

# SAFETY DATA SHEET

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Prepared: February 20, 2012  
Revised: June 22, 2012

## PULLULAN

### 1. Identification of the Substance and the Company

#### Identification of the substance

Product Name : PULLULAN  
General Use : Cosmetic ingredient

#### Company identification

##### *Manufacturer*

Company Name : Hayashibara Company, Limited  
Address : 1-1-3 Shimoishii, Kita-ku, Okayama 700-0907, JAPAN

##### *Contact in Emergency*

Company Name : Hayashibara Company, Limited  
Address : Nihon-Seimei Okayama Bldg. II Shinkan  
1-1-3 Shimoishii, Kita-ku, Okayama 700-0907, JAPAN  
Responsible Department : International Planning & Marketing Dept.  
Person in Charge : Akihiro hashino  
Telephone : +81-86-224-4327 (9:00 a.m. – 5:30 p.m. Japan time)  
Fax : +81-86-233-2265

### 2. Hazards Identification

**GHS Classification** : NOT HAZARDOUS

**Symbols** : No symbol

**Signal Words** : No signal word

#### **GHS Precautionary Statements**

Prevention : No precautionary phrases.  
Response : No precautionary phrases.  
Storage : No precautionary phrases.  
Disposal : No precautionary phrases.

**Other Hazards which do not result in classification** : Not classified as flammable but will burn.

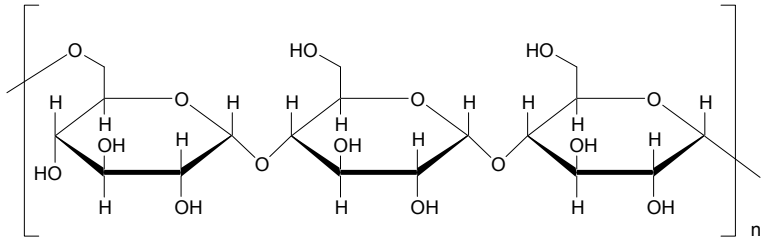
**Emergency Overview** : The product is a highly safe material produced from starch by cultivating a non-pathogenic and non-toxigenic microorganism, *Aureobasidium pullulans*.

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### 3. Composition / Information on Ingredients

|                                      |  |
|--------------------------------------|--|
| <b>Substance/Preparation/Article</b> | : Substance  |
| <b>Purity</b>                        | : Not less than 90%  |
| <b>Chemical Identity</b>             | : Poly[6- $\alpha$ -D-glucopyranosyl-(1 $\rightarrow$ 4)- $\alpha$ -D-glucopyranosyl-(1 $\rightarrow$ 4)- $\alpha$ -D-glucopyranosyl-(1 $\rightarrow$ )] |
| <b>Chemical Formula</b>              | : (C <sub>18</sub> H <sub>30</sub> O <sub>15</sub> ) <sub>n</sub>  |
| <b>Structural Formula</b>            | :<br>  |
| <b>CAS No.</b>                       | : 9057-02-7  |
| <b>REACH Pre-registration No.</b>    | : 05-2114574756-33-0000  |
| <b>EINECS No.</b>                    | : 232-945-1  |

### 4. First Aid Measures

|                            |   |
|----------------------------|---|
| <b>General Information</b> | : Not expected to be a health hazard when used under normal conditions.   |
| <b>Inhalation</b>          | : Remove to fresh air and keep at rest in a position comfortable for breathing.                                       |
| <b>Skin Contact</b>        | : Immediately take off all contaminated clothing. Wash areas thoroughly with water.                                   |
| <b>Eye Contact</b>         | : Immediately flush eyes with a sufficient amount of water. Remove contact lenses if easy to do so. Continue rinsing. |
| <b>Ingestion</b>           | : If material is swallowed in large amounts, get medical attention.   |

Consult a doctor, if symptoms develop or persist after taking the measures above.

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### 5. Fire Fighting Measures

Clear fire area of all non-emergency personnel.

**Extinguish Media** : Dry chemical, foam, carbon dioxide, water fog

**Unsuitable Extinguishing Media** : No information

**Special Fire Fighting** : Position upwind. Keep unnecessary personnel away. Move containers out of hazard area if safe to do so. Keep the containers cool by spraying water if exposed to heat or fire. Cool containers with flooding quantities of water until well after until well after the fire is out.

**Protection for Fire Fighter** : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

### 6. Accidental Release Measures

Avoid contact with spilled or released material. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

**Personal Precautions** : Use personal protection recommended in Chapter 8. Avoid breathing mist and contact with skin and eyes.

**Environment Procedures** : Prevent entry into ditches, sewers and waterways.

**Containment and Cleanup** : Sweep up the spill and dispose of in general trash. Wash residual with water. Spill area can be washed with water for approved disposal. Follow all regulatory requirements for non-hazardous waste disposal.

### 7. Handling and Storage

**Handling** : Use in a well ventilated place. If necessary, use personal protection recommended in Chapter 8. Wash thoroughly after handling. When handling, do not eat, drink or smoke. Coloration and decomposition may occur by moisture absorption.

**Storage** : Keep container tightly closed. Keep in a cool, dark and dry place in order to maintain the quality. Keep securely closed when not in use. Keep away from food, drink and animal feeding stuffs.

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### 8. Exposure Controls / Personal Protection

|  |   |
|--|---|
| <b>Exposure Limit Value</b>  | : Not set.  |
| <b>Exposure Controls</b>   | : No specific controls are needed. If necessary, the following personal protective equipments and materials are applied.                      |
| <b>Personal Protective Equipments and Materials (if necessary)</b> |   |
| Respiratory Protection   | : If ventilation is not sufficient to effectively remove and prevent buildup of dusts, appropriate respiratory protection should be provided. |
| Hand Protection  | : Wear impervious gloves for prolonged contact.   |
| Eye/Face Protection  | : Wear appropriate eye protection.  |
| Skin Protection  | : Wear impervious apron and/or boots for skin protection in case scattering.  |

### 9. Physical & Chemical Properties

|                            |  |
|----------------------------|--|
| <b>Appearance</b>          | : White to light yellowish white powder  |
| <b>Odor</b>                | : Odorless or slight characteristic odor |
| <b>pH</b>                  | : 4.5 – 6.5 (10% water solution)         |
| <b>Aqueous dissolution</b> | : Soluble                                |
| <b>Specific gravity</b>    | : 0.35 (Bulk specific gravity)           |
| <b>Melting point</b>       | : 250°C                                  |
| <b>Flash point</b>         | : Ca. 280°C                              |

### 10. Stability and Reactivity

|   |   |
|---|---|
| <b>Chemical Stability</b>                 | : Stable under ordinary storage conditions.   |
| <b>Possibility of Hazardous Reactions</b> | : Not likely to occur.  |
| <b>Conditions to Avoid</b>                | : Avoid accumulation of airborne dusts. Avoid hot and humid storage.  |
| <b>Materials to Avoid</b>                 | : Avoid contacting strong oxidizing agents, which may react with the product.                                 |
| <b>Hazardous Decomposition Products</b>   | : In case of fire, the product emits carbon monoxide, carbon dioxide and/or low molecule weight hydrocarbons. |

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## PULLULAN

### 11. Toxicological Information

|   |  |
|---|--|
| <b>Acute Oral Toxicity</b>                                | : LD <sub>50</sub> ≥ 14,280 mg/kg and ≥ 24,134 mg/kg in male dd mice and male RF mice by oral administration, respectively.            |
| <b>Subacute Oral Toxicity</b>                             | : NOAEL > 7,914 mg/kg/day and > 9,674 mg/kg/day in male and female rats by oral (feeding) administration, respectively (90 days)       |
| <b>Chronic Toxicity</b>                                   | : NOAEL > 4,450 mg/kg/day and > 5,080 mg/kg/day in male and female rats by oral (feeding) administration, respectively (62 weeks)      |
| <b>Skin Irritation/sensitization</b>                      | : No dermal irritation (25%, RIPT, Human).   |
| <b>Eye Damage/Irritation</b>                              | : Not cause any negative effect (30%, Bovine corneal opacity and permeability test), Practically no irritation (100%, Hen's egg test). |
| <b>Germ Cell Mutagenicity</b>                             | : No data available [Not mutagenicity (standardized AMES assay, and mouse micronucleus and chromosome aberration assays)]              |
| <b>Carcinogenicity</b>                                    | : No data available  |
| <b>Reproductive Toxicity</b>                              | : No data available  |
| <b>Specific Target Organ Toxicity / Single Exposure</b>   | : No data available  |
| <b>Specific Target Organ Toxicity / Repeated Exposure</b> | : No data available  |
| <b>Aspiration Hazard</b>                                  | : No data available  |

### 12. Ecological Information

|   |                      |
|---|----------------------|
| <b>Hazardous to the aquatic environment</b> | : No data available  |
| <b>Hazardous to the ozone layer</b>         | : Not data available |

### 13. Disposal Considerations

Comply with each local regulation.

Follow all regulatory requirements for non-hazardous waste disposal when dump this material into sewers, on the ground or into any body of water.

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## PULLULAN

### 14. Transport Information

#### International transportation regulations

Sea: : Not applicable

Air: : Not applicable

**United Nations Number** : None

The product to be kept in sealed container. Keep away from moisture, high temperatures, and direct sunlight. Container should be protected from breakage. Additional care should be taken to comply with the conditions listed under Chapter 7.

### 15. Regulatory Information

The product is not subject to classification according to the sources of literature known to us.

Please refer to national measures that may be relevant.

### 16. Other Information

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Hayashibara Co., Ltd. It relates only to the specific material designated herein, and does not relate to use in combination with any other material or in any process. Hayashibara Co., Ltd. assumes no legal responsibility for use of or reliance upon this information.