1. IDENTIFICATION OF THE PREPARATION/SUBSTANCE AND OF THE COMPANY

Preparation Name:

Abs I restriction endonuclease (nuclease, restriction endodeoxyribonuclease) - buffered aqueous glycerol solution.

(Supplied with: SE-buffer Abs I).

Source: Isolated from Arthrobacter species 7M06.

Catalogue numbers of the product:

E535, E536, SE536, ME536, LE536 (depending on the quantity).

Use of the preparation:

For laboratory use.

Company identification:

SibEnzyme Ltd.
2/12 Timakova Str.
630117 Novosibirsk
Russia
Telephone: +7 383 333 4991
Telephone/Fax: +7 383 333 6853
Site: http://www.sibenzyme.com
E-mail: info@sibenzyme.com

Emergency telephone number:

+7 383 333 6853
2. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredients:

1. Abs I                               < 0.1% (w/v)    EC#            CAS#                  
2. Glycerol                                    50% (v/v)    EC#200-289-5    CAS#56-81-5       
3. Potassium chloride                                 < 1% (w/v)    EC#231-211-8    CAS#7447-40-7       
4. Tris-HCl                       < 1% (w/v)                  
   (mix of Tris (Trometamol)            EC#201-064-4 CAS#77-86-1
   and Hydrochloric acid             EC#231-595-7 CAS#7647-01-0)
5. EDTA (disodium salt)                  < 0.01% (w/v)    EC#205-358-3    CAS#139-33-3       
6. 2-Mercaptoethanol                               < 0.1% (w/v)    EC#200-464-6    CAS#60-24-2       
7. BSA (Bovine serum albumin)                  0.02% (w/v)    EC#232-936-2    CAS#9048-46-8       
8. Triton X-100 (Octyl phenol ethoxylate)  0.05% (v/v)    EC#            CAS#9002-93-1       
9. Water                                  ~ 48% (v/v)    EC#231-791-2    CAS#7732-18-5


3. HAZARDS IDENTIFICATION

The preparation is not classified as dangerous according to Directive 1999/45/EC or Directive 67/548/EC, and is not labelled with danger symbols or indications of danger.

Hazards deriving from physical-chemical properties:

The data available do not support any physical or chemical hazard.

Human health hazards:

Aqueous glycerol enzyme solutions are aerosol-free preparations. However, inappropriate handling may cause formation of aerosols. Inhalation of enzyme aerosols may cause allergic type reactions in sensitized individuals. Prolonged skin contact may cause minor irritation. 

Caution: Avoid inhalation, ingestion, and skin contacts.

Environmental hazards:

The data available do not support any environmental hazard.

4. FIRST-AID MEASURES

Ingestion:

If swallowed, rinse mouth and throat thoroughly with water. Consult a doctor in event of any complaints.

Inhalation:

If inhaled, remove victim from area of exposure. If symptoms of irritation or respiratory allergy occur, consult a doctor.

Skin contact:

Generally, the product does not irritate the skin. If symptoms of irritation after prolonged exposure occur, consult a doctor.
Eye contact:
   In case of contact, wash out opened eyes with plenty of water for several minutes. Consult a doctor in event of any complaints.

5. FIRE-FIGHTING MEASURES

The preparation cannot cause fire.

Suitable extinguishing agents:
   Water spray, Carbon Dioxide, dry chemical powder or appropriate foam.

Not suitable extinguishing agents:
   None.

Special exposure hazards from decomposition products:
   Not thoroughly investigated.

Protective equipment:
   Wear self-contained breathing apparatus and protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
   Wear appropriate gloves (see Section 8), safety glasses to clean small releases/spillage. In case of vapour/aerosol formation, wear suitable respiratory protection means. Ventilate the area.

Environmental precautions:
   No special measures required.

Methods for cleaning up:
   Absorb spillages with liquid-binding material. Ventilate and wash the area after the spillage is completely removed.

Additional information:
   No dangerous substances are released.

7. HANDLING AND STORAGE

Handling:
   No further requirements.

   Use appropriate personal protection measures (see Section 8). Avoid any contact with the liquid. Avoid the formation of aerosols. Ventilate area.

Storage:
   Store at - 20°C.
   None other specific requirements relating to the preparation.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with limit values that require monitoring at the workplace:
   The product does not contain any relevant quantities of materials with critical values that
   need to be monitored at the workplace.

General protective and hygienic measures:
   The usual precautionary measures are the same as for chemicals handling.

Engineering measures:
   None specific requirements relating to the preparation.

Personal protection:
   - **Respiratory protection**: No special measures required.
   - **Hand protection**: Wear rubber gloves. None special requirements to rubber.
   - **Eye protection**: No need to wear glasses (goggles) when ordinary operations with the
     preparation. Safety glasses are recommended during certain operations when aerosol
     formation is possible.
   - **Skin protection**: The usual precautionary measures accepted in research laboratories, e.g.
     protective clothes (gowns). None specific requirements.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**: Liquid.
**Colour**: Colourless.
**Odour**: Odourless.
**pH-value at 25°C**: 7.5.
**Boiling point**: 182°C.
**Melting Point**: 20°C.
**Flash Point**: Not applicable.
**Flammability/autoflammmability**: The preparation is not flammable/self-igniting.
**Explosive properties**: The preparation does not possess explosive properties.
**Oxidizing properties**: Not applicable.
**Vapour pressure**: Not applicable.
**Relative density at 20°C**: 1.14 g/cm³.
**Solubility in/miscibility with water**: Fully miscible.
**Fat solubility**: Not applicable.
**Vapour density**: Not applicable.
**Evaporation rate**: Not applicable.
**Conductivity**: Not applicable.
**Viscosity**: Viscous.

10. STABILITY AND REACTIVITY

**Stability**: Stable under storage conditions (see Section 7). Storage at room temperature may result in
   lowering of the specific activity, but not result in any hazardous reactions.

**Conditions to avoid**: No conditions which may cause dangerous reactions.
Possibility of hazardous reactions:
No dangerous reactions known.

Materials to avoid:
No materials which may cause dangerous reactions.

Hazardous decomposition products:
No dangerous decomposition products known.

Hazardous polymerization:
Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of exposure:
Inhalation: Inhalation of enzyme aerosols may cause allergic type reactions in sensitized individuals.
Ingestion: Repeated ingestion or excessive dosage may cause irritation of the gastrointestinal tract.
Skin and eye contact: Generally, the product does not irritate the skin and eyes. Prolonged skin or eye contact may cause minor irritation.

Additional toxicological information:
When used and handled according to specifications, the product does not have any harmful effects.

The product is not listed in a priority list (as foreseen under Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of the existing substances.)

12. ECOLOGICAL INFORMATION

Ecotoxicity:
The preparation is considered not dangerous to the environment with respect to mobility, persistence and degradability, bioaccumulation, aquatic toxicity and other data relating to ecotoxicity.

Persistence and degradability:
The preparation is readily biodegradable.

Bioaccumulative potential:
It is considered that the preparation does not accumulate in biota, and does not pass through the food chain.

Other adverse effects:
Not applicable.

13. DISPOSAL CONSIDERATIONS

The disposal of the product does not present a danger.

No special disposal methods required, except to be in accordance with current local environmental regulations.
14. TRANSPORT INFORMATION

Special precautions:
None known.

Proper shipping name:
Not dangerous goods according to transport regulations.

National transport regulations:
No additional national transport regulations are known to the supplier.

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<td>ADR</td>
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<td>ICAO/IATA</td>
<td>Non-hazardous for air transport.</td>
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Other information:
The preparation has to be stored in ice during the transportation not to lose its specific properties.

15. REGULATORY INFORMATION

US
Labelling according to US Regulations: Caution: Avoid contact and inhalation.
US Regulatory information: SARA LISTED: No.

EU
Labelling according to EU Guidelines: The preparation is not dangerous within the meaning of Directives 67/548/EC, 1999/45/EC, and 88/379/ECC, and is not labelled with danger symbols or indications of danger.

Canada
WHMIS classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No.
NDSL: No.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SibEnzyme shall not be held liable for any damage resulting from handling or from contact with the above product.