



## Safety Data Sheet

### 1 Chemical Product and Company Identification

Identification of the product	<b>Glucoamylase</b>
Product Code	GLA-111
Supplier	
Name	TOYOBO 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
Fax	+81-6-6348-3833
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.
GHS classification	Classification not possible

### 3 Composition/Information on Ingredients

Substance/Mixture	Mixture
Chemical Nature	Glucoamylase
Chemical specificity	Freeze and drying powder including enzyme
Concentration or concentration range	ca 88 % (W/W)
Main components	Cas No
Glucoamylase	9032-08-0
Glycine	56-40-6
Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)	9002-93-1
Ingredients Contributing to the Hazard	
Common Chemical name	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.



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### 6 Accidental Release Measures

Personal Precautions, protective equipment and emergency procedure.	Wear protective gear to avoid eye/skin contact and inhalation. Do not work at leeward.
Environmental Precautions	High concentrated waste fluid should not be directly discharged into rivers.
Methods and materials for containment and cleaning up.	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	Wear protective gear to avoid eye/skin contact and inhalation.
Precautions	Do not drop the container to prevent the content popping out.
Storage	
Technical Measures	Keep sealed container in freezer.
Incompatible substances and mixtures	None specified.
Storage Conditions	Store under -20°C to avoid deactivating.
Packaging Materials	Use the initial container of the product.

### 8 Exposure Controls/Personal Protection

Engineering controls	Provide shower and eye washing apparatus nearby.
Occupational exposure limit, biological limit	Not applicable.
Personal Protective Equipment	
Respiratory Protection	Protecting mask
Hand Protection	Protecting gloves
Eye Protection	Safety goggles
Skin and Body Protection	Long sleeve working wear

### 9 Physical and Chemical Properties

Physical State, form and color	Powder / White
Odour	No odour
pH	ca. pH 5.5 (1% W/V)
Flash Point	No information available.
Explosiveness	No information available.
Density	No information available.
Solubility	Freely soluble in water.

### 10 Stability and Reactivity

Stability	Stable at temperatures below -20°C. When left for long at room temperature, proteins might be degraded, which does not cause any hazardous reaction.
Possible hazard reactions at specific condition	
Conditions to avoid	Prolonged storage under higher temperature than room temperature and high humidity.
Materials to avoid	May react with strong oxidizing compound.
Hazardous Decomposition Products	No information available.



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### 11 Toxicological Information

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

Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)  
LD<sub>50</sub> 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)  
LC50/96hr = 3mg/L (bluegill)  
This product is biodegradable and does not remain on the environment for long.

### 13 Disposal Considerations

Residues

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

A pollution container and packing

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

Not applicable

IATA information

Not applicable

Domestic regulations

Rail and road transportation information

Not applicable

Marine transportation information

Not applicable

Aviation transportation information

Not applicable

Specific precautions transport measures and conditions

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)

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

Common Chemical name

Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)

Concentration or concentration range

ca. 1.0% (W/W)

Chemical formula

Not specified

CAS#

9002-93-1

Regulations

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 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, TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information.