1. Identification

Product identifier: Glucagon™

Other means of identification:
- Item Code: MS8009, VL0660, VL7519, VL7286, AM0668, UC9527, AM7220, MS8085, AM0666, MS8031, VL7166, VL7220, MS8030, VL0666, MS8239, AM7078, VL7529
- LY Number: LY21411

Recommended use: Pharmaceutical

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer:
- Company name: Eli Lilly and Company
- Address: Lilly Corporate Center, Indianapolis, IN 46285, United States
- Telephone: Phone: +1-317-276-2000
- E-mail: United States: lilly_msds@lilly.com
- Emergency phone number: CHEMTREC: +1-800-424-9300

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards: Not classified.

OSHA defined hazards: Not classified.

Label elements
- Hazard symbol: None.
- Signal word: None.
- Hazard statement: The mixture does not meet the criteria for classification.

Precautionary statement
- Prevention: Not available.
- Response: Not available.
- Storage: Not available.
- Disposal: Not available.

Hazard(s) not otherwise classified (HNOC): None known.

Supplemental information: Not applicable.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucagon</td>
<td></td>
<td>16941-32-5</td>
<td>2</td>
</tr>
</tbody>
</table>

Composition comments: Remaining components of this product are non-hazardous and/or are present at concentrations below reportable levels.

4. First-aid measures

Inhalation: Remove to fresh air. If breathing stops, provide artificial respiration. Get medical attention immediately.

Skin contact: Wash off immediately with plenty of water for at least 15 minutes. Immediately take off all contaminated clothing. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Eye contact: Immediately flush eye(s) with plenty of water. Get medical attention.
Ingestion: Consult a physician.

Most important symptoms/effects, acute and delayed: None known.

5. Fire-fighting measures

Suitable extinguishing media: Carbon dioxide, dry chemical or water.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Hazardous decomposition products formed under fire conditions.

Special protective equipment and precautions for firefighters: Wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear suitable protective clothing, gloves and eye/face protection. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up: Do not sweep. Collect spill using a vacuum cleaner with a HEPA filter. If vacuum is not available, lightly mist/wet material and remove by mopping or wet wiping.

Environmental precautions: Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits:

<table>
<thead>
<tr>
<th>Lilly (LEG) Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucagon (CAS 16941-32-5)</td>
<td>STEG (15min)</td>
<td>1600 ug/m3</td>
</tr>
<tr>
<td></td>
<td>TWA (12hrs)</td>
<td>160 ug/m3</td>
</tr>
<tr>
<td></td>
<td>TWA (8hrs)</td>
<td>160 ug/m3</td>
</tr>
</tbody>
</table>

Biological limit values: No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls: Open handling is not recommended. Use appropriate control measures such as fume hood, ventilated enclosure, local exhaust ventilation, or down-draft booth.

Individual protection measures, such as personal protective equipment:

- Eye/face protection: Wear goggles/face shield.
- Skin protection: Chemical-resistant gloves and impermeable body covering to minimize skin contact.
- Hand protection: Not available.
- Other: Not available.
- Respiratory protection: Use an approved respirator. Select appropriate respirator for physical characteristics of material. Select respirator with appropriate protection factor. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the respirator.
- Thermal hazards: Not available.

9. Physical and chemical properties

Appearance:

- Physical state: Solid.
- Form: Lyophilized cake
- Color: White
- Odor: Odorless
- Odor threshold: No data available.
- pH: No data available.
Melting point/freezing point  
Initial boiling point and boiling range  
Flash point  
Evaporation rate  
Flammability (solid, gas)  
Upper/lower flammability or explosive limits  
Flammmability limit - lower (%)  
Flammmability limit - upper (%)  
Explosive limit - lower (%)  
Explosive limit - upper (%)  
Vapor pressure  
Vapor density  
Relative density  
Solubility(ies)  
Solubility (water)  
Partition coefficient (n-octanol/water)  
Auto-ignition temperature  
Decomposition temperature  
Viscosity  
Other information  
Density  
Explosive properties  
Oxidizing properties  
VOC  

10. Stability and reactivity  
Reactivity  
Chemical stability  
Possibility of hazardous reactions  
Conditions to avoid  
Incompatible materials  
Hazardous decomposition products  

11. Toxicological information  
Information on toxicological effects  
Acute toxicity  
Components  
Glucagon (CAS 16941-32-5)  
Acute  
Other  
Species  
Test Results  
Mouse  
300 mg/kg (Intravenous) (No mortality.)  
Rat  
300 mg/kg Subcutaneous (No mortality)  
20 mg/kg Intravenous (No mortality)  
Skin corrosion/irritation  
Serious eye damage/eye irritation  
Due to lack of data the classification is not possible.
**Respiratory or skin sensitization**

Respiratory sensitization  
Due to lack of data the classification is not possible.

Skin sensitization  
Due to lack of data the classification is not possible.

Germ cell mutagenicity  
Negative in in vitro genetic toxicity assays. (Glucagon)

Due to inconclusive data the classification criteria are not met.

Carcinogenicity  
No carcinogenicity data available for this product.

Due to lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity  
Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)  
Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens  
Not listed.

Reproductive toxicity  
In pregnant rats given animal sourced glucagon twice-daily by injection at doses up to 2 mg/kg during the period of organogenesis, there was no evidence of increased malformations or embryofetal lethality. Studies in rats have shown that glucagon does not cause impaired fertility. (Glucagon)

Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure  
Due to lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure  
Animal studies have reported the following effects: Change in heart rate or rhythm. Elevated blood sugar levels. Liver effects. Kidney effects. Lung effects. (Glucagon) (subcutaneous)  
Based on available data, the classification criteria are not met.

Aspiration hazard  
Not applicable.

Further information  
The following hazards may be associated with accidental or therapeutic injection: Elevated blood sugar levels.

**12. Ecological information**

Ecotoxicity  
Not available.

Persistence and degradability  
No data is available on the degradability of this product.

Bioaccumulative potential  
No data available on bioaccumulation.

Mobility in soil  
Not available.

Other adverse effects  
Not available.

**13. Disposal considerations**

Disposal instructions  
Dispose in accordance with all applicable regulations.

**14. Transport information**

DOT  
Not regulated as dangerous goods.

IATA  
Not regulated as dangerous goods.

IMDG  
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  
Not available.

**15. Regulatory information**

US federal regulations  
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)  
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)  
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)  
Not listed.
SARA 304 Emergency release notification
Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not regulated.
Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 313 (TRI reporting)
Not regulated.
Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.
International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 11-18-2014
Revision date 08-01-2019
Version # 04

List of abbreviations
STEG: Short Term Exposure Guideline.
TWA: Time Weighted Average

Disclaimer
As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered with the good faith belief that it is accurate. THIS SAFETY DATA SHEET SHALL NOT BE DEEMED TO CREATE ANY WARRANTY OF ANY KIND (INCLUDING WARRANTY OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE). In the event of an adverse incident associated with this material, this safety data sheet is not intended to be a substitute for consultation with appropriately trained personnel. Nor is this safety data sheet intended to be a substitute for product literature which may accompany the finished product.

For additional information contact:
Eli Lilly and Company
Hazard Communication
+1-317-651-9533