

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
  - **Trade name:** GLUCONO-DELTA-LACTONE
  - **CAS Number:**  
90-80-2
  - **EC number:**  
202-016-5
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Research use only.
- **1.3 Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**  
PINGYUAN DEVELOPMENT ZONE, SHANDONG PROVINCE CHINA  
DEZHOU HUIYANG BIOTECHNOLOGY CO., LTD  
TEL: 0086 534 2169187  
FAX: 0086 534 2169115
- **1.4 Emergency telephone number:** 0086 534 2169187

## SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**  
The substance is not classified according to the CLP regulation.
- **2.2 Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008** Void
  - **Hazard pictograms** Void
  - **Signal word** Void
  - **Hazard statements** Void
- **2.3 Other hazards**
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
  - **CAS No. Description**  
90-80-2 D-Glucono-delta-Lactone
  - **Identification number(s)**
  - **EC number:** 202-016-5

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**
  - **General information:** No special measures required.
  - **After inhalation:** Supply fresh air; consult doctor in case of complaints.
  - **After skin contact:** Generally the product does not irritate the skin.
  - **After eye contact:** Rinse opened eye for several minutes under running water.
  - **After swallowing:** If symptoms persist consult doctor.

- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.

## SECTION 9: Physical and chemical properties

|  |   |
|--|---|
| · <b>9.1 Information on basic physical and chemical properties</b> |   |
| · <b>General Information</b>                                       |   |
| · <b>Appearance:</b>   |   |
| Form:  | Crystalline powder                            |
| Colour:  | White   |
| · Odour:   | Indeterminate                                 |
| · Odour threshold:   | Not determined.                               |
| · pH-value:  | Not applicable.                               |
| · <b>Change in condition</b>                                       |   |
| Melting point/Melting range:                                       | 153 - 163 °C                                  |
| Boiling point/Boiling range:                                       | Undetermined.                                 |
| · Flash point:   | Not applicable.                               |
| · Flammability (solid, gaseous):                                   | Product is not flammable.                     |
| · <b>Ignition temperature:</b>                                     |   |
| Decomposition temperature:   | Not determined.                               |
| · Self-igniting:   | Not determined.                               |
| · Danger of explosion:   | Product does not present an explosion hazard. |
| · <b>Explosion limits:</b>   |   |
| Lower:   | 27,5 Vol %                                    |
| Upper:   | 2 Vol %                                       |
| · Vapour pressure:   | Not applicable.                               |
| · Density at 20 °C:  | 0,6 g/cm <sup>3</sup>                         |
| · Relative density   | Not determined.                               |
| · Vapour density   | Not applicable.                               |
| · Evaporation rate   | Not applicable.                               |
| · Solubility in / Miscibility with                                 | -   |
| · water at 20 °C:  | 500 g/l<br>Easily soluble.                    |
| · Partition coefficient (n-octanol/water):                         | Not determined.                               |
| · <b>Viscosity:</b>  |   |
| Dynamic:   | Not applicable.                               |
| Kinematic:   | Not applicable.                               |
| · 9.2 Other information  | No further relevant information available.    |

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.

- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Smaller quantities can be disposed of with household waste.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## SECTION 14: Transport information

- |  |               |
|--|---------------|
| · <b>14.1 UN-Number</b>                  |               |
| · <b>ADR, ADN, IMDG, IATA</b>            | Not regulated |
| · <b>14.2 UN proper shipping name</b>    |               |
| · <b>ADR, ADN, IMDG, IATA</b>            | Not regulated |
| · <b>14.3 Transport hazard class(es)</b> |               |
| · <b>ADR, ADN, IMDG, IATA</b>            |               |
| · <b>Class</b>                           | Not regulated |
| · <b>14.4 Packing group</b>              |               |
| · <b>ADR, IMDG, IATA</b>                 | Not regulated |

|   |                 |
|---|-----------------|
| · 14.5 Environmental hazards:   | Not applicable. |
| · 14.6 Special precautions for user                                       | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |
| · UN "Model Regulation":  | Not regulated   |

## SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I Substance is not listed.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing MSDS: Product safety department

- Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative