

**GlucaGen**<sup>®</sup> [(Glucagon (rDNA origin) for Injection)]

We are providing information relevant to the handling of this material in the workplace. In the event of any adverse event associated with this material, this MSDS is not intended to be a substitute for consultation with appropriately trained personnel. The information below is believed to be accurate and represents the best information currently available. However, we make no warranty expressed or implied, with respect to such information, and we assume no liability resulting from its use.

This MSDS is not a substitute for the directions for use that accompany this product.

Trade name	GlucaGen <sup>®</sup>	CAS-NO.	16941-32-5 (active substance)		
Chemical name	Aqueous solution for injection containing glucagon	NDC NO.	0169-7065-15		
Synonyms	-	INDEX NO.	-		
Novo Nordisk item no.	706515				
<b>COMPOSITION / INFORMATION ON CONTENTS</b>					<b>2</b>
Class of risks	Not classified	Hazard symbols			
Risk-phrases	No R-phrases				
Safety-phrases	No S-phrases				
<b>HAZARDS IDENTIFICATIONS</b>					<b>3</b>
HAZARDOUS PROPERTIES	Swallowing: Ingestion of material is not known to result in significant adverse health effect.				
Acute effects	Inhalation: Inhalation of aerosols is not known to cause adverse health effects.				
	Skin contact: May cause possible mild skin irritation.				
	Eye contact: May cause possible mild irritation.				
Chronicle effects	Repeated exposure to GlucaGen can result in a sensitization and allergic response in hypersensitive individuals.				
FLAMMABLE PROPERTIES	GlucaGen <sup>®</sup> is not combustible.				
<b>FIRST AID MEASURES</b>					<b>4</b>
Consumption	Rinse out mouth thoroughly with water and give plenty of water. Do NOT provoke vomiting. If necessary, seek medical advice if symptoms persist.				
Inhalation	Go out into fresh air. Seek medical attention if respiratory symptoms occur.				
Eye contact	Rinse out with water for at least 15 minutes. If necessary, seek medical advice.				
Skin contact	Remove contaminated clothes and rinse contaminated skin for at least 15 minutes with water and soap. Seek medical advice if symptoms persist.				

Novo Nordisk Inc	<b>MATERIAL SAFETY DATA SHEET</b> <b>GlucaGen<sup>®</sup></b> [(Glucagon (rDNA origin) for Injection)]
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PRECAUTIONS IN CASE OF FIRE	5
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No special precautions.

ACCIDENTIAL RELEASE MEASURES	6
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Absorb liquid spill into an absorbent e.g.: sand/vermiculite.  
Clean contaminated surfaces with excess of water.  
Use personal protection during the clean-up.

HANDLING AND STORAGE	7
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GlucaGen<sup>®</sup> must be kept in a dry cool place in tightly closed original packing.

EXPOSURE CONTROLS / PERSONAL PROTECTION	8
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Limit value	none	Smell limit value	-
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Avoid inhalation of aerosols.  
If necessary, use breathing protection (P2-particle filter, authorized for aerosols).  
Avoid contact with the skin.  
Wear gloves (e.g. PVC-disposable gloves).  
There must be easy access to running water, emergency water spray / eye-wash bottle on the spot.

PHYSICAL AND CHEMICAL PROPERTIES	9
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Chemical formula	C <sub>153</sub> H <sub>225</sub> N <sub>43</sub> O <sub>49</sub> S	Water-solubility	-
Appearance	Colorless liquid with no smell	Molecular weight	3483 D
Density	1.005	Melting point	Not applicable
Boiling point	100°C	Flash point	Not applicable
Viscosity	-	Vapor pressure	Not applicable
Explosion limits	Not applicable	Auto-ignition point	Not applicable
pH value	App. 2.5 – 3.5	Octanol/water coefficient	Not applicable

STABILITY AND REACTIVITY	10
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GlucaGen<sup>®</sup> is stable under normal circumstances.

TOXICOLOGICAL DATA	11
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LD <sub>50</sub> -value, oral (rat)	-	LD <sub>50</sub> -value, dermatological (rat)	-
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Long-term adverse effects:	No	Under suspicion	Yes	Contradictory information	No information
Carcinogenic	X				
Allergy (contact allergy)					X
Allergy (inhalation allergy)					X
Teratogenic	X				
Nerve-damaging	X				

<b>ENVIRONMENT INFORMATION</b>	<b>12</b>
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GlucaGen<sup>®</sup> does not do harm to the environment.

<b>WASTE DISPOSAL CONSIDERATIONS</b>	<b>13</b>
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Spillage and waste are to be collected in proper receptacles. Dispose at an approved site according local regulations regarding disposal.

Chemical waste group	Z	Chemical waste card	-
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<b>TRANSPORT INFORMATION</b>	<b>14</b>
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Department of Transportation	Not regulated for domestic or international transport
International Civil Aviation Organization	Not regulated for domestic or international transport
International Maritime Organization	Not regulated for domestic or international transport

<b>REGULATORY INFORMATION</b>	<b>15</b>
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No special regulations.

<b>OTHER INFORMATION</b>	<b>16</b>
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There are no special demands for education but persons handling GlucaGen should be familiar with the instructions mentioned in these directions for use.

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