

Kit SDS Cover Sheet BEGM® SingleQuots®

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

Product Information

Commercial
Product Name: Clonetics®Product name: BEGM® SingleQuots®Material number: CC-4175

Components

BPE High Protein - non specific	SDS attached
Recombinant human insulin 0.5%	SDS attached
Hydrocortisone solution	SDS attached
GA-1000	SDS attached
Retinioc Acid	SDS attached
Transferrin	SDS attached
TRIIODOTHYRONINE	SDS attached
Epinephrine	SDS attached
HEGF, 0.5 UG/ML FOR USE IN BEGM KIT	SDS attached



according to Regulation (EC) No. 1907/2006

BPE High Protein - non specific

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BEGM® SingleQuots®

Print Date 04.12.2020

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

1.1 Product identifier

<02GCG_BRAND1[D:Product Name]>

Product name

1.2 Relevant identified uses of the substance or mixture and uses advised against

:

- Use of the Substance/Mixture
- : Scientific research and development

1.3 Details of the supplier of the safety data sheet

Company	 Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11
	Lonza Verviers Sprl Parc Industriel de Petit-Rechain BE-4800 Verviers, Belgium Business Telephone: +32 8732 1611
	Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990
	Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400
E-mail address Responsible/issuing person	sds@lonza.com
1.4 Emergency telephone number Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switzerland Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.



according to Regulation (EC) No. 1907/2006

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures	_	No openial processions required
If inhaled	:	No special precautions required.
In case of skin contact	:	Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.
If swallowed	:	Immediately give large quantities of water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
4.2 Most important symptoms and effe	ects	, both acute and delayed
Symptoms	:	No information available.
4.3 Indication of any immediate medic	al at	-
Treatment	:	No information available.
SECTION 5: Firefighting measures		
5.1 Extinguishing media		
Suitable extinguishing media	:	Water spray Dry powder Foam
5.2 Special hazards arising from the su	ubs	tance or mixture
		Heating or fire can release toxic gas.
5.3 Advice for firefighters		
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Pof / 00000028641		



according to Regulation (EC) No. 1907/2006

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Further information	: Use water spray to cool unopened	d containers.
SECTION 6: Accidental release meas	sures	
6.1 Personal precautions, protective equ	uipment and emergency procedure	s
Personal precautions	: Use personal protective equipment	nt.
6.2 Environmental precautions		
Environmental precautions	: Prevent product from entering dra	ains.
6.3 Methods and material for containme	nt and cleaning up	
Methods for cleaning up	: Contain spillage, and then collect absorbent material, (e.g. sand, ea vermiculite) and place in containe local / national regulations (see se	arth, diatomaceous earth, er for disposal according to
6.4 Reference to other sections		
For personal protection see section 8.		
SECTION 7: Handling and storage		
7.1 Precautions for safe handling		
Advice on safe handling	: No special precautions required.	
Advice on protection against fire and explosion	: Take precautionary measures aga	ainst static discharges.
Hygiene measures	: Handle in accordance with good in practice.	ndustrial hygiene and safety
7.2 Conditions for safe storage, includin	g any incompatibilities	
Requirements for storage areas and containers	: No special storage conditions req	uired.
7.3 Specific end use(s)		
Specific use(s)	: No information available.	



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SECTION 8: Exposure controls/personal protection			
8.1 Control parameters			
Occupational Exposure Limits			
Contains no substances with occupational exposure limit values.			

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8.2 Exposure controls

Engineering measures Avoid splashes.		
Personal protective equipment		Tightly fitting options
Eye protection	•	Tightly fitting safety goggles
Hand protection Material Rate of permeability	:	Nitrile rubber > 480 min
	•	
Skin and body protection	:	Choose body protection according to the amount and concentration of the dangerous substance at the work place. No special protective equipment required.
Respiratory protection	:	No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	no data available
Odour	:	no data available
Odour Threshold	:	no data available
рН	:	no data available
Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	does not flash
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available



according to Regulation (EC) No. 1907/2006

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Vapour pressure	no data available			
Relative vapour density	: no data available			
Relative density	: no data available			
Density	: no data available			
Solubility(ies) Water solubility	soluble			
Partition coefficient: n-octanol/water	: no data available			
Auto-ignition temperature	no data available			
Decomposition temperature	: no data available			
Viscosity	: no data available			
Explosive properties	no data available			
Oxidizing properties	: no data available			
9.2 Other information				

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	: Stable under normal conditions.
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10.4 Conditions to avoid

Conditions to avoid : no data available

10.5 Incompatible materials Materials to avoid

: Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Further information



according to Regulation (EC) No. 1907/2006

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	Remarks: No data is available on the product itself.		
SECTION 12: Ecological information	on		
12.1 Toxicity			
Toxicity to fish	: Remarks: no data available		
12.2 Persistence and degradability			
Biodegradability	: Result: no data available		
12.3 Bioaccumulative potential			
Bioaccumulation	: Remarks: no data available		
12.4 Mobility in soil			
Distribution among environmental compartments	: Remarks: no data available		
12.5 Results of PBT and vPvB assess	ment		
Assessment	: This substance/mixture contains no be either persistent, bioaccumulative persistent and very bioaccumulative higher.	ve and toxic (PBT), or very	
12.6 Other adverse effects			
Additional ecological information	: no data available		

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

: Dispose of in accordance with local regulations.



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Not dangerous goods

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SECTION 14: Transport information

IATA

14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no
IMDG		Not dangerous goods
14.1 14.2 14.3 14.4 14.5 ADR	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable Marine pollutant: no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 RID	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no Not dangerous goods
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no



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TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable	

SECTION 15: Regulatory information

 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
REACH - Candidate List of Substances of Very High Concern : Not applicable for Authorisation (Article 59).
REACH - List of substances subject to authorisation (Annex : Not applicable XIV)
Regulation (EC) No 1005/2009 on substances that deplete the : Not applicable ozone layer
Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. Not applicable
National regulatory information
Water contaminating class: nwg not water endangering Classification according to AwSV, Annex 1 (2.2)
15.2 Chemical safety assessment
not required
SECTION 16: Other information

Further information

Full text of other abbreviations



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ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant: DIN - Standard of the German Institute for Standardisation: DNEL-Derived No Effect Level: DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV - Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value; MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NIOSH/Guide - National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail: STEL - Short-Term Exposure Limit: TDG - Transportation of Dangerous Goods: TGG -Dutch Threshold Limit Value; TGV – Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

dd.mm.yyyy

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 a 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.

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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according to Regulation (EC) No. 1907/2006

Recombinant human insulin 0.5%

Version 2.0

Revision Date 12.12.2018

: BEGM® SingleQuots®

Print Date 04.12.2020

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

1.1 Product identifier

<02GCG_BRAND1[D:Product Name]>

Product name

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Use of the Substance/Mixture
- : Scientific research and development

1.3 Details of the supplier of the safety data sheet

Company	: Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11
	Lonza Verviers Sprl Parc Industriel de Petit-Rechain BE-4800 Verviers, Belgium Business Telephone: +32 8732 1611
	Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990
	Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400
E-mail address Responsible/issuing person	sds@lonza.com
1.4 Emergency telephone number Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switzerland Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.



according to Regulation (EC) No. 1907/2006

Recombinant human insulin 0.5%

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Insulin: may cause hypoglycaemia. Insulin is inactivated in the gastro-intestinal tract when ingested.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Descri	ption of	first aid	measures
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If inhaled	: No special precautions required.
In case of skin contact	: Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	: Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.
If swallowed	: Immediately give large quantities of water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms :	:	No information available.
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4.3 Indication of any immediate medical attention and special treatment needed

Treatment	: No information av	ailable.

SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable extinguishing media	:	Water spray Dry powder Foam
5.2 Special hazards arising from the su Specific hazards during firefighting		
5.3 Advice for firefighters Special protective equipment for	:	In the event of fire, wear self-contained breathing apparatus.



according to Regulation (EC) No. 1907/2006

Recombinant human insulin 0.5%

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firefighters			
Further information	:	Use water spray to cool unopened conta	iners.
SECTION 6: Accidental release mea	su	ires	
6.1 Personal precautions, protective eq	uip	oment and emergency procedures	
Personal precautions	:	Use personal protective equipment.	
6.2 Environmental precautions			
Environmental precautions	:	No special environmental precautions re	quired.
6.3 Methods and material for containme	ent	and cleaning up	
Methods for cleaning up	:	Wipe up with absorbent material (e.g. clo Dispose of in accordance with local regu	
6.4 Reference to other sections			
For personal protection see section 8			
SECTION 7: Handling and storage			
7.1 Precautions for safe handling			
Advice on safe handling	:	No special precautions required.	
Advice on protection against fire and explosion	:	No special precautions required.	
Hygiene measures	:	Handle in accordance with good industria practice.	al hygiene and safety
7.2 Conditions for safe storage, includir	nq	any incompatibilities	
_	-	No special storage conditions required.	
7.3 Specific end use(s)			
Specific use(s)	:	No information available.	



according to Regulation (EC) No. 1907/2006

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SECTION 8: Exposure controls/personal protection						
8.1 Control parameters						

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures Use only in area provided with appropriate exhaust ventilation.				
Personal protective equipment				
Eye protection	: Tightly fitting safety goggles			
Hand protection Material Rate of permeability	Nitrile rubber > 480 min			
Skin and body protection	 Choose body protection according to the amount and concentration of the dangerous substance at the work pla No special protective equipment required. 	ICe.		
Respiratory protection	: No personal respiratory protective equipment normally required.			

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	colourless
Odour	:	odourless
Odour Threshold	:	no data available
рН	:	2 - 4
Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	Water
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available



according to Regulation (EC) No. 1907/2006

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Vapour pressure	: no data available	
Relative vapour density	: no data available	
Relative density	: no data available	
Density	: no data available	
Solubility(ies) Water solubility	: completely soluble	
Partition coefficient: n-octanol/water	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature	: no data available	
Viscosity	: no data available	
Explosive properties	: no data available	
Oxidizing properties	: no data available	
9.2 Other information		

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	: Stable under normal conditions.
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10.4 Conditions to avoid

Conditions to avoid : no data available

10.5 Incompatible materials Materials to avoid

: Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Skin corrosion/irritation



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		Assessment: No skin irritation	
Serious eye damage/eye irritation			
		Assessment: No eye irritation	
Further information			
		Remarks: No data is available on the pr	roduct itself.
		Remarks: Insulin: may cause hypoglyca Insulin is inactivated in the gastro-intest ingested. May cause central nervous system dep May induce sweating, pallor or visual di	tinal tract when ression.
SECTION 12: Ecological informatio	n		_
12.1 Toxicity			
Toxicity to fish	:	Remarks: no data available	
12.2 Persistence and degradability			
Biodegradability	:	Result: no data available	
12.3 Bioaccumulative potential			
Bioaccumulation	:	Remarks: no data available	
12.4 Mobility in soil			
Distribution among environmental compartments	:	Remarks: no data available	
12.5 Results of PBT and vPvB assessn	nen	t	
Assessment	:	This substance/mixture contains no con be either persistent, bioaccumulative ar persistent and very bioaccumulative (vF higher.	nd toxic (PBT), or very
12.6 Other adverse effects			
Additional ecological information	:	no data available	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

: Contact waste disposal services. Dispose of in accordance with local regulations.



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Not dangerous goods

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SECTION 14: Transport information

IATA

14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no
IMDG		Not dangerous goods
14.1 14.2 14.3 14.4 14.5 ADR	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable Marine pollutant: no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 RID	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no Not dangerous goods
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no



according to Regulation (EC) No. 1907/2006

Recombinant human insulin 0.5%

Versior	n 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable de	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

 REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) REACH - Candidate List of Substances of Very High Concern : Not applicable for Authorisation (Article 59). REACH - List of substances subject to authorisation (Annex : Not applicable XIV) Regulation (EC) No 1005/2009 on substances that deplete the : Not applicable corne layer Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. Not applicable 			
 for Authorisation (Article 59). REACH - List of substances subject to authorisation (Annex : Not applicable XIV) Regulation (EC) No 1005/2009 on substances that deplete the : Not applicable ozone layer Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. 	market and use of certain dangerous substances, preparations	:	Not applicable
 XIV) Regulation (EC) No 1005/2009 on substances that deplete the : Not applicable ozone layer Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. 	, ,	:	Not applicable
ozone layer Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	.	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	S ()	:	Not applicable
major-accident hazards involving dangerous substances.	Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
	major-accident hazards involving dangerous substances.	nd c	of the Council on the control of

National regulatory information

Water contaminating class : nwg not water endangering (Germany)

15.2 Chemical safety assessment

not required

SECTION 16: Other information

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -

according to Regulation (EC) No. 1907/2006

Recombinant human insulin 0.5%

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Revision Date 12.12.2018

Print Date 04.12.2020

Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DNEL-Derived No Effect Level; DOT Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV - Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value: MARPOL - International Convention for the Prevention of Pollution from Ships: n.o.s. - Not Otherwise Specified; NIOSH/Guide - National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG -Dutch Threshold Limit Value; TGV – Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

dd.mm.yyyy

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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according to Regulation (EC) No. 1907/2006

Hydrocortisone solution

Version 2.0

Revision Date 12.12.2018

BEGM® SingleQuots®

Print Date 04.12.2020

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

1.1 Product identifier

<02GCG_BRAND1[D:Product Name]>

Product name

1.2 Relevant identified uses of the substance or mixture and uses advised against

:

Use of the Substance/Mixture

: Scientific research and development

1.3 Details of the supplier of the safety data sheet

Company	 Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11
	Lonza Verviers Sprl Parc Industriel de Petit-Rechain BE-4800 Verviers, Belgium Business Telephone: +32 8732 1611
	Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990
	Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400
E-mail address Responsible/issuing person	sds@lonza.com
1.4 Emergency telephone number Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switzerland Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2 Eye irritation, Category 2 H225: Highly flammable liquid and vapour. H319: Causes serious eye irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)



according to Regulation (EC) No. 1907/2006

Hydrocortisone solution

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
Hazard pictograms		
Signal word	: Danger	
Hazard statements	: H225 Highly flammable liquid an H319 Causes serious eye irritation	
Precautionary statements	Prevention: P210 Keep away from heat, hot flames and other ignition sources. P233 Keep container tightly clos P280 Wear protective gloves/ pr protection/ face protection.	No smoking. sed.
	Response: P303 + P361 + P353 IF ON SKI immediately all contaminated cloth P337 + P313 If eye irritation per- attention. P370 + P378 In case of fire: Use alcohol-resistant foam to extinguis	ning. Rinse skin with water. sists: Get medical advice/ e dry sand, dry chemical or

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. REACH Registration Number	Classification	Concentration (% w/w)
Ethanol	64-17-5 603-002-00-5 01-2119457610-43-XX XX	Flam. Liq. 2; H225 Eye Irrit. 2; H319	>= 90 - <= 100

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled

: Remove to fresh air.



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		If breathing is irregular or stopped, admini respiration.	ster artificial
In case of skin contact	:	After contact with skin, wash immediately and water.	with plenty of soap
		Consult a physician.	
In case of eye contact	:	In the case of contact with eyes, rinse immof water and seek medical advice. Call a physician immediately.	nediately with plenty
If swallowed	:	If accidentally swallowed obtain immediate Clean mouth with water and drink afterwa Do not induce vomiting without medical ac Never give anything by mouth to an uncor	rds plenty of water. dvice.
4.2 Most important symptoms and effe	ects,	both acute and delayed	
Symptoms	:	No information available.	
4.3 Indication of any immediate medic	al at	tention and special treatment needed	
Treatment	:	No information available.	
Suitable extinguishing media	:	Dry powder Water spray Foam	
2 Special bazards arising from the s	uhst	ance or mixture	
5.2 Special hazards arising from the second	ubst :	Heating or fire can release toxic gas.	
Specific hazards during firefighting			
			eathing apparatus.
5.3 Advice for firefighters Special protective equipment for		Heating or fire can release toxic gas.	
 Specific hazards during firefighting 5.3 Advice for firefighters Special protective equipment for firefighters 	:	Heating or fire can release toxic gas. In the event of fire, wear self-contained br Use water spray to cool unopened contain	
Specific hazards during firefighting 5.3 Advice for firefighters Special protective equipment for firefighters Further information SECTION 6: Accidental release me	: : easu	Heating or fire can release toxic gas. In the event of fire, wear self-contained br Use water spray to cool unopened contair res	2
Specific hazards during firefighting 5.3 Advice for firefighters Special protective equipment for firefighters Further information	: asu	Heating or fire can release toxic gas. In the event of fire, wear self-contained br Use water spray to cool unopened contair res	iers.
Specific hazards during firefighting 5.3 Advice for firefighters Special protective equipment for firefighters Further information SECTION 6: Accidental release me 5.1 Personal precautions, protective e	: asu	Heating or fire can release toxic gas. In the event of fire, wear self-contained br Use water spray to cool unopened contair res ment and emergency procedures Use respirator when performing operation	iers.



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6.3 Methods and material for containme	nt and cleaning up	
Methods for cleaning up	: Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).	
6.4 Reference to other sections		
For personal protection see section 8.		
SECTION 7: Handling and storage		
7.1 Precautions for safe handling		
Advice on safe handling	: Provide sufficient air exchange and/or ex Avoid contact with skin and eyes.	xhaust in work rooms.
Advice on protection against fire and explosion	: Highly flammable. Keep away from sour smoking. Take precautionary measures discharges.	
Hygiene measures	: Avoid contact with skin, eyes and clothin breaks and immediately after handling the strength of the strength	
7.2 Conditions for safe storage, includir	g any incompatibilities	
Requirements for storage areas and containers	: Keep away from sources of ignition - No containers tightly closed in a cool, well-v	
7.3 Specific end use(s)		
Specific use(s)	: No information available.	

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Countries not listed may have their own country specific values.

Occupational Exposure Limits

Switzerland

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	TWA	500 ppm 960 mg/m3	SMAK
		STEL	1 000 ppm 1 920 mg/m3	SMAK

Germany

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5		500 ppm 960 mg/m3	TRGS 900



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Hydrocortisone solution

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Peak-limit: excurs (category)	sion factor		on factor (category) 2	
		MAK	200 ppm 380 mg/m3	DFG MAK
Peak-limit: excurs (category)	sion factor	Peak-limit: excursion	on factor (category) 4	
Belgium				
Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	TWA	1 000 ppm 1 907 mg/m3	BE/OEL
Denmark				
Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	GV	1 000 ppm 1 900 mg/m3	GV (DK)
France				
Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	VLE	5 000 ppm 9 500 mg/m3	FVL
		VME	1 000 ppm 1 900 mg/m3	FVL
Italy				
Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	STEL	1 000 ppm	OEL (IT)
Netherlands				
Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	TGG	260 mg/m3	NL OEL
		TGG 15	1 900 mg/m3	NL OEL
Spain				
Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	STEL	1 000 ppm 1 910 mg/m3	VLA

Sweden

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	TWA	500 ppm 1 000 mg/m3	SWO
		STEL	1 000 ppm 1 900 mg/m3	SWO

United Kingdom



according to Regulation (EC) No. 1907/2006

Hydrocortisone solution

Ver	rsion 2.0		Revision Date 12	.12.2018	Print Date 04.12.2020
	Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
	Ethanol	64-17-5	TWA	1 000 ppm 1 920 mg/m3	EH40 WEL

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Ethanol	Workers	Inhalation	Acute local effects	1900 mg/m3
	Consumers	Oral	Long-term systemic effects	87 mg/kg
	Consumers	Dermal	Long-term systemic effects	206 mg/kg
	Consumers	Inhalation	Acute local effects	950 mg/m3
	Consumers	Inhalation	Long-term systemic effects	114 mg/m3
	Workers	Inhalation	Long-term systemic effects	950 mg/m3
	Workers	Dermal	Long-term systemic effects	343 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Ethanol	Fresh water	0,96 mg/l
	Soil	0,63 mg/kg
	Fresh water sediment	3,6 mg/kg
	Marine water	0,79 mg/l
	Sewage treatment plant	580 mg/l
	Oral	720 mg/l
	Intermittent use/release	2,75 mg/l

8.2 Exposure controls

Engineering measures

Provide sufficient air exchange and/or exhaust in work rooms.

Personal protective equipment

Eye protection	:	Tightly fitting safety goggles
Hand protection Material Rate of permeability	:	Nitrile rubber > 480 min
Skin and body protection	:	Choose body protection according to the amount and concentration of the dangerous substance at the work place. No special protective equipment required.
Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter.
		Respirator with a vapour filter (EN 141) Respirator with ABEK filter.



according to Regulation (EC) No. 1907/2006

Hydrocortisone solution

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SECTION 9: Physical and chemical	pro	operties	
0.1 Information on basic physical and c	he	mical properties	
Appearance	:	liquid	
Colour	:	colourless	
Odour	:	alcohol-like	
Odour Threshold	:	no data available	
рН	:	no data available	
Melting point/range	:	-114,5114 °C Information refers to the main component.	
Boiling point/boiling range	:	78 °C Information refers to the main component.	
Flash point	:	12 °C Information refers to the main component.	
Evaporation rate	:	no data available	
Flammability (solid, gas)	:	no data available	
Upper explosion limit	:	15,0 %(V) Information refers to the main component.	
Lower explosion limit	:	3,5 %(V) Information refers to the main component.	
Vapour pressure	:	no data available	
Relative vapour density	:	no data available	
Relative density	:	no data available	
Density	:	0,79 g/cm3 (20 °C)	
Solubility(ies) Water solubility	:	completely miscible	
Partition coefficient: n-octanol/water	:	no data available	
Auto-ignition temperature	:	no data available	

Viscosity

Decomposition temperature

Viscosity, dynamic

Explosive properties

: no data available

: 1,17 - 1,2 mPa.s (20 °C)

: no data available



according to Regulation (EC) No. 1907/2006

Hydrocortisone solution

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Oxidizing properties	: no data available	
9.2 Other information		
no data available		
SECTION 10: Stability and reactivi	ty	
10.1 Reactivity		
Stable under recommended storage	e conditions.	
10.2 Chemical stability Stable under normal conditions.		
10.3 Possibility of hazardous reaction	IS	
Hazardous reactions	: Stable under normal conditions.	
10.4 Conditions to avoid		
Conditions to avoid	: Keep away from heat and source	es of ignition.
10.5 Incompatible materials		
Materials to avoid	: Strong oxidizing agents	
10.6 Hazardous decomposition produ	cts	
Carbon dioxide (CO2)		
Carbon monoxide		
No decomposition if stored normally	y.	
SECTION 11: Toxicological inform	ation	
11.1 Information on toxicological effe	cts	
Further information		
	Remarks: No data is available on	the product itself.
The following toxicological data refer	to:	
Ethanol (CAS-No.: 64-17-5)		
Acute toxicity		
Acute oral toxicity	: LD50 (Rat): > 5 000 mg/kg	
Skin corrosion/irritation		
	Species: Rabbit Result: Mild skin irritation	
Serious eye damage/eye irritatio	ı	
	Species: Rabbit	
	Assessment: Mild eye irritation	
Ref. 46155.1 / 00000010146	SDK_EU / EN	Page 28 (94



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	Result: Moderate eye irritation	
Respiratory or skin sensitisation		
	Exposure routes: Dermal Species: Guinea pig Method: OECD Test Guideline 406 Result: Did not cause sensitisation or	n laboratory animals.
Germ cell mutagenicity		
Suspected of causing genetic defects Genotoxicity in vitro	s. : Test Type: Ames test Result: negative	
	: Test Type: gene mutation test Species: mouse lymphoma cells Result: negative	
Reproductive toxicity Effects on fertility	: Species: Mouse Application Route: Oral Method: OECD Test Guideline 416	
SECTION 12: Ecological informatio	n	
12.1 Toxicity		
Toxicity to fish	: Remarks: no data available	
12.2 Persistence and degradability		
Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil		
Distribution among environmental	: Remarks: no data available	

12.5 Results of PBT and vPvB assessment

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

compartments

Additional ecological information : No data is available on the product itself.



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Version 2.0		Revision Date 12.12.2018	Print Date 04.12.2020	
SECT	ON 12: Dispession consideratio			
SECH	ON 13: Disposal consideratio	115		
13.1 W	aste treatment methods			
Pr	oduct	: Dispose of in accordance with local regulations. Contact waste disposal services.		
Co	ontaminated packaging	: Dispose of as unused product.		
SECTI	ON 14: Transport informatior	1		
ΙΑΤΑ				
14.1 14.2 14.3 14.4	UN number Proper shipping name Transport hazard class Packing group	: 1170 : Ethanol solution : 3 : II		
14.5	Labels Environmental hazards	: 3 : no		
IMDG				
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Labels EmS Number 1 EmS Number 2 Environmental hazards	: 1170 : Ethanol solution : 3 : II : 3 : F-E : S-D : Marine colluterty as		
ADR		: Marine pollutant: no		
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Classification Code Hazard Identification Number Labels Environmental hazards	: 1170 : ETHANOL SOLUTION : 3 : II : F1 : 33 : 3 : no		



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Versior	n 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
RID			
14.1	UN number	: 1170	
14.2	Proper shipping name	: ETHANOL SOLUTION	
14.3	Transport hazard class	: 3	
14.4	Packing group	: 11	
	Classification Code	: F1	
	Hazard Identification Number	: 33	
		: 3	
14.5	Environmental hazards	: no	
DOT			
14.1	UN number	: 1170	
14.2	Proper shipping name	: Ethanol solutions	
14.3	Transport hazard class	: 3	
14.4	Packing group	: 11	
	Labels	: 3	
	Emergency Response Guidebook Number	: 127	
14.5	Environmental hazards	: no	
TDG			
14.1	UN number	: 1170	
14.2	Proper shipping name	: ETHANOL SOLUTION	
14.3	Transport hazard class	: 3	
14.4	Packing group	: 11	
	Labels	: 3	
14.5	Environmental hazards	: no	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable de	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture							
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable					
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable					
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable					
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable					



according to Regulation (EC) No. 1907/2006

Hydrocortisone solution

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable					
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.					
antity 1 Quantity 2 00 t 50 000 t					
WGK 1 slightly hazardous to water Code Number: 96 Remarks: The rating refers to pure ethanol. Denatured alcohol must be classified in accordance with Appendix 1 No. 5 of the AwSV.					

15.2 Chemical safety assessment

not required

SECTION 16: Other information

Classification of the m	ixture:	Classification procedure:
Flam. Liq. 2	H225	Based on product data or assessment
Eye Irrit. 2	H319	Calculation method
Full text of H-Statemer	nts	
H225	:	Highly flammable liquid and vapour.
H319	:	Causes serious eye irritation.

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant: DIN - Standard of the German Institute for Standardisation: DNEL-Derived No Effect Level: DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN - European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV – Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value: MARPOL - International Convention for the Prevention of Pollution from Ships: n.o.s. - Not



according to Regulation (EC) No. 1907/2006

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Otherwise Specified; NIOSH/Guide – National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG – Dutch Threshold Limit Value; TGV – Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

dd.mm.yyyy

2

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according to Regulation (EC) No. 1907/2006

GA-1000

Version 2.0 Revision Date 12.12.2018 Print Date 04.12.2020 SECTION 1: Identification of the substance/mixture and of the company/undertaking **1.1 Product identifier** <02GCG_BRAND1[D:Product Name]> BEGM® SingleQuots® Product name : 1.2 Relevant identified uses of the substance or mixture and uses advised against Use of the Substance/Mixture : Scientific research and development 1.3 Details of the supplier of the safety data sheet Company : Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11 Lonza Verviers Sprl Parc Industriel de Petit-Rechain **BE-4800** Verviers, Belgium Business Telephone: +32 8732 1611 Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990 Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400 E-mail address sds@lonza.com Responsible/issuing person **1.4 Emergency telephone number** Emergency telephone number : Lonza Ltd, CH-4002 Basel, Switzerland Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Respiratory sensitisation, Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)



according to Regulation (EC) No. 1907/2006

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Hazard pictograms		
Signal word	: Danger	
Hazard statements	: H317 May cause an allergic skin H334 May cause allergy or asthm difficulties if inhaled.	
Precautionary statements	Prevention:P261Avoid breathing dust/ fume/P280Wear protective gloves.P284Wear respiratory protectionResponse:P304 + P340P304 + P340IF INHALED: Remokeep comfortable for breathing.P333 + P313If skin irritation or raadvice/ attention.P342 + P311If experiencing respPOISON CENTER/doctor.	ove person to fresh air and ash occurs: Get medical

Hazardous components which must be listed on the label:

Gentamicin, sulfate (salt)

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No.	Classification	Concentration
	EC-No.		(% w/w)
	Index-No.		
	REACH Registration		
	Number		
Gentamicin, sulfate (salt)	1405-41-0	Resp. Sens. 1; H334	>= 3 - < 5
		Skin Sens. 1; H317	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

: When symptoms persist or in all cases of doubt seek medical advice.



according to Regulation (EC) No. 1907/2006

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ersion 2.0		Revision Date 12.12.2018	Print Date 04.12.202		
If inhaled	:	Move to fresh air.			
		Call a physician immediately.	the factor of the factor		
		If breathing is irregular or stopped, a respiration.	dminister artificial		
In case of skin contact	:	After contact with skin, wash immed	iately with plenty of soap		
		and water.			
		Wash clothing before reuse. Get medical attention if irritation dev	elons and nersists		
In case of eye contact	:	In the case of contact with eyes, rins	e immediately with plenty		
		of water and seek medical advice.	i-li-t		
		If eye irritation persists, consult a spe	ecialist.		
If swallowed	:	Immediately give plenty of water (if p	oossible charcoal slurry).		
		Do not induce vomiting without medi			
		Never give anything by mouth to an	unconscious person.		
Take victim immediately to hospital.					
2 Most important symptoms and effe	ects,	both acute and delayed			
Symptoms	:	Allergic appearance			
	sensitising effects				
.3 Indication of any immediate medic	al at	tention and special treatment need	ed		
s malcation of any miniculate medic	ara	•	cu		
Treatment	•	Treat symptomatically			
Treatment	:	Treat symptomatically.			
	:	Treat symptomatically.			
ECTION 5: Firefighting measures	:	Treat symptomatically.			
ECTION 5: Firefighting measures	:	Treat symptomatically.			
ECTION 5: Firefighting measures	:	Not combustible. Use extinguishing measures that are			
ECTION 5: Firefighting measures	:	Not combustible.			
ECTION 5: Firefighting measures	:	Not combustible. Use extinguishing measures that are circumstances and the surrounding e			
ECTION 5: Firefighting measures 1 Extinguishing media Suitable extinguishing media	: ubst	Not combustible. Use extinguishing measures that are circumstances and the surrounding e	environment.		
 ECTION 5: Firefighting measures 1 Extinguishing media Suitable extinguishing media 2 Special hazards arising from the s Specific hazards during firefighting 	: ubst	Not combustible. Use extinguishing measures that are circumstances and the surrounding e ance or mixture	environment.		
 ECTION 5: Firefighting measures 1 Extinguishing media Suitable extinguishing media 2 Special hazards arising from the s Specific hazards during firefighting 3 Advice for firefighters 	: ubst	Not combustible. Use extinguishing measures that are circumstances and the surrounding e ance or mixture Heating or fire can release toxic gas	environment.		
ECTION 5: Firefighting measures 1 Extinguishing media Suitable extinguishing media 2 Special hazards arising from the s	: ubst	Not combustible. Use extinguishing measures that are circumstances and the surrounding e ance or mixture	environment.		

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

•	· •	•	-	•••		
Personal precaution	is :	Use resp	rator whe	en performing o	perations invo	olving potential
		exposure	to vapou	r of the product	t.	



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	Refer to protective measures	listed in sections 7 and 8.
6.2 Environmental precautions		
Environmental precautions	: No special environmental prec	cautions required.
6.3 Methods and material for containme	nt and cleaning up	
Methods for cleaning up	: Contain spillage, soak up with material, (e.g. sand, earth, dia and transfer to a container for national regulations (see sections)	tomaceous earth, vermiculite) disposal according to local /
6.4 Reference to other sections		
For personal protection see section 8.		
SECTION 7: Handling and storage		
7.4 Dressutions for only handling		
7.1 Precautions for safe handling Advice on safe handling	 In case of insufficient ventilation equipment. Avoid exposure - obtain special Use only in area provided with Avoid contact with skin and exposure 	al instructions before use. appropriate exhaust ventilation.
	•	
Advice on protection against fire and explosion		s.
· ·	 Stable under normal condition DANGER! Avoid contact with 	the skin and the eyes. Avoid Vash hands before breaks and
explosion Hygiene measures	 Stable under normal condition DANGER! Avoid contact with breathing dust or spray mist. V immediately after handling the 	the skin and the eyes. Avoid Vash hands before breaks and
explosion	 Stable under normal condition DANGER! Avoid contact with breathing dust or spray mist. V immediately after handling the any incompatibilities 	the skin and the eyes. Avoid Vash hands before breaks and
explosion Hygiene measures 7.2 Conditions for safe storage, includin Requirements for storage areas and	 Stable under normal condition DANGER! Avoid contact with breathing dust or spray mist. V immediately after handling the any incompatibilities 	the skin and the eyes. Avoid Vash hands before breaks and

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Provide sufficient air exchange and/or exhaust in work rooms.



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Personal protective equipment		
Eye protection	: Safety glasses Safety goggles	
Hand protection		
Material	: Nitrile rubber	
Rate of permeability	: > 480 min	
Skin and body protection	: Choose body protection according t concentration of the dangerous sub Complete suit protecting against ch	stance at the work place.
Respiratory protection	: In case of mist, spray or aerosol expersonal respiratory protection and	
	Respirator with ABEK filter. Respirator with combination filter for 141)	r vapour/particulate (EN

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	light yellow
Odour	:	odourless
Odour Threshold	:	no data available
рН	:	no data available
Freezing point	:	0 °C
Boiling point/boiling range	:	no data available
Flash point	:	Does not sustain combustion.
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Relative density	:	no data available
Solubility(ies)		



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Water solubility	:		
Partition coefficient: n-octanol/water	:	no data available	
Auto-ignition temperature	:	no data available	
Decomposition temperature	:	no data available	
Viscosity	:	no data available	
Explosive properties	:	no data available	
Oxidizing properties	:	no data available	
9.2 Other information no data available SECTION 10: Stability and reactivity	,		
10.1 Reactivity Stable under recommended storage		nditions.	
10.2 Chemical stability Stable under normal conditions.			
10.3 Possibility of hazardous reactions Hazardous reactions	:	Stable under normal conditions.	
10.4 Conditions to avoid Conditions to avoid	:	None known.	
10.5 Incompatible materials			
Materials to avoid	:	Strong oxidizing agents	
10.6 Hazardous decomposition product Nitrogen oxides (NOx) Carbon dioxide (CO2) Carbon monoxide	ts		
SECTION 11: Toxicological informa	tio	n	
11.1 Information on toxicological effect	S		
Further information			
		Remarks: No data is available on the produ	at its alf

SECTION 12: Ecological information

- 12.1 Toxicity
 - Toxicity to fish

: Remarks: no data available



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12.2 Persistence and degradability Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil		
Distribution among environmental compartments	: Remarks: no data available	
12.5 Results of PBT and vPvB assessr	nent	
Assessment	: This substance/mixture contains be either persistent, bioaccumula persistent and very bioaccumulat higher.	ative and toxic (PBT), or very
12.6 Other adverse effects Additional ecological information	: No data is available on the produ	uct itself.
SECTION 13: Disposal consideration	ons	
13.1 Waste treatment methods		
Product	: Dispose of in accordance with lo	cal regulations.
Contaminated packaging	: Dispose of as unused product.	
SECTION 14: Transport information	n	
ΙΑΤΑ	Not dangerous goods	
 14.1 UN number 14.2 Proper shipping name 14.3 Transport hazard class 14.4 Packing group 14.5 Environmental hazards 	 Not applicable Not applicable Not applicable Not applicable not applicable no 	

IMDG

14.1	UN number	: Not applicable
14.2	Proper shipping name	: Not applicable
14.3	Transport hazard class	: Not applicable
14.4	Packing group	: Not applicable
14.5	Environmental hazards	: Marine pollutant: no

Not dangerous goods



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Versior	ח 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
ADR		: Not dangerous goods	
14.1	UN number	: Not applicable	
14.2	Proper shipping name	: Not applicable	
14.3	Transport hazard class	: Not applicable	
14.4	Packing group	: Not applicable	
14.5	Environmental hazards	: no	
RID		: Not dangerous goods	
14.1	UN number	: Not applicable	
14.2	Proper shipping name	: Not applicable	
14.3	Transport hazard class	: Not applicable	
14.4	Packing group	: Not applicable	
14.5	Environmental hazards	: no	
DOT		: Not dangerous goods	
14.1	UN number	: Not applicable	
14.2	Proper shipping name	: Not applicable	
14.3	Transport hazard class	: Not applicable	
14.4	Packing group	: Not applicable	
14.5	Environmental hazards	: no	
TDG		: Not dangerous goods	
14.1	UN number	: Not applicable	
14.2	Proper shipping name	: Not applicable	
14.3	Transport hazard class	: Not applicable	
14.4	Packing group	: Not applicable	
14.5	Environmental hazards	: no	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Cod	: Not applicable de	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture			
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable	
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable	
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable	



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Version 2.0		Revisior	n Date 12.12.2018	Print Date 04.12.2020
Regulation (EC) No 10 ozone layer	05/2009 on sub	stances th	at deplete the : Not appl	licable
Regulation (EC) No 85	0/2004 on pers	istent orga	nic pollutants : Not appl	licable
Seveso III: Directive 20 major-accident hazards		, gerous sub	n Parliament and of the Cou stances. plicable	uncil on the control of
National regulatory inf	ormation			
Water contaminating cl (Germany)	ass		I slightly hazardous to wate ication according to AwSV,	
15.2 Chemical safety asse	ssment			
not required				
SECTION 16: Other info				
Classification of the r			Classification	•
Resp. Sens. 1	H334		Calculation met	
Skin Sens. 1	H317		Calculation met	hod
Full text of H-Stateme	ents			
H317			ause an allergic skin reactio	
H334		: May ca		otoms or breathing difficulties

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant: DIN - Standard of the German Institute for Standardisation: DNEL-Derived No Effect Level: DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV - Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value; MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified: NIOSH/Guide - National Institute of Safety and Health Guidebook: NO(A)EC - No

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Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG – Dutch Threshold Limit Value; TGV – Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

dd.mm.yyyy

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 a 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.

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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according to Regulation (EC) No. 1907/2006

Retinioc Acid

Version 2.0 Revision Date 12.12.2018 Print Date 04.12.2020 SECTION 1: Identification of the substance/mixture and of the company/undertaking **1.1 Product identifier** <02GCG_BRAND1[D:Product Name]> BEGM® SingleQuots® Product name : 1.2 Relevant identified uses of the substance or mixture and uses advised against Use of the Substance/Mixture : Scientific research and development 1.3 Details of the supplier of the safety data sheet Company : Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11 Lonza Verviers Sprl Parc Industriel de Petit-Rechain **BE-4800** Verviers, Belgium Business Telephone: +32 8732 1611 Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990 Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400 E-mail address sds@lonza.com Responsible/issuing person

1.4 Emergency telephone number

Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switzerland
	Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.



according to Regulation (EC) No. 1907/2006

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

1.4 Description of first aid measures		
4.1 Description of first aid measures If inhaled	:	No special precautions required.
In case of skin contact	:	Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.
If swallowed	:	Immediately give large quantities of water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
4.2 Most important symptoms and effe	cts	, both acute and delayed
Symptoms		No information available.
4.3 Indication of any immediate medica	al ai	ttention and special treatment needed
Treatment	ai a	No information available.
SECTION 5: Firefighting measures		
5.1 Extinguishing media		
Suitable extinguishing media	:	Water spray Dry powder Foam
5.2 Special hazards arising from the su	ubst	tance or mixture
Specific hazards during firefighting		
5.3 Advice for firefighters		
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Ref. 46523.1 / 00000012392		SDK_EU / EN Page



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Retinioc Acid

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:	Use water spray to cool unopened co	ontainers.
asu	res	
quip	ment and emergency procedures	
:	Use personal protective equipment.	
:	No special environmental precaution	s required.
ent	and cleaning up	
:	Contain spillage, and then collect wit absorbent material, (e.g. sand, earth vermiculite) and place in container for local / national regulations (see section	, diatomaceous earth, or disposal according to
8.		
:	No special precautions required.	
1:	Take precautionary measures agains	st static discharges.
:	Handle in accordance with good indupractice.	ustrial hygiene and safety
ing	any incompatibilities	
:	Storage temperature: 2 - 8 °C. Keep in use.	container closed when not
	No information available.	
:	No information available.	
	quip : : nent : 8.	asures quipment and emergency procedures : Use personal protective equipment. : No special environmental precaution nent and cleaning up : Contain spillage, and then collect wit absorbent material, (e.g. sand, earth vermiculite) and place in container for local / national regulations (see secti local / national regulations (see secti . No special precautions required Take precautionary measures agains : Handle in accordance with good indu practice. ing any incompatibilities : Storage temperature: 2 - 8 °C. Keep

Countries not listed may have their own country specific values.

Occupational Exposure Limits

Switzerland



according to Regulation (EC) No. 1907/2006

Retinioc Acid

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Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	STEL	100 ppm 320 mg/m3	SMAK
		TWA	50 ppm 160 mg/m3	SMAK

Germany

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis	
Dimethyl sulfoxide	67-68-5	MAK 50 ppm 160 mg/m3		DFG MAK	
Peak-limit: excursion factor (category)		Peak-limit: excursion	Peak-limit: excursion factor (category) 2		
			50 ppm 160 mg/m3	TRGS 900	
Peak-limit: excursion factor (category)		Peak-limit: excursion	on factor (category) 2		

Denmark

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	GV	50 ppm 160 mg/m3	GV (DK)

Sweden

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	TWA	50 ppm 150 mg/m3	SWO
		STEL	150 ppm 500 mg/m3	SWO

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Dimethyl sulfoxide	Workers	Inhalation	Long-term systemic effects	394 mg/m3
	Workers	Skin contact	Long-term systemic effects	400 mg/kg
	Consumers	Skin contact	Long-term systemic effects	200 mg/kg
	Consumers	Oral	Long-term systemic effects	100 mg/kg
	Consumers	Inhalation	Long-term systemic effects	70 mg/m3
	Workers	Inhalation	Long-term systemic effects	484 mg/m3
	Workers	Inhalation	Long-term local effects	265 mg/m3
	Workers	Dermal	Long-term systemic effects	200 mg/kg
	Consumers	Inhalation	Long-term systemic effects	120 mg/m3
	Consumers	Inhalation	Long-term local effects	47 mg/m3
	Consumers	Dermal	Long-term systemic effects	100 mg/kg



according to Regulation (EC) No. 1907/2006

Retinioc Acid

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Con	sumers Oral	Long-term systemic effects	60 mg/kg
Predicted No Effect Conc	entration (PNEC) ac	cording to Regulation (EC) No	. 1907/2006:
Substance name	Environme	ental Compartment	Value
Dimethyl sulfoxide	Fresh wat	er	17 mg/l
	Oral		700 mg/kg
	Sewage tr	eatment plant	11 mg/l
	Soil		3,02 mg/kg
	Sediment		13,4 mg/kg
	Marine wa	ter	1,7 mg/l
8.2 Exposure controls Engineering measures Use only in area provided v	with appropriate exhau	ist ventilation	

Personal protective equipment	
-------------------------------	--

Eye protection	: Tightly fitting safety goggles
Hand protection Material Rate of permeability	 Nitrile rubber > 480 min
Skin and body protection	 Choose body protection according to the amount and concentration of the dangerous substance at the work place. No special protective equipment required.
Respiratory protection	: No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	colourless
Odour	:	no data available
Odour Threshold	:	no data available
рН	:	no data available
Freezing point	:	no data available
Boiling point/boiling range	:	ca. 100 °C
Flash point	:	does not flash
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available



according to Regulation (EC) No. 1907/2006

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Upper explosion limit	: no data available	
Lower explosion limit	: no data available	
Vapour pressure	: no data available	
Relative vapour density	: no data available	
Relative density	: no data available	
Density	: no data available	
Solubility(ies) Water solubility	: soluble	
Partition coefficient: n-octanol/water	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature	: no data available	
Viscosity	: no data available	
Explosive properties	: no data available	
Oxidizing properties	: no data available	

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

F	lazard	lous reacti	ions	:	ſ	lone	known.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents Strong reducing agents Halogens Copper



according to Regulation (EC) No. 1907/2006

Retinioc Acid

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10.6 Hazardous decomposition product Carbon dioxide (CO2) Carbon monoxide Sulphur oxides	ts		
SECTION 11: Toxicological information	tio	n	
11.1 Information on toxicological effects	S		
Further information		Remarks: No data is available on the product its	self.
SECTION 12: Ecological information	n		
12.1 Toxicity			
Toxicity to fish	:	Remarks: no data available	
12.2 Persistence and degradability			
Biodegradability	:	Result: no data available	
12.3 Bioaccumulative potential			
Bioaccumulation	:	Remarks: no data available	
12.4 Mobility in soil			
Distribution among environmental compartments	:	Remarks: no data available	
12.5 Results of PBT and vPvB assessm	en	t	
Assessment	:	This substance/mixture contains no components be either persistent, bioaccumulative and toxic (persistent and very bioaccumulative (vPvB) at le higher.	PBT), or very
12.6 Other adverse effects			
Additional ecological information	:	No data is available on the product itself.	
SECTION 13: Disposal consideration	ns		
13.1 Waste treatment methods			
Product	:	Contact waste disposal services. Dispose of in accordance with local regulations.	



according to Regulation (EC) No. 1907/2006

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Not dangerous goods

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SECTION 14: Transport information

ΙΑΤΑ

14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no
IMDG			Not dangerous goods
14.1 14.2 14.3 14.4 14.5 ADR	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable Marine pollutant: no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 RID	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	: : : : : : : : : : : : : : : : : : : :	Not applicable Not applicable Not applicable Not applicable no Not dangerous goods
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	:	Not applicable Not applicable Not applicable Not applicable no



according to Regulation (EC) No. 1907/2006

Retinioc Acid

Versior	ו 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable de	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament ar major-accident hazards involving dangerous substances.	nd d	of the Council on the control of

Not applicable

National regulatory information

Water contaminating class	:	WGK 1 slightly hazardous to water
(Germany)		Classification according to AwSV, Annex 1 (5.2)

15.2 Chemical safety assessment

not required

according to Regulation (EC) No. 1907/2006

Retinioc Acid

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

SECTION 16: Other information

Full text of H-Statements

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DNEL-Derived No Effect Level; DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV – Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value; MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NIOSH/Guide - National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG -Dutch Threshold Limit Value; TGV – Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

: dd.mm.yyyy

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according to Regulation (EC) No. 1907/2006

Retinioc Acid

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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 a 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.



according to Regulation (EC) No. 1907/2006

Transferrin

Version 2.0 Revision Date 12.12.2018 Print Date 04.12.2020 SECTION 1: Identification of the substance/mixture and of the company/undertaking **1.1 Product identifier** <02GCG_BRAND1[D:Product Name]> BEGM® SingleQuots® Product name : 1.2 Relevant identified uses of the substance or mixture and uses advised against Use of the Substance/Mixture : Scientific research and development 1.3 Details of the supplier of the safety data sheet Company : Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11 Lonza Verviers Sprl Parc Industriel de Petit-Rechain **BE-4800** Verviers, Belgium Business Telephone: +32 8732 1611 Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990 Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400 E-mail address sds@lonza.com Responsible/issuing person **1.4 Emergency telephone number** Emergency telephone number : Lonza Ltd, CH-4002 Basel, Switzerland Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.



according to Regulation (EC) No. 1907/2006

Transferrin

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures If inhaled	:	No special precautions required.
In case of skin contact	:	Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.
If swallowed	:	Immediately give large quantities of water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
4.2 Most important symptoms and effe	cts	, both acute and delayed
Symptoms	:	No information available.
4.3 Indication of any immediate medica Treatment	al at	No information available.
reament	•	
SECTION 5: Firefighting measures		
5.1 Extinguishing media		
Suitable extinguishing media	:	Water spray Dry powder Foam
5.2 Special hazards arising from the su	ıbst	tance or mixture
		Heating or fire can release toxic gas.
5.3 Advice for firefighters		
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Pof / 00000028024		



according to Regulation (EC) No. 1907/2006

Transferrin

Version 2.0		Revision Date 12.12.2018	Print Date 04.12.2020
Further information	:	Use water spray to cool unopened of	containers.
SECTION 6: Accidental release r	neasu	res	
6.1 Personal precautions, protective	e equip	ment and emergency procedures	
Personal precautions	:	Use personal protective equipment.	
6.2 Environmental precautions			
Environmental precautions	:	Prevent product from entering drain	S.
6.3 Methods and material for contai	nment	and cleaning up	
Methods for cleaning up	:	Contain spillage, and then collect w absorbent material, (e.g. sand, earth vermiculite) and place in container f local / national regulations (see sec	h, diatomaceous earth, for disposal according to
6.4 Reference to other sections			
For personal protection see section	on 8.		
SECTION 7: Handling and storag	je		
7.1 Precautions for safe handling			
Advice on safe handling	:	No special precautions required.	
Advice on protection against fire a explosion	and :	Take precautionary measures agair	nst static discharges.
Hygiene measures	:	Handle in accordance with good inc practice.	lustrial hygiene and safety
7.2 Conditions for safe storage, incl	luding	any incompatibilities	
1.2 Oblighter of Sale Storage, me	and ·	No special storage conditions require	red.
— •			
Requirements for storage areas a	ind .		



according to Regulation (EC) No. 1907/2006

Transferrin

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures Avoid splashes.		
Personal protective equipment		
Eye protection	Tightly fitting safety goggles	
Hand protection Material Rate of permeability	Nitrile rubber > 480 min	
Skin and body protection	Choose body protection according to the amount a concentration of the dangerous substance at the we No special protective equipment required.	
Respiratory protection	No personal respiratory protective equipment norm required.	ally

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	no data available
Odour	:	no data available
Odour Threshold	:	no data available
рН	:	no data available
Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	does not flash
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available



according to Regulation (EC) No. 1907/2006

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Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
Vapour pressure	: no data available	
Relative vapour density	: no data available	
Relative density	: no data available	
Density	: no data available	
Solubility(ies) Water solubility	: soluble	
Partition coefficient: n-octanol/water	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature	: no data available	
Viscosity	: no data available	
Explosive properties	: no data available	
Oxidizing properties	: no data available	
9.2 Other information		

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	: Stable under normal conditions.
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10.4 Conditions to avoid

Conditions to avoid : no data available

10.5 Incompatible materials Materials to avoid

: Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Further information



according to Regulation (EC) No. 1907/2006

Transferrin

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
	Remarks: No data is available o	on the product itself.
SECTION 12: Ecological informati	on	
12.1 Toxicity		
Toxicity to fish	: Remarks: no data available	
12.2 Persistence and degradability		
Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil		
Distribution among environmental compartments	: Remarks: no data available	
12.5 Results of PBT and vPvB assess	ment	
Assessment	: This substance/mixture contains be either persistent, bioaccumu persistent and very bioaccumula higher.	lative and toxic (PBT), or very
12.6 Other adverse effects		
Additional ecological information	: no data available	

13.1 Waste treatment methods

Product

: Dispose of in accordance with local regulations.



according to Regulation (EC) No. 1907/2006

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Version 2.0

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Not dangerous goods

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SECTION 14: Transport information

ΙΑΤΑ

14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	:	Not applicable Not applicable Not applicable Not applicable no
IMDG 14.1 14.2 14.3 14.4 14.5 ADR	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	•••••••••••••••••••••••••••••••••••••••	Not dangerous goods Not applicable Not applicable Not applicable Not applicable Marine pollutant: no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 RID	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	:	Not applicable Not applicable Not applicable Not applicable no Not dangerous goods
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	:	Not applicable Not applicable Not applicable Not applicable no



according to Regulation (EC) No. 1907/2006

Transferrin

Versio	n 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable de	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament at major-accident hazards involving dangerous substances.	nd d	of the Council on the control of

Not applicable

National regulatory information

Water contaminating class	:	nwg not water endangering
(Germany)		Classification according to AwSV, Annex 1 (2.2)

15.2 Chemical safety assessment

not required



according to Regulation (EC) No. 1907/2006

Transferrin

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

SECTION 16: Other information

Full text of H-Statements

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DNEL-Derived No Effect Level; DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV – Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value; MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NIOSH/Guide - National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG -Dutch Threshold Limit Value; TGV – Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

: dd.mm.yyyy

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according to Regulation (EC) No. 1907/2006

Transferrin

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0 Revision Date 12.12.2018 Print Date 04.12.2020 SECTION 1: Identification of the substance/mixture and of the company/undertaking **1.1 Product identifier** <02GCG_BRAND1[D:Product Name]> BEGM® SingleQuots® Product name : 1.2 Relevant identified uses of the substance or mixture and uses advised against Use of the Substance/Mixture : Scientific research and development 1.3 Details of the supplier of the safety data sheet Company : Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11 Lonza Verviers Sprl Parc Industriel de Petit-Rechain **BE-4800** Verviers, Belgium Business Telephone: +32 8732 1611 Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990 Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400 E-mail address sds@lonza.com Responsible/issuing person **1.4 Emergency telephone number** Emergency telephone number : Lonza Ltd, CH-4002 Basel, Switzerland Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.



according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures		
If inhaled	:	No special precautions required.
In case of skin contact	:	Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.
If swallowed	:	Immediately give large quantities of water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
4.2 Most important symptoms and effe	ects	, both acute and delayed
Symptoms	:	No information available.
4.3 Indication of any immediate medic	al a	ttention and special treatment needed
Treatment	:	No information available.
SECTION 5: Firefighting measures		
5.1 Extinguishing media		
Suitable extinguishing media	:	Water spray Dry powder Foam
5.2 Special hazards arising from the s	ubsi	tance or mixture
		Heating or fire can release toxic gas.
5.3 Advice for firefighters		
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Ref / 00000028007		SDK ELL/EN Page



according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

/ersion 2.0		Revision Date 12.12.2018	Print Date 04.12.20
Further information	:	Use water spray to cool unopened co	ntainers.
ECTION 6: Accidental release m	easu	ires	
.1 Personal precautions, protective	equip	oment and emergency procedures	
Personal precautions	:	Use personal protective equipment.	
2.2 Environmental precautions			
Environmental precautions	:	Prevent product from entering drains.	
3.3 Methods and material for contain	ment	and cleaning up	
Methods for cleaning up	:	Contain spillage, and then collect with absorbent material, (e.g. sand, earth, vermiculite) and place in container for local / national regulations (see section	diatomaceous earth, disposal according to
.4 Reference to other sections			
For personal protection see section			
For personal protection see section SECTION 7: Handling and storage 7.1 Precautions for safe handling		No special precautions required.	
For personal protection see section) :	No special precautions required. Take precautionary measures agains	t static discharges.
For personal protection see section SECTION 7: Handling and storage 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire ar) :		-
For personal protection see section SECTION 7: Handling and storage 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire an explosion Hygiene measures	e id : :	Take precautionary measures agains Handle in accordance with good indu- practice.	-
For personal protection see section SECTION 7: Handling and storage 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire ar explosion Hygiene measures 7.2 Conditions for safe storage, inclu	nd : : ding	Take precautionary measures agains Handle in accordance with good indu- practice.	strial hygiene and safety
SECTION 7: Handling and storage 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire ar explosion Hygiene measures 7.2 Conditions for safe storage, inclu Requirements for storage areas an	nd : : ding	Take precautionary measures agains Handle in accordance with good indu- practice.	strial hygiene and safety



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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0

SECTION	8: Exposure controls/personal protection
8.1 Control	parameters
Occup	ational Exposure Limits
Co	ontains no substances with occupational exposure limit values.

Revision Date 12.12.2018

Engineering measures Avoid splashes. Personal protective equipment Eye protection Tightly fitting safety goggles : Hand protection Material Nitrile rubber : Rate of permeability > 480 min 2 Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place. No special protective equipment required. No personal respiratory protective equipment normally Respiratory protection 5 required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	no data available
Odour	:	no data available
Odour Threshold	:	no data available
рН	:	no data available
Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	does not flash
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available



according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
Vapour pressure	: no data available	
Relative vapour density	: no data available	
Relative density	: no data available	
Density	: no data available	
Solubility(ies) Water solubility	: soluble	
Partition coefficient: n-octanol/water	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature	: no data available	
Viscosity	: no data available	
Explosive properties	: no data available	
Oxidizing properties	: no data available	
9.2 Other information		

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	: Stable under normal conditions.
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10.4 Conditions to avoid

Conditions to avoid : no data available

10.5 Incompatible materials Materials to avoid

: Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Further information



according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
	Remarks: No data is available on the	he product itself.
SECTION 12: Ecological information	on	
12.1 Toxicity		
Toxicity to fish	: Remarks: no data available	
12.2 Persistence and degradability		
Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil		
Distribution among environmental compartments	: Remarks: no data available	
12.5 Results of PBT and vPvB assess	ment	
Assessment	: This substance/mixture contains no be either persistent, bioaccumulative persistent and very bioaccumulative higher.	ve and toxic (PBT), or very
12.6 Other adverse effects		
Additional ecological information	: no data available	

13.1 Waste treatment methods

Product

: Dispose of in accordance with local regulations.

according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0

Revision Date 12.12.2018

Not dangerous goods

Print Date 04.12.2020

SECTION 14: Transport information

IATA

14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	: : : : : : : : : : : : : : : : : : : :	Not applicable Not applicable Not applicable Not applicable no
IMDG			Not dangerous goods
14.1 14.2 14.3 14.4 14.5 ADR	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable Marine pollutant: no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 RID	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no Not dangerous goods
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	: : : : : : : : : : : : : : : : : : : :	Not applicable Not applicable Not applicable Not applicable no



according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0 Rev		Revision Date 12.12.2018	Print Date 04.12.2020
TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

••••	earery, nearraine en nerraine garaneris, regionarer ep		
	REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable
	REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
	REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
	Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
	Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
	Seveso III: Directive 2012/18/EU of the European Parliament ar major-accident hazards involving dangerous substances. Not applicable	nd d	of the Council on the control of

National regulatory information

Water contaminating class	:	WGK 1 slightly hazardous to water
(Germany)		Classification according to AwSV, Annex 1 (5.2)

15.2 Chemical safety assessment

not required

according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

SECTION 16: Other information

Full text of H-Statements

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DNEL-Derived No Effect Level; DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV – Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value; MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NIOSH/Guide - National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG -Dutch Threshold Limit Value; TGV - Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

: dd.mm.yyyy

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SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

TRIIODOTHYRONINE

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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 a 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.



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0 Revision Date 12.12.2018 Print Date 04.12.2020 SECTION 1: Identification of the substance/mixture and of the company/undertaking **1.1 Product identifier** <02GCG_BRAND1[D:Product Name]> BEGM® SingleQuots® Product name : 1.2 Relevant identified uses of the substance or mixture and uses advised against Use of the Substance/Mixture : Scientific research and development 1.3 Details of the supplier of the safety data sheet Company : Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 11 Lonza Verviers Sprl Parc Industriel de Petit-Rechain **BE-4800** Verviers, Belgium Business Telephone: +32 8732 1611 Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 1990 Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denmark Business Telephone: + 45 4356 7400 E-mail address sds@lonza.com Responsible/issuing person **1.4 Emergency telephone number** Emergency telephone number : Lonza Ltd, CH-4002 Basel, Switzerland Telephone: +41 61 313 94 94 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures		
If inhaled	:	No special precautions required.
In case of skin contact	:	Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.
If swallowed	:	Immediately give large quantities of water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
4.2 Most important symptoms and effe	cts	, both acute and delayed
Symptoms	:	No information available.
4.3 Indication of any immediate medica	al a	ttention and special treatment needed
Treatment	:	No information available.
SECTION 5: Firefighting measures		
5.1 Extinguishing media		
Suitable extinguishing media	:	Water spray Dry powder Foam
5.2 Special hazards arising from the su	ubst	tance or mixture
		Heating or fire can release toxic gas.
5.3 Advice for firefighters		
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Pof / 00000028801		



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0		Revision Date 12.12.2018	Print Date 04.12.202
Further information	:	Use water spray to cool unopened	containers.
SECTION 6: Accidental release n	neasu	res	
6.1 Personal precautions, protective	e equip	ment and emergency procedures	
Personal precautions	:	Use personal protective equipment	
6.2 Environmental precautions			
Environmental precautions	:	Prevent product from entering drain	IS.
6.3 Methods and material for contain	nment	and cleaning up	
Methods for cleaning up	:	Contain spillage, and then collect w absorbent material, (e.g. sand, eart vermiculite) and place in container local / national regulations (see sec	h, diatomaceous earth, for disposal according to
6.4 Reference to other sections			
For personal protection see section	on 8.		
SECTION 7: Handling and storag	je		
7.1 Precautions for safe handling			
	:	No special precautions required.	
Advice on safe handling			
Advice on safe handling Advice on protection against fire a explosion	and :	Take precautionary measures again	nst static discharges.
Advice on protection against fire a	and : :	Take precautionary measures again Handle in accordance with good inc practice.	-
Advice on protection against fire a explosion Hygiene measures	:	Handle in accordance with good incorrectice.	-
Advice on protection against fire a explosion Hygiene measures 7.2 Conditions for safe storage, incl	: uding	Handle in accordance with good incorrectice.	dustrial hygiene and safety
Advice on protection against fire a explosion Hygiene measures 7.2 Conditions for safe storage, incl Requirements for storage areas a	: uding	Handle in accordance with good incorrectice.	dustrial hygiene and safety



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures Avoid splashes.		
Personal protective equipment		
Eye protection	: Tightly fitting safety goggles	
Hand protection Material Rate of permeability	: Nitrile rubber : > 480 min	
Skin and body protection	: Choose body protection according to the amount and concentration of the dangerous substance at the work plac No special protective equipment required.	æ.
Respiratory protection	: No personal respiratory protective equipment normally required.	

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	no data available
Odour	:	no data available
Odour Threshold	:	no data available
рН	:	no data available
Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	does not flash
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
Vapour pressure	: no data available	
Relative vapour density	: no data available	
Relative density	: no data available	
Density	: no data available	
Solubility(ies) Water solubility	: soluble	
Partition coefficient: n-octanol/water	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature	: no data available	
Viscosity	: no data available	
Explosive properties	: no data available	
Oxidizing properties	: no data available	
9.2 Other information		

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	: Stable under normal conditions.
---------------------	-----------------------------------

10.4 Conditions to avoid

Conditions to avoid : no data available

10.5 Incompatible materials Materials to avoid

: Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Further information



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
	Remarks: No data is available on t	the product itself.
SECTION 12: Ecological information	on	
12.1 Toxicity		
Toxicity to fish	: Remarks: no data available	
12.2 Persistence and degradability		
Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil		
Distribution among environmental compartments	: Remarks: no data available	
12.5 Results of PBT and vPvB assess	ment	
Assessment	: This substance/mixture contains n be either persistent, bioaccumulati persistent and very bioaccumulativ higher.	ive and toxic (PBT), or very
12.6 Other adverse effects		
Additional ecological information	: no data available	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

: Dispose of in accordance with local regulations.



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0

Revision Date 12.12.2018

Not dangerous goods

Print Date 04.12.2020

SECTION 14: Transport information

IATA

14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no
IMDG			Not dangerous goods
14.1 14.2 14.3 14.4 14.5 ADR	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable Marine pollutant: no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 RID	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no Not dangerous goods
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	: : :	Not applicable Not applicable Not applicable Not applicable no



according to Regulation (EC) No. 1907/2006

Epinephrine

Versior	ו 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable de	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament ar major-accident hazards involving dangerous substances.	nd d	of the Council on the control of

Not applicable

National regulatory information

Water contaminating class	:	WGK 1 slightly hazardous to water
(Germany)		Classification according to AwSV, Annex 1 (5.2)

15.2 Chemical safety assessment

not required



according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

SECTION 16: Other information

Full text of H-Statements

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DNEL-Derived No Effect Level; DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV – Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value; MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NIOSH/Guide - National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG -Dutch Threshold Limit Value; TGV - Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

: dd.mm.yyyy

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according to Regulation (EC) No. 1907/2006

Epinephrine

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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according to Regulation (EC) No. 1907/2006

HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020			
SECTION 1: Identification of the su	SECTION 1: Identification of the substance/mixture and of the company/undertaking				
1.1 Product identifier					
	<02GCG_BRAND1[D:Pro	duct Name]>			
Product name	: BEGM® SingleQuots®				
1.2 Relevant identified uses of the sub	stance or mixture and uses advised aga	inst			
Use of the Substance/Mixture	: Scientific research and development				
1.3 Details of the supplier of the safety	v data sheet				
Company	: Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 1	11			
	Lonza Verviers Sprl Parc Industriel de Petit-Rechain BE-4800 Verviers, Belgium Business Telephone: +32 8732 1611				
	Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 199	90			
	Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denma Business Telephone: + 45 4356 7400				
E-mail address Responsible/issuing person	sds@lonza.com				
1.4 Emergency telephone number					
Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switzerlar Telephone: +41 61 313 94 94 (24h)	nd			

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.





according to Regulation (EC) No. 1907/2006

HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

Version 2.0

Revision Date 12.12.2018

Print Date 04.12.2020

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures		
If inhaled	:	No special precautions required.
In case of skin contact	:	Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. If eye irritation persists, consult a specialist.
If swallowed	:	Immediately give large quantities of water to drink. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
4.2 Most important symptoms and effe	ects	, both acute and delayed
Symptoms	:	No information available.
4.3 Indication of any immediate medic	al a	ttention and special treatment peeded
-	ara	-
Treatment	:	No information available.
SECTION 5: Firefighting measures		
5.1 Extinguishing media		
Suitable extinguishing media	:	Water spray Dry powder Foam
5.2 Special hazards arising from the s	ubst	tance or mixture
Specific hazards during firefighting	:	Heating or fire can release toxic gas.
5.3 Advice for firefighters		
Special protective equipment for firefighters		In the event of fire, wear self-contained breathing apparatus.
Def / 00000000005		



according to Regulation (EC) No. 1907/2006

HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

Version 2.0		Revision Date 12.12.2018	Print Date 04.12.202
Further information	:	Use water spray to cool unopened c	ontainers.
SECTION 6: Accidental release n	neasu	ires	
6.1 Personal precautions, protective	equip	oment and emergency procedures	
Personal precautions	:		
6.2 Environmental precautions			
Environmental precautions	:	Prevent product from entering drains	3.
6.3 Methods and material for contair	nment	and cleaning up	
Methods for cleaning up	:	Contain spillage, and then collect wit absorbent material, (e.g. sand, earth vermiculite) and place in container fo local / national regulations (see section	n, diatomaceous earth, or disposal according to
6.4 Reference to other sections For personal protection see section	on 8.		
For personal protection see section			
For personal protection see section SECTION 7: Handling and storag			
For personal protection see section SECTION 7: Handling and storag		No special precautions required.	
For personal protection see section SECTION 7: Handling and storag 7.1 Precautions for safe handling	e :		st static discharges.
For personal protection see section SECTION 7: Handling and storag 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire a	e :		-
For personal protection see section SECTION 7: Handling and storag 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire a explosion Hygiene measures	re : und : :	Take precautionary measures again Handle in accordance with good indu practice.	-
For personal protection see section SECTION 7: Handling and storag 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire a explosion Hygiene measures 7.2 Conditions for safe storage, inclu	re ind : : uding	Take precautionary measures again Handle in accordance with good indu practice.	ustrial hygiene and safety
 SECTION 7: Handling and storag 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire a explosion Hygiene measures 7.2 Conditions for safe storage, include Requirements for storage areas a storage areas storage areas a storage	re ind : : uding	Take precautionary measures again Handle in accordance with good indu- practice.	ustrial hygiene and safety



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HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

SECTION 8: Exposure controls	personal protection	
8.1 Control parameters		
Occupational Exposure Limits	5	
Contains no substances wit	th occupational exposure limit values.	
8.2 Exposure controls		
Engineering measures Avoid splashes.		
Personal protective equipmen	ıt	
Eye protection	: Tightly fitting safety goggles	
Hand protection Material Rate of permeability	: Nitrile rubber : > 480 min	
Skin and body protection	: Choose body protection according to	the amount and

Revision Date 12.12.2018

	No special protective equipment required.	
Respiratory protection	 No personal respiratory protective equipment n required. 	ormally

concentration of the dangerous substance at the work place.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Aqueous solution
Colour	:	no data available
Odour	:	no data available
Odour Threshold	:	no data available
рН	:	no data available
Freezing point	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	does not flash
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available



according to Regulation (EC) No. 1907/2006

HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
Vapour pressure	: no data available	
Relative vapour density	: no data available	
Relative density	: no data available	
Density	: no data available	
Solubility(ies) Water solubility	: soluble	
Partition coefficient: n-octanol/water	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature	: no data available	
Viscosity	: no data available	
Explosive properties	: no data available	
Oxidizing properties	: no data available	
9.2 Other information		

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	: Stable under normal conditions.
---------------------	-----------------------------------

10.4 Conditions to avoid

Conditions to avoid : no data available

10.5 Incompatible materials Materials to avoid

: Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Further information



according to Regulation (EC) No. 1907/2006

HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

Version 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
	Remarks: No data is available on t	he product itself.
SECTION 12: Ecological information	on	
12.1 Toxicity		
Toxicity to fish	: Remarks: no data available	
12.2 Persistence and degradability		
Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil		
Distribution among environmental compartments	: Remarks: no data available	
12.5 Results of PBT and vPvB assess	ment	
Assessment	: This substance/mixture contains no be either persistent, bioaccumulati persistent and very bioaccumulativ higher.	ve and toxic (PBT), or very
12.6 Other adverse effects		
Additional ecological information	: no data available	

13.1 Waste treatment methods

Product

: Dispose of in accordance with local regulations.



according to Regulation (EC) No. 1907/2006

HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

Version 2.0

Revision Date 12.12.2018

Not dangerous goods

Print Date 04.12.2020

SECTION 14: Transport information

ΙΑΤΑ

14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	:	Not applicable Not applicable Not applicable Not applicable no
IMDG			Not dangerous goods
14.1 14.2 14.3 14.4 14.5 ADR	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable Marine pollutant: no Not dangerous goods
14.1 14.2 14.3 14.4 14.5 RID	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	:	Not applicable Not applicable Not applicable Not applicable no
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards		Not applicable Not applicable Not applicable Not applicable no
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	:	Not applicable Not applicable Not applicable Not applicable no



according to Regulation (EC) No. 1907/2006

HEGF, 0.5 UG/ML FOR USE IN BEGM KIT

Versior	n 2.0	Revision Date 12.12.2018	Print Date 04.12.2020
TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
14.6	Special precautions for user	: none	
14.7	Transport in bulk according to Annex II of Marpol and the IBC Co	: Not applicable de	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament ar major-accident hazards involving dangerous substances.	nd d	of the Council on the control of

Not applicable

National regulatory information

Water contaminating class	:	WGK 1 slightly hazardous to water
(Germany)		Classification according to AwSV, Annex 1 (5.2)

15.2 Chemical safety assessment

not required

according to Regulation (EC) No. 1907/2006

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SECTION 16: Other information

Full text of H-Statements

Further information

Full text of other abbreviations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE -Acute Toxicity Estimate; AwSV - Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen / Ordinance on facilities for handling substances that are hazardous to water; BPR - Biocidal Product Regulation; bw - Body weight; CAS - Chemical Abstract Service; CLP - Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DNEL-Derived No Effect Level; DOT - Department of Transportation; EC – European Community; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EmS (Emergency Response Procedures for Ships Carrying Dangerous Goods); EN – European Standard; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; EU OEL - European Occupational Exposure Limit; GHS -Globally Harmonized System of Classification and Labelling of Chemicals; GLP - Good Laboratory Practice; GV – Danish Exposure Limits for Substances and Materials; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LOFT - Danish Threshold Limit Value; MAK - German Threshold Limit Value; MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NIOSH/Guide - National Institute of Safety and Health Guidebook; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NTP -National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT -Persistent, Bioaccumulative and Toxic substance; PEL - Permissible Exposure Limit; PNEC - Predicted no Effect Concentration; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; REL -Recommended Exposure Limit; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; STEL - Short-Term Exposure Limit; TDG - Transportation of Dangerous Goods; TGG -Dutch Threshold Limit Value; TGV – Swedish OEL; TLV Threshold Limit Value; TLV-C - Threshold Limit Value Ceiling; TWA -Time Weighted Average; UDS - Unscheduled DNA Synthesis; UN - United Nations; VLE - Valeurs limites d'exposition professionnelle aux agents chimiques en France; VME - Valeur (Limite) Moyenne d'Exposition; VOC - Volatile Organic Compound[s]; WEEL - Workplace Environmental Exposure Level; % w/w Percent weight by weight; %(V) Percent Volume

Date format

: dd.mm.yyyy

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 a 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.

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according to Regulation (EC) No. 1907/2006

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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