	Substance	CAS Number
Recombinant protein	N/A	Tris hydrochloride	1185-53-1
Sodium chloride	7647-14-5		
Dithiothreitol (DTT)	3483-12-3		



Section 4: First-Aid Measures

Description of First Aid Measures

Skin contact	Rinse skin with water. Immediate medical attention is not required. If symptoms occur, seek medical advice.
Eye contact	Rinse cautiously with water. Remove contact lenses, if present and easy to do. Continue rinsing for 15 minutes. If symptoms persist, seek medical attention.
Ingestion	Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If symptoms occur, seek medical advice.
Inhalation	Not expected to be an inhalation hazard under anticipated conditions of normal use of this material. Remove casualty personnel to fresh air. If symptoms occur, seek medical attention immediately.
Notes to Physician	Treat symptomatically.
Most important symptoms and effects, both acute and delayed: Not Applicable	
Indication of any immediate medical attention and special treatment needed: None	

Section 5: Fire-Fighting Measures

Extinguishing Media

Suitable extinguishing media	Water spray, carbon dioxide (CO ₂), foam, dry chemicals
Unsuitable extinguishing media	No information available
Special hazards arising from the substance or mixture	No information available
Protective equipment and precautions for firefighters	Standard procedure for chemical fires



Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Use personal protection equipment.

Environmental precautions:

No special environmental precautions required.

Methods and material for containment and cleaning up:

Soak up with inert absorbent material.

Reference to other sections: See Section 8 for more information.

Section 7: Handling and Storage

Precautions for safe handling:

Use personal protective equipment as required. No special handling advice is necessary.

Conditions for safe storage, including any incompatibilities:

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Specific end use(s):

For Research Use Only. Not for diagnostic or therapeutic use.

Section 8: Exposure Controls/Personal Protection

Control Parameters

- **Exposure limits:** Contains no substances with occupational exposure limit values
- **Engineering measures:** Ensure adequate ventilation, especially in confined areas

Exposure Controls

Personal Protective Equipment (PPE)	<p>Respiratory protection: In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards</p> <p>Hand protection: Wear suitable gloves; Glove material: Compatible chemical-resistant gloves</p> <p>Eye protection: Tight sealing safety goggles</p> <p>Skin and body protection: Wear suitable protective clothing</p>
Hygiene measures	<p>Handle in accordance with good industrial hygiene and safety practices</p>
Environmental exposure controls	<p>No special environmental precautions required.</p>





Section 9: Physical and Chemical Properties

Appearance	Lyophilized powder	Upper explosion limit	No data
Odor	No data	Lower explosion limit	No data
Odor threshold	No data	Vapor pressure	No data
Molecular weight	No data	Vapor density	No data
pH	7.5	Relative density	No data
Melting point / melting range	No data	Specific gravity	No data
Boiling point / boiling range	No data	Solubility	No data
Flash point	No data	Partition coefficient:	No data
Autoignition temperature	No data	n-octanol/water	No data
Decomposition temperature	No data	Viscosity	No data
Evaporation rate	No data	Explosive properties	No data
Flammability (solid, gas)	No data	Oxidizing properties	No data

Other information: No data

Section 10: Stability and Reactivity

- **Reactivity:** None known
- **Chemical stability:** Stable under normal conditions
- **Possibility of hazardous reaction:** No information available
- **Conditions to avoid:** No information available
- **Incompatible materials:** No dangerous reaction known under conditions of normal use
- **Hazardous decomposition products:** No data available



Section 11: Toxicological Information

Information on toxicological effects: There is no evidence available indicating acute toxicity.

Principal Routes of Exposure	Potential Health Effects
Eyes	May cause eye irritation. No data available
Skin	May cause skin irritation. No data available
Inhalation	May be harmful by inhalation. No data available
Ingestion	May be harmful if swallowed. No data available
Carcinogenic	No data available
Germ cell mutagen	No data available
Sensitization	No data available
Target organ effects (single and repeated exposure)	No data available
Reproductive toxicity	No data available
Aspiration hazard	No data available

Section 12: Ecological Information (non-mandatory)

- **Ecotoxicity:** Contains no substances known to be hazardous to the environment or not degradable in wastewater treatment plants
- **Mobility in soil:** No data available
- **Persistence and degradability:** No data available
- **Bioaccumulative potential:** No data available
- **Other adverse effects:** No information available

Section 13: Disposal Considerations (non-mandatory)

Waste treatment methods

Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved local disposal techniques. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.



Section 14: Transport Information (non-mandatory)

- **IATA / ADR / DOT-US / IMDG:** Not regulated in the meaning of transport regulations
- **UN number:** None
- **UN proper shipping name:** None
- **Transport hazard class(es):** None
- **Packing group:** None
- **Environmental hazards:** None
- **Special precautions for user:** Not applicable

Section 15: Regulatory Information (non-mandatory)

- **Safety Regulatory Information:** No information available
- **Health Regulatory Information:** No information available
- **Environmental Regulatory Information :** No information available

Section 16: Other Information

Date of latest version: 25 November 2024

Usage: For Research Use Only. Not for diagnostic or therapeutic use.

References

- [CCOHS](#)
- [OSHA](#)
- [WHMIS](#)
- [Environmental 360 Solutions](#)

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End of Safety Data Sheet

