1 Chemical Product and Company Identification

Identification of the product
- Product Name: Glucoamylase (GLA-111)
- First issue: Sep. 1, 2014
- SDS No.: 940F

Supplier
- Name: TOYOBIO CO., LTD.
- Address: 2-8, Dojimahama 2-chome Kita-ku, Osaka 530-8230, Japan
- Department: Biotechnology Overseas Sales and Marketing Department
- Phone: +81-6-6348-3843
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Recommended use and restrictions on use
- diagnostic product

2 Hazard Identification

Most Important Hazards and Effects
- The product might cause allergic reactions upon inhaling or skin contact because of the protein contained.
- Classification not possible

GHS classification

3 Composition/Information on Ingredients

Substance/Mixture
- Mixture

Chemical Nature
- Glucoamylase
- Freeze and drying powder including enzyme

Concentration or concentration range
- ca 88% (W/W)

Main components
- Glucoamylase
  - Cas No: 9032-08-0
- Glycine
  - Cas No: 56-40-6
- Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)
  - Cas No: 9002-93-1

Ingredients Contributing to the Hazard
- Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)
  - Concentration or concentration range: ca 1% (W/W)
  - Chemical formula: Not specified
  - CAS#: 9002-93-1

4 First Aid Measures

Inhalation
- Remove to fresh air. Consult a physician when unpleasantness occurs.

Skin Contact
- Wash off with plenty of water. Consult a physician when inflammation on the skin occurs.

Eye Contact
- Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Ingestion
- Rinse mouth. Swill plentiful amount of water or milk for immediate vomiting. Consult a physician.

5 Fire Fighting Measures

Specific extinguishing methods
- Water spray, dry chemical powder, or carbon dioxide etc.

Precautions for fire-fighters
- Firefighter should work from the windward side.
Safety Data Sheet

6 Accidental Release Measures
Personal Precautions, protective equipment and emergency procedure.
Environmental Precautions
Methods and materials for containment and cleaning up.

Wear protective gear to avoid eye/skin contact and inhalation. Do not work at leeward.
High concentrated waste fluid should not be directly discharged into rivers.
Take up under vacuum using dust collecting filter, wash residual spill with copious amounts of water. Use cloth, paper or anything similar to soak up the solution leaking out of the container. (Waste water should be treated with activated sludge or adsorbed with activated carbon etc.)

7 Handling and Storage
Handling
Technical Measures
Precautions

Storage
Technical Measures
Incompatible substances and mixtures
Storage Conditions
Packaging Materials

Wear protective gear to avoid eye/skin contact and inhalation.
Do not drop the container to prevent the content popping out.
Keep sealed container in freezer.
None specified.
Store under -20°C to avoid deactivating.
Use the initial container of the product.

8 Exposure Controls/Personal Protection
Engineering controls
Occupational exposure limit, biological limit
Personal Protective Equipment
Respiratory Protection
Hand Protection
Eye Protection
Skin and Body Protection

Provide shower and eye washing apparatus nearby.
Not applicable.
Protecting mask
Protecting gloves
Safety goggles
Long sleeve working wear

9 Physical and Chemical Properties
Physical State, form and color
Odour
pH
Flash Point
Explosiveness
Density
Solubility

Powder / White
No odour
ca. pH 5.5 (1% W/V)
No information available.
No information available.
No information available.
Freely soluble in water.

10 Stability and Reactivity
Stability
Possible hazard reactions at specific condition

Conditions to avoid
Materials to avoid
Hazardous Decomposition Products

Stable at temperatures below -20°C. When left for long at room temperature, proteins might be degraded, which does not cause any hazardous reaction.
Prolonged storage under higher temperature than room temperature and high humidity.
May react with strong oxidizing compound.
No information available.
11 Toxicological Information

Acute Toxicity (Oral)  
Skin corrosion/irritation  
Serious eye damage/Eye irritation

LD$_{50}$ 1800mg/kg (Rat)  
May cause irritation  
May cause serious eye irritation.

12 Ecological Information

Acute hazards to the aquatic environment
Persistence /Degradability

Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)  
LC$_{50}$/96hr = 3mg/L (bluegill)

This product is biodegradable and does not remain on the environment for long.

13 Disposal Considerations

Residues

A pollution container and packing

Dispose of in accordance with all applicable local and national laws and regulations.

Wash with copious amounts of water and waste conforming to local regulations depending on the type of the material.

14 Transport Information

International regulations

IMO information  
IATA information

Domestic regulations

Rail and road transportation information  
Marine transportation information  
Aviation transportation information

Specific precautions transport measures and conditions

Not applicable

Not applicable

Not applicable

Not applicable

Avoid direct sunshine and check the container and loading to prevent leakage or turnover, fall and damage. Transport in accordance with regulations. Do not load with foods and feed. Keep at temperatures below -20°C.

15 Regulatory Information

Registration, Evaluation, Authorization and Restriction of Chemicals (EU)

Common Chemical name
Concentration or concentration range
Chemical formula
CAS#  
Regulations

A following component of this product is put on a list of Substances of Very High Concern (SVHC).

Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)  
ca. 1.0% (W/W)

Not specified

9002-93-1

Follow all of laws and regulations in your country.

16 Other Information

Notice

The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may be present unknown hazards and should be used with caution. The SDS is subject to revision as new information becomes available. The information in this SDS, to the best of our knowledge, is accurate and correct. However, TOYOBBO makes no warranty and assumes no liability whatsoever in connection with any use of this information.