

Kit SDS Cover Sheet

EGM-2 Bullet Kit

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

Product Information

Product name : EGM-2 Bullet Kit

Material number : CC-3162

Components

EBM-2 BASAL MEDIUM	SDS attached
CC-4176 EGM-2 SingleQuot Kit Suppl. & Growth Factor	
Fetal Bovine Serum	SDS attached
Hydrocortisone solution	SDS attached
Human Fibroblast Growth Factor basic (hFGFb)	SDS attached
Human Vascular Endothelial Growth Factor (hVEGF)	SDS attached
Analog of Human Insulin-Like Growth Factor-1. Long R3-IGF-1	SDS attached
Ascorbic Acid Solution	SDS attached
Human Epidermal Growth Factor (hEGF)	SDS attached
GA-1000	SDS attached
Heparin	SDS attached

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according to Regulation (EC) No. 1907/2006

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : EBM-2 BASAL MEDIUM

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

Use of the Substance/Mixture : For Research Use Only. Not for use in diagnostic procedures.

1.3 Details of the supplier of the safety data sheetCompany : **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 numberEmergency 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.

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.

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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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.

Further information : Use water spray to cool unopened containers.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in 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 : No special precautions required.

Advice on protection against fire and explosion : Take precautionary measures against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required.

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
Iron(II) sulfate	7782-63-0	TWA (Inhalable)	1 mg/m3	SMAK

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heptahydrate		fraction.)		
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Belgium

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Iron(II) sulfate heptahydrate	7782-63-0	TWA	1 mg/m ³ (as Fe)	BE/OEL

Denmark

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Iron(II) sulfate heptahydrate	7782-63-0	GV	1 mg/m ³ (as Fe)	GV (DK)

Italy

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Iron(II) sulfate heptahydrate	7782-63-0	TWA	1 mg/m ³ (as Fe)	OEL (IT)

Spain

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Iron(II) sulfate heptahydrate	7782-63-0	TWA	1 mg/m ³ (as Fe)	VLA

United Kingdom

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Iron(II) sulfate heptahydrate	7782-63-0	TWA	1 mg/m ³ (as Fe)	EH40 WEL
		STEL	2 mg/m ³ (as Fe)	EH40 WEL

8.2 Exposure controls

Engineering measures

Avoid splashes.

Personal protective equipment

Eye protection : Tightly fitting safety goggles

Hand protection

Material : Nitrile rubber

Rate of permeability : > 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.

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SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance	:	Aqueous solution
Colour	:	light red
Odour	:	no data available
Odour Threshold	:	no data available
pH	:	7,6 - 8,0
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
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

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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 productsNo decomposition if stored normally.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Further information**Remarks: No data is available on the product itself.

SECTION 12: Ecological information**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 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.

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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.

SECTION 14: Transport information**IATA** 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

IMDG 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 : Marine pollutant: no

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

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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 Code : 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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

National regulatory information

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

15.2 Chemical safety assessment

not required

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SECTION 16: Other information**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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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Hydrocortisone solution

Version 2.0

Revision Date 12.12.2018

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Hydrocortisone solution

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 numberEmergency 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

H225: Highly flammable liquid and vapour.

Eye irritation, Category 2

H319: Causes serious eye irritation.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



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Signal word	:	Danger
Hazard statements	:	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation.
Precautionary statements	:	<p>Prevention:</p> <p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P233 Keep container tightly closed.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>Response:</p> <p>P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.</p> <p>P337 + P313 If eye irritation persists: Get medical advice/ attention.</p> <p>P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.</p>

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. If breathing is irregular or stopped, administer artificial respiration.
In case of skin contact	:	After contact with skin, wash immediately with plenty of soap and water.

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- Consult a physician.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Call a physician immediately.
- If swallowed : If accidentally swallowed obtain immediate medical attention.
Clean mouth with water and drink afterwards plenty of water.
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.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : No information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media : Dry powder
Water spray
Foam

5.2 Special hazards arising from the substance 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.
- Further information : Use water spray to cool unopened containers.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions : Use respirator when performing operations involving potential exposure to vapour of the product.

6.2 Environmental precautions

- Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment 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).

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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 exhaust in work rooms. Avoid contact with skin and eyes.
- Advice on protection against fire and explosion : Highly flammable. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.
- Hygiene measures : Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep away from sources of ignition - No smoking. Keep containers tightly closed in a cool, well-ventilated place.

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/m ³	SMAK
		STEL	1 000 ppm 1 920 mg/m ³	SMAK

Germany

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5		500 ppm 960 mg/m ³	TRGS 900
Peak-limit: excursion factor (category)			Peak-limit: excursion factor (category) 2	
		MAK	200 ppm 380 mg/m ³	DFG MAK
Peak-limit: excursion factor			Peak-limit: excursion factor (category) 4	

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(category)	
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Belgium

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	TWA	1 000 ppm 1 907 mg/m ³	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/m ³	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/m ³	FVL
		VME	1 000 ppm 1 900 mg/m ³	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/m ³	NL OEL
		TGG 15	1 900 mg/m ³	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/m ³	VLA

Sweden

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	TWA	500 ppm 1 000 mg/m ³	SWO
		STEL	1 000 ppm 1 900 mg/m ³	SWO

United Kingdom

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanol	64-17-5	TWA	1 000 ppm 1 920 mg/m ³	EH40 WEL

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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/m ³
	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/m ³
	Consumers	Inhalation	Long-term systemic effects	114 mg/m ³
	Workers	Inhalation	Long-term systemic effects	950 mg/m ³
	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 : Nitrile rubber

Rate of permeability : > 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : colourless

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Odour	:	alcohol-like
Odour Threshold	:	no data available
pH	:	no data available
Melting point/range	:	-114,5 - -114 °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/cm ³ (20 °C)
Solubility(ies)		
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Decomposition temperature	:	no data available
Viscosity		
Viscosity, dynamic	:	1,17 - 1,2 mPa.s (20 °C)
Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

no data available

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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 : Keep away from heat and sources of ignition.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents

10.6 Hazardous decomposition productsCarbon dioxide (CO₂)

Carbon monoxide

No decomposition if stored normally.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****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/irritationSpecies: Rabbit
Result: Mild skin irritation**Serious eye damage/eye irritation**Species: Rabbit
Assessment: Mild eye irritation
Result: Moderate eye irritation**Respiratory or skin sensitisation**Exposure routes: Dermal
Species: Guinea pig

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Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Suspected of causing genetic defects.

Genotoxicity in vitro

: 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 information**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 soilDistribution among environmental
compartments

: 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

Additional ecological information

: No data is available on the product itself.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

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- Product : Dispose of in accordance with local regulations.
Contact waste disposal services.
- Contaminated packaging : Dispose of as unused product.

SECTION 14: Transport information**IATA**

- 14.1 UN number : 1170
14.2 Proper shipping name : Ethanol solution
14.3 Transport hazard class : 3
14.4 Packing group : II
Labels : 3
14.5 Environmental hazards : no

IMDG

- 14.1 UN number : 1170
14.2 Proper shipping name : Ethanol solution
14.3 Transport hazard class : 3
14.4 Packing group : II
Labels : 3
EmS Number 1 : F-E
EmS Number 2 : S-D
14.5 Environmental hazards : Marine pollutant: no

ADR

- 14.1 UN number : 1170
14.2 Proper shipping name : ETHANOL SOLUTION
14.3 Transport hazard class : 3
14.4 Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3
14.5 Environmental hazards : no

RID

- 14.1 UN number : 1170
14.2 Proper shipping name : ETHANOL SOLUTION
14.3 Transport hazard class : 3
14.4 Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3
14.5 Environmental hazards : no

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DOT

- 14.1 UN number : 1170
- 14.2 Proper shipping name : Ethanol solutions
- 14.3 Transport hazard class : 3
- 14.4 Packing group : II
- 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 : II
- 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 Code : 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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.

P5c	FLAMMABLE LIQUIDS	Quantity 1 5 000 t	Quantity 2 50 000 t
-----	-------------------	-----------------------	------------------------

National regulatory information

Water contaminating class : WGK 1 slightly hazardous to water

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(Germany)

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 mixture:

Flam. Liq. 2 H225

Eye Irrit. 2 H319

Classification procedure:

Based on product data or assessment

Calculation method

Full text of H-Statements

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 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;

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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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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : GA-1000

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 numberEmergency 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)**

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Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H317 May cause an allergic skin reaction. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Precautionary statements	:	<p>Prevention:</p> <p>P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P280 Wear protective gloves. P284 Wear respiratory protection.</p> <p>Response:</p> <p>P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.</p>

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

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.

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- If inhaled : Move to fresh air.
Call a physician immediately.
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : After contact with skin, wash immediately with plenty of soap and water.
Wash clothing before reuse.
Get medical attention if irritation develops and persists.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If eye irritation persists, consult a specialist.
- If swallowed : Immediately give plenty of water (if possible charcoal slurry).
Do not induce vomiting without medical advice.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Allergic appearance
sensitising effects

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.
-

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media : Not combustible.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance 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.
- Further information : Use water spray to cool unopened containers.
-

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions : Use respirator when performing operations involving potential exposure to vapour of the product.

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Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : No special environmental precautions required.

6.3 Methods and material for containment 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 : In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid exposure - obtain special instructions before use.
Use only in area provided with appropriate exhaust ventilation.
Avoid contact with skin and eyes.

Advice on protection against fire and explosion : Stable under normal conditions.

Hygiene measures : DANGER! Avoid contact with the skin and the eyes. Avoid breathing dust or spray mist. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep frozen or refrigerated.

7.3 Specific end use(s)

Specific use(s) : No information available.

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 to the amount and concentration of the dangerous substance at the work place. Complete suit protecting against chemicals
Respiratory protection	:	In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit. Respirator with ABEK filter. Respirator with combination filter for vapour/particulate (EN 141)

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
pH	:	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	:	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 : None known.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents

10.6 Hazardous decomposition productsNitrogen oxides (NO_x)
Carbon dioxide (CO₂)
Carbon monoxide

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Further information**

Remarks: No data is available on the product itself.

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 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

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

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

Product : Dispose of in accordance with local regulations.

Contaminated packaging : Dispose of as unused product.

SECTION 14: Transport information**IATA** 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**IMDG** 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** : Marine pollutant: no

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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 Code : 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) : 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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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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

National regulatory information

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

15.2 Chemical safety assessment

not required

SECTION 16: Other information**Classification of the mixture:**

Resp. Sens. 1 H334

Skin Sens. 1 H317

Classification procedure:

Calculation method

Calculation method

Full text of H-Statements

H317 : May cause an allergic skin reaction.

H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

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Fetal Bovine Serum

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Fetal Bovine Serum

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 sheetCompany : **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 numberEmergency 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.

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.

SAFETY DATA SHEET

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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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.
- Further information : Use water spray to cool unopened containers.

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Fetal Bovine Serum

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sectionsFor 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 industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep tightly closed.

Store in cool place.

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.

8.2 Exposure controls**Engineering measures**

Avoid splashes.

Personal protective equipment

Eye protection	:	Tightly fitting safety goggles
Hand protection	:	
Material	:	Nitrile rubber
Rate of permeability	:	> 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	:	brown
Odour	:	no data available
Odour Threshold	:	no data available
pH	:	6,8 - 8,3
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

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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.

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 hazardous decomposition products are known.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Further information**

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Remarks: No data is available on the product itself.

SECTION 12: Ecological information**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 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

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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SECTION 14: Transport information**IATA** 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

IMDG 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 : Marine pollutant: no

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

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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 Code	:	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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

National regulatory information

Water contaminating class (Germany) : WGK 1 slightly hazardous to water

15.2 Chemical safety assessment

not required

SECTION 16: Other information**Full text of H-Statements****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

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

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Human Fibroblast Growth Factor basic (hFGFb)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Human Fibroblast Growth Factor basic (hFGFb)

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 sheetCompany : **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 numberEmergency 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.

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.

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Human Fibroblast Growth Factor basic (hFGFb)

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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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.

Further information : Use water spray to cool unopened containers.

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sectionsFor 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 against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required.

7.3 Specific end use(s)Specific use(s) : No information available.

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.

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Personal protective equipment

Eye protection	:	Tightly fitting safety goggles
Hand protection	:	
Material	:	Nitrile rubber
Rate of permeability	:	> 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
pH	:	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
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

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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**

Remarks: No data is available on the product itself.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish : Remarks: no data available

12.2 Persistence and degradability

Biodegradability : Result: no data available

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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 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

Additional ecological information : no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

SECTION 14: Transport information

IATA 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

IMDG 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 : Marine pollutant: no

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

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Version 2.0

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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 Code	:	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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

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Human Fibroblast Growth Factor basic (hFGFb)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

National regulatory information

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

15.2 Chemical safety assessment

not required

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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Human Fibroblast Growth Factor basic (hFGFb)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

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according to Regulation (EC) No. 1907/2006

Human Vascular Endothelial Growth Factor (hVEGF)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Human Vascular Endothelial Growth Factor (hVEGF)

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 sheetCompany : **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 numberEmergency 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.

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Human Vascular Endothelial Growth Factor (hVEGF)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.

Further information : Use water spray to cool unopened containers.

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Human Vascular Endothelial Growth Factor (hVEGF)

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sectionsFor 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 against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required.

7.3 Specific end use(s)Specific use(s) : No information available.

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.

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Personal protective equipment

Eye protection	:	Tightly fitting safety goggles
Hand protection	:	
Material	:	Nitrile rubber
Rate of permeability	:	> 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
pH	:	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
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

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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**

Remarks: No data is available on the product itself.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish : Remarks: no data available

12.2 Persistence and degradability

Biodegradability : Result: no data available

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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 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

Additional ecological information : no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

SECTION 14: Transport information

IATA 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

IMDG 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 : Marine pollutant: no

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

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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 Code	:	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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Human Vascular Endothelial Growth Factor (hVEGF)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

National regulatory information

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

15.2 Chemical safety assessment

not required

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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Human Vascular Endothelial Growth Factor (hVEGF)

Version 2.0

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

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Analog of Human Insulin-Like Growth Factor-1. Long R3-IGF-1

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Analog of Human Insulin-Like Growth Factor-1. Long R3-IGF-1

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 sheetCompany : **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 numberEmergency 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.

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.

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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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.

Further information : Use water spray to cool unopened containers.

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Analog of Human Insulin-Like Growth Factor-1. Long R3-IGF-1

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sectionsFor 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 against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required.

7.3 Specific end use(s)Specific use(s) : No information available.

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.

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Personal protective equipment

Eye protection	:	Tightly fitting safety goggles
Hand protection	:	
Material	:	Nitrile rubber
Rate of permeability	:	> 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
pH	:	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
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

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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**

Remarks: No data is available on the product itself.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish : Remarks: no data available

12.2 Persistence and degradability

Biodegradability : Result: no data available

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Analog of Human Insulin-Like Growth Factor-1. Long R3-IGF-1

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Revision Date 12.12.2018

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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 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

Additional ecological information : no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

SECTION 14: Transport information

IATA 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

IMDG 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 : Marine pollutant: no

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

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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 Code	:	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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

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according to Regulation (EC) No. 1907/2006

Analog of Human Insulin-Like Growth Factor-1. Long R3-IGF-1

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

National regulatory information

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

15.2 Chemical safety assessment

not required

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Analog of Human Insulin-Like Growth Factor-1. Long R3-IGF-1

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

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according to Regulation (EC) No. 1907/2006

Ascorbic Acid Solution

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Ascorbic Acid Solution

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 sheetCompany : **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 numberEmergency 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.

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Ascorbic Acid Solution

Version 2.0

Revision Date 12.12.2018

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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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.

Further information : Use water spray to cool unopened containers.

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sectionsFor 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 against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required.

7.3 Specific end use(s)Specific use(s) : No information available.

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.

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Personal protective equipment

Eye protection	:	Tightly fitting safety goggles
Hand protection	:	
Material	:	Nitrile rubber
Rate of permeability	:	> 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
pH	:	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
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

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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**

Remarks: No data is available on the product itself.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish : Remarks: no data available

12.2 Persistence and degradability

Biodegradability : Result: no data available

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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 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

Additional ecological information : no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

SECTION 14: Transport information

IATA 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

IMDG 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 : Marine pollutant: no

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

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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 Code	:	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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Ascorbic Acid Solution

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

National regulatory information

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

15.2 Chemical safety assessment

not required

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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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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Human Epidermal Growth Factor (hEGF)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Human Epidermal Growth Factor (hEGF)

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 sheetCompany : **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 numberEmergency 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.

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.

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Human Epidermal Growth Factor (hEGF)

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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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.

Further information : Use water spray to cool unopened containers.

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Human Epidermal Growth Factor (hEGF)

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sectionsFor 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 against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required.

7.3 Specific end use(s)Specific use(s) : No information available.

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.

SAFETY DATA SHEET

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Human Epidermal Growth Factor (hEGF)

Version 2.0

Revision Date 12.12.2018

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Personal protective equipment

Eye protection	:	Tightly fitting safety goggles
Hand protection	:	
Material	:	Nitrile rubber
Rate of permeability	:	> 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
pH	:	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
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

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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**

Remarks: No data is available on the product itself.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish : Remarks: no data available

12.2 Persistence and degradability

Biodegradability : Result: no data available

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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 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

Additional ecological information : no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

SECTION 14: Transport information

IATA 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

IMDG 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 : Marine pollutant: no

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

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Human Epidermal Growth Factor (hEGF)

Version 2.0

Revision Date 12.12.2018

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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 Code	:	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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

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according to Regulation (EC) No. 1907/2006

Human Epidermal Growth Factor (hEGF)

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

National regulatory information

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

15.2 Chemical safety assessment

not required

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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Human Epidermal Growth Factor (hEGF)

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Print Date 10.03.2021

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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Heparin

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : Heparin

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 sheetCompany : **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 numberEmergency 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.

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.

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Heparin

Version 2.0

Revision Date 12.12.2018

Print Date 10.03.2021

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 effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention 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 substance 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.
- Further information : Use water spray to cool unopened containers.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in 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 : No special precautions required.

Advice on protection against fire and explosion : Take precautionary measures against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required.

7.3 Specific end use(s)

Specific use(s) : No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Disodium hydrogen phosphate	Workers	Inhalation	Long-term systemic effects	4,07 mg/m ³

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heptahydrate				
	Consumers	Inhalation	Long-term systemic effects	3,04 mg/m ³

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

Substance name	Environmental Compartment	Value
Disodium hydrogen phosphate heptahydrate	Fresh water	0,05 mg/l
	Marine water	0,005 mg/l
	Intermittent use/release	0,5 mg/l
	Sewage treatment plant	50 mg/l

8.2 Exposure controls

Engineering measures

Avoid splashes.

Personal protective equipment

Eye protection : Tightly fitting safety goggles

Hand protection

Material : Nitrile rubber

Rate of permeability : > 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

pH : 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

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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

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.

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SECTION 11: Toxicological information**11.1 Information on toxicological effects****Further information**

Remarks: No data is available on the product itself.

SECTION 12: Ecological information**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 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

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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SECTION 14: Transport information**IATA** 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

IMDG 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 : Marine pollutant: no

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

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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 Code** : 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) : 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 and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable**National regulatory information**Water contaminating class (Germany) : nwg not water endangering
Classification according to AwSV, Annex 1 (2.2)**15.2 Chemical safety assessment**

not required

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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

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

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