1. Identification of the substance/mixture

Designation: GlucaGen®
Synonyms: Glucagon (rDNA origin) for Injection
Identified uses: Pharmaceutical Product
Company: Boehringer-Ingelheim Pharmaceuticals, Incorporated
900 Ridgebury Road
Ridgefield, Connecticut 06877-0368

Emergency Contact Number: 800-424-9300 CHEMTREC Emergency Phone Number
Routine Contact Number: (203) 778-7759

2. Hazards Identification

Classification:
This product is a non-hazardous mixture of single components and need not be labelled according to Globally Harmonized System. May form combustible dust concentrations in air.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Classification</th>
<th>GHS classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptide</td>
<td></td>
<td></td>
<td>0.93 %</td>
</tr>
<tr>
<td>Molecular formula:</td>
<td>C153-H225-N43-O49-S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lactose Monohydrate</td>
<td></td>
<td></td>
<td>99.07 %</td>
</tr>
<tr>
<td>Molecular formula:</td>
<td>C12-H22-O11 x H2O</td>
<td>CAS-No. 5989-81-1</td>
<td></td>
</tr>
<tr>
<td>Molecular weight:</td>
<td>360.31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. First-aid Measures

General advice: Remove from exposure, lie down. Immediately remove contaminated clothing. If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. First aid personnel should pay attention to their own safety.

Eye contact: Rinse immediately with plenty of water for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately.

Skin contact: Wash off immediately with plenty of water. Call a physician immediately.

Inhalation: Move to fresh air. Call a physician immediately.

Ingestion: Rinse mouth. Drink plenty of water. Call a physician immediately.

Notes to physician

Symptoms: Tachycardia, Nausea, Vomiting
Treatment: Observe the summary of product characteristics of proprietary medicinal products
5. Fire-fighting Measures

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water, Dry chemical, Foam, Carbon dioxide (CO2).

Hazards during fire-fighting: Product itself is non-combustible. In case of fire and/or explosion do not breathe fumes. Can be released in case of fire: Carbon oxides, Nitrogen oxides (NOx), Sulfur oxides.

Protective equipment for fire-fighting: Self-contained breathing apparatus (EN 133) complete suit protecting against chemicals.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

6. Accidental Release Measures

Personal precautions: Wear personal protective equipment. Refer to protective measures listed in sections 7 and 8. Keep people away from and upwind of spill/leak. Ensure adequate ventilation.

Environmental precautions: Do not flush into surface water or sanitary sewer system.

Methods for cleaning-up or taking-up: Cleaning operations should be carried out only while wearing breathing apparatus. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Non-sparking tools should be used. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). For large amounts: Dampen, pick up mechanically and dispose of. For residues: Use approved industrial vacuum cleaner for removal. Pack in tightly closed containers for disposal.

Additional information: Never return spills in original containers for re-use.

7. Handling and Storage

Advice on safe handling: Provide sufficient air exchange and/or exhaust in work rooms. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Minimize dust generation and accumulation. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Breathing must be protected when large quantities are decanted without local exhaust ventilation. Keep container closed when not in use.

Hints for protection against fire and explosion: Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Avoid dust formation.

Hygienic measures: General industrial hygiene practice. Wash hands and face before breaks and immediately after handling the product. Keep working clothes separately.
**Storage**

Requirements for storage rooms and vessels: Keep tightly closed in a dry and cool place. Keep in a well-ventilated place. Protect from heat and direct sunlight. Jointless smooth floor.

Advice on storage compatibility: Keep away from food, drink and animal feed. Advice on Segregation

Storage class: Combustible Solids

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**8. Exposure controls/personal protections**

**Exposure controls**

Advice on system design: It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

**Personal protective equipment**

Respiratory protection: Use NIOSH approved respiratory protection if exposed to vapors/dust/aerosol.

Hand protection: Chemical resistant protective gloves

Eye protection: Safety glasses with side-shields

Body protection: Laboratory: laboratory coat; factory: chemical protection overall if dust is formed.

Additional information: Only use protective equipment in accordance with national/international regulations. Follow the national regulations about wearing personal protective equipment and the warranty given by the manufacturer for the safe function.

General protective measures: Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust. Avoid contact with skin, eyes and clothing.

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**9. Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>powder</td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH value</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Lower explosion limit : No data available
Upper explosion limit : No data available
Vapor pressure : Not applicable
Relative vapor density : Not applicable
Relative density : No data available
Solubility in water : 0.1 g/l
Partitioning coefficient n-octanol/water (log Pow) : No data available
Thermal decomposition : No data available
Viscosity, dynamic : Not applicable
Explosiveness : Not tested

Further information
Bulk density : No data available

10. Stability and Reactivity
Hazardous reactions : Dust may form explosive mixture in air.
Conditions to avoid : Extremes of temperature and direct sunlight.
Substances to avoid : No data available
Hazardous decomposition products : No data available

11. Toxicological Information
Acute oral toxicity : No data available
Acute inhalation toxicity : No data available
Acute dermal toxicity : No data available
Acute toxicity (other route) : LD50 intravenous > 100 mg/kg Rat
                          : LD50 subcutaneous > 100 mg/kg Rat
Skin irritation : No data available
Eye irritation : No data available
Sensitization : No data available
Genetic toxicity in vitro : No data available
Genetic toxicity in vivo : No data available
Carcinogenicity : No data available
Reproductive toxicity : No data available
Teratogenicity : No data available
Aspiration hazard : No data available
12. Ecological information

Ecotoxicity
- Toxicity to fish: No data available
- Toxicity to daphnia: No data available
- Toxicity to algae: No data available
- Toxicity to bacteria: No data available
- Chronic toxicity to fish: No data available
- Chronic toxicity to aquatic invertebrates: No data available

Persistence and degradability
- Biological degradation: No data available
- Bioaccumulation: No data available
- PBT and vPvB assessment: Non-classified vPvB substance, Non-classified PBT substance

13. Disposal Considerations

Product: Dispose of in accordance with local regulations.
Contaminated packaging: Packs that cannot be cleaned should be disposed of in the same manner as the contents. Uncontaminated packaging can be recycled.

14. Transport Information

Further information: Not classified as dangerous for conveyance in the meaning of the regulations for the transport of dangerous goods by road and rail. Not classified as dangerous in the meaning of sea and air transport regulations.

15. Regulatory information

National legislation/regulations
- Water hazard class: VWVWS
  WGK 1 slightly water endangering
  Annex 4 VvVwS (Germany) dated Mai, 17 th 1999

16. Other particulars

Prepared by: Environmental Health & Safety
Date Prepared: February 20, 2015
Replaces: N/A

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.