

Kit SDS Cover Sheet For Cell Lines

Version 3.0	Revision Date 16.12.2021	Print Date 27.07.2024
Product Informatic	on	
Commercial Product Name	: 4D-Nucleofector® X Kit SE	
Product name	: For Cell Lines	
Material number	: V4XC-1012	

Components

PBC1-00675 SE Cell Line Solution Box, small volume			
pmaxGFP™ Vector (1.0 µg/µl in 10mM Tris, pH	SDS attached		
8.0; 50µg)			
Supplement 1	SDS attached		
SE Cell Line Nucleofector® Solution	SDS attached		



SE Cell Line Nucleofector® Solution

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SECTION 1: Identification of the s	ubstance/mixture and of the company	/undertaking
1.1 Product identifier		
Commercial Product Name	: 4D-Nucleofector® X Kit SE	
Product name	: For Cell Lines	
1.2 Relevant identified uses of the su	bstance or mixture and uses advised agai	inst
Use of the Substance/Mixture	: For Research Use Only. Not for use in	n diagnostic procedures.
1.3 Details of the supplier of the safe	ty data sheet	
Company	: Lonza Ltd Muenchensteinerstrasse 38 CH-4002 Basel, Switzerland Business Telephone: +41 61 316 81 1	1
	Lonza Verviers Sprl Parc Industriel de Petit-Rechain BE-4800 Verviers, Belgium Business Telephone: +32 8732 1611	
	Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 199	00
	Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denma Business Telephone: + 45 4356 7400	rk
E-mail address Responsible/issuing person	sds@lonza.com	
1.4 Emergency telephone number Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switzerlan Telephone: +41 61 313 94 94 (24h)	ıd

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.



according to Regulation (EC) No. 1907/2006

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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.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled	: No special precautions required.
In case of skin contact	: Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	: Flush eyes with water as a precaution. If eye irritation persists, consult a specialist.
If swallowed	 No hazards which require special first aid measures. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. If you feel unwell, seek medical advice (show the label where possible).

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	No information available.
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.3 Indication of any immediate medi Treatment	Revision Date 16.12.2021	Print Date 27.07.202
Treatment	ical attention and special treatment ne	eded
	: No information available.	
ECTION 5: Firefighting measure	S	
.1 Extinguishing media		
Suitable extinguishing media	: Product is compatible with standa	ard fire-fighting agents.
.2 Special hazards arising from the		
Hazardous combustion products	: No hazardous combustion produc	cts are known
.3 Advice for firefighters		
Special protective equipment for firefighters	: In the event of fire, wear self-con	tained breathing apparatus.
Further information	: The product is not flammable.	
	Use water spray to cool unopene	d containers.
Personal precautions .2 Environmental precautions	: Wear personal protective equipm	ient.
Environmental precautions	: No special environmental precau	tions required.
.3 Methods and material for contain	iment and cleaning up	
Methods for cleaning up	: After cleaning, flush away traces	with water.
.4 Reference to other sections		
	n 8.	
For personal protection see section		
For personal protection see section	e	
	e	
ECTION 7: Handling and storage	e : No special precautions required.	
ECTION 7: Handling and storage	: No special precautions required.	



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		practice.	
7.2 Conditions for safe storage, includi	ng	any incompatibilities	
Requirements for storage areas and containers	:	No special storage conditions required. S	tore in cool place.
7.3 Specific end use(s)			
Specific use(s)	:	For Nucleofector™ Usage only.	
SECTION 8: Exposure controls/pers	sor	al protection	
8.1 Control parameters			
Occupational Exposure Limits			
Contains no substances with oc	cup	ational exposure limit values.	
8.2 Exposure controls			
Engineering measures Avoid splashes.			
Personal protective equipment			
Eye protection	:	Tightly fitting safety goggles	
Hand protection			
Material Rate of permeability	:	Nitrile rubber > 480 min	
Skin and body protection	:	Wear suitable protective clothing. No special protective equipment required	
Respiratory protection	:	No personal respiratory protective equipn	nent normally

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Appearance	: Aqueous solution
Colour	: colourless
Odour	: odourless
Ref. / 00000029766	SDK_EU / EN



according to Regulation (EC) No. 1907/2006

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Melting point/freezing point	ca. 0 °C		
Initial boiling point and boiling range	ca. 100 °C		
Flammability	no data available		
Upper explosion limit / upper flammability limit	no data available		
Lower explosion limit / Lower flammability limit	no data available		
Flash point	does not flash		
Auto-ignition temperature	no data available		
Decomposition temperature	no data available		
рН	7,4 - 7,6		
Viscosity	no data available		
Solubility(ies) Water solubility	soluble		
Partition coefficient: n-octanol/water	no data available		
Vapour pressure	no data available		
Relative density	no data available		
Density	ca. 1 g/cm3		
Relative vapour density	no data available		
Particle characteristics	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.



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10.3 Possibility of hazardous reaction	ons		
Hazardous reactions	:	Stable under normal conditions.	
10.4 Conditions to avoid			
Conditions to avoid	:	no data available	
10.5 Incompatible materials			
Materials to avoid	:	no data available	
10.6 Hazardous decomposition proc No decomposition if stored norma			
SECTION 11: Toxicological infor	matic	on	
11.1 Information on hazard classes	as da	fined in Regulation (EC) No 1272/200	18
11.2 Information on other hazards	13 UC		
	-		
Endocrine disrupting properties Assessment	:	The substance/mixture does not con considered to have endocrine disrup to REACH Article 57(f) or Commissio (EU) 2017/2100 or Commission Reg levels of 0.1% or higher.	ting properties according on Delegated regulation
Further information		Remarks: No data is available on the	e product itself.
SECTION 12: Ecological informa	tion		
12.1 Toxicity			
12.1 Toxicity Toxicity to fish	:	Remarks: no data available	
Toxicity to fish	:	Remarks: no data available	
-	:	Remarks: no data available Remarks: no data available	
Toxicity to fish 12.2 Persistence and degradability Biodegradability	:		
Toxicity to fish 12.2 Persistence and degradability	:		
Toxicity to fish 12.2 Persistence and degradability Biodegradability 12.3 Bioaccumulative potential	:	Remarks: no data available	



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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 Endocrine disrupting properties					
Endocrine disrupting potential	 The substance/mixture does not contain c considered to have endocrine disrupting p to REACH Article 57(f) or Commission De (EU) 2017/2100 or Commission Regulatio levels of 0.1% or higher. 	roperties according legated regulation			
12.7 Other adverse effects					
Endocrine disrupting potential	 The substance/mixture does not contain c considered to have endocrine disrupting p to REACH Article 57(f) or Commission De (EU) 2017/2100 or Commission Regulatio levels of 0.1% or higher. 	roperties according legated regulation			
Additional ecological information	: no data available				

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

: Dispose of in accordance with local regulations.



according to Regulation (EC) No. 1907/2006

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SECT	ION 14: Transport informati	on	
ΙΑΤΑ		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	-CODE	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 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

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 : Not applicable market and use of certain dangerous substances, preparations and articles (Annex XVII)
REACH - Candidate List of Substances of Very High Concern : Not applicable for Authorisation (Article 59).
REACH - List of substances subject to authorisation (Annex Not applicable XIV)
Regulation (EC) No 1005/2009 on substances that deplete the Not applicable ozone layer
Regulation (EC) No 850/2004 on persistent organic pollutants Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. Not applicable
National regulatory information
Water hazard class (Germany) : nwg not water endangering Remarks: Classification according to AwSV, Annex 1 (2.2)



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15.2 Chemical safety assessment

not required

SECTION 16: Other 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

Further information

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,



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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.

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.



Supplement 1

Version 3.0	Revision Date 16.12.2021	Print Date 27.07.2024
SECTION 1: Identification of the s	ubstance/mixture and of the compan	y/undertaking
1.1 Product identifier		
Commercial Product Name	: 4D-Nucleofector® X Kit SE	
Product name	: For Cell Lines	
1.2 Relevant identified uses of the su	bstance or mixture and uses advised aga	ainst
Use of the Substance/Mixture	: For Research Use Only. Not for use	in diagnostic procedures.
1.3 Details of the supplier of the safe	ty 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	I
	Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99 19	990
	Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, Denm Business Telephone: + 45 4356 740	
E-mail address Responsible/issuing person	sds@lonza.com	
1.4 Emergency telephone number Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switzerla Telephone: +41 61 313 94 94 (24h)	and

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.



according to Regulation (EC) No. 1907/2006

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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.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled	: No special precautions required.
In case of skin contact	: Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	: Flush eyes with water as a precaution. If eye irritation persists, consult a specialist.
If swallowed	 No hazards which require special first aid measures. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. If you feel unwell, seek medical advice (show the label where possible).

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	No information available.
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Supplement 1

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4.3 Indication of any immediate medic	al a	ttention and special treatment neede	d
Treatment	:	No information available.	
SECTION 5: Firefighting measures			
5.1 Extinguishing media			
Suitable extinguishing media	:	Product is compatible with standard fi	re-fighting agents.
5.2 Special hazards arising from the s	ubs	ance or mixture	
Hazardous combustion products	:	Chlorine Magnesium oxides Hydrogen chloride (HCI)	
5.3 Advice for firefighters			
Special protective equipment for firefighters	:	In the event of fire, wear self-containe	ed breathing apparatus.
Further information	:	The product is not flammable. Use water spray to cool unopened co	ntainers.
6.1 Personal precautions, protective e Personal precautions		oment and emergency procedures	
6.1 Personal precautions, protective e Personal precautions		oment and emergency procedures	s required.
 6.1 Personal precautions, protective e Personal precautions 6.2 Environmental precautions Environmental precautions 	equir :	oment and emergency procedures Use personal protective equipment. No special environmental precautions	s required.
 6.1 Personal precautions, protective e Personal precautions 6.2 Environmental precautions Environmental precautions 	equir :	oment and emergency procedures Use personal protective equipment. No special environmental precautions	
 6.1 Personal precautions, protective endersonal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containmental precautions 	equir :	oment and emergency procedures Use personal protective equipment. No special environmental precautions and cleaning up	
 6.1 Personal precautions, protective e Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containm 	equir : nent	oment and emergency procedures Use personal protective equipment. No special environmental precautions and cleaning up	
 6.1 Personal precautions, protective endersonal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for contains Methods for cleaning up 6.4 Reference to other sections For personal protection see section 	equir : nent	oment and emergency procedures Use personal protective equipment. No special environmental precautions and cleaning up	
 6.1 Personal precautions, protective endersonal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for contained methods for cleaning up 6.4 Reference to other sections For personal protection see section SECTION 7: Handling and storage 	equir : nent	oment and emergency procedures Use personal protective equipment. No special environmental precautions and cleaning up	
 6.1 Personal precautions, protective endersonal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for contained methods for cleaning up 6.4 Reference to other sections For personal protection see section SECTION 7: Handling and storage 	equir : nent	oment and emergency procedures Use personal protective equipment. No special environmental precautions and cleaning up	
 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containn Methods for cleaning up 6.4 Reference to other sections For personal protection see section SECTION 7: Handling and storage 7.1 Precautions for safe handling 	equir : nent : 8.	oment and emergency procedures Use personal protective equipment. No special environmental precautions and cleaning up After cleaning, flush away traces with	



according to Regulation (EC) No. 1907/2006

Supplement 1

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Hygiene measures	:	Handle in accordance with good indus practice.	trial hygiene and safety
7.2 Conditions for safe storage, includi	ing a	any incompatibilities	
Requirements for storage areas and containers	:	No special storage conditions required	. Store in cool place.
7.3 Specific end use(s)			
Specific use(s)	:	For Nucleofector™ Usage only.	
SECTION 8: Exposure controls/pers	son	al protection	
8.1 Control parameters			
Occupational Exposure Limits			
Contains no substances with oc	cupa	ational 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 concentration of the dangerous substate. No special protective equipment require	nce at the work place.
Respiratory protection	:	No personal respiratory protective equ required.	ipment normally

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Colour	:	colourless	
Appearance	:	Aqueous solution	
Physical state	:	liquid	

Ref. / 00000027156



according to Regulation (EC) No. 1907/2006

Supplement 1

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Odour	: odourless	
Melting point/freezing point	: ca. 0 °C	
Initial boiling point and boiling range	: ca. 100 °C	
Flammability	: no data available	
Upper explosion limit / upper flammability limit	: no data available	
Lower explosion limit / Lower flammability limit	: no data available	
Flash point	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature Decomposition temperature	: no data available	
рН	: no data available	
Viscosity Viscosity, kinematic	: no data available	
Solubility(ies) Water solubility	: no data available	
Partition coefficient: n-octanol/water	: no data available	
Vapour pressure	: no data available	
Relative density	: no data available	
Density	: ca. 1 g/cm3	
Relative vapour density	: no data available	
Particle characteristics	: no data available	

no data available



according to Regulation (EC) No. 1907/2006

Supplement 1

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SECTION 10: Stability and read	tivity	
10.1 Reactivity Stable under recommended sto	rage conditions.	
10.2 Chemical stability Stable under normal conditions		
10.3 Possibility of hazardous reac Hazardous reactions	tions : Stable under normal conditions.	
10.4 Conditions to avoid Conditions to avoid	: no data available	
10.5 Incompatible materials Materials to avoid	: no data available	
10.6 Hazardous decomposition pr		
No decomposition if stored norr		
SECTION 11: Toxicological info	ormation	
SECTION 11: Toxicological info		08
SECTION 11: Toxicological info	ormation	08
SECTION 11: Toxicological info 11.1 Information on hazard classe Acute toxicity	ormation is as defined in Regulation (EC) No 1272/20	08
SECTION 11: Toxicological info 11.1 Information on hazard classe Acute toxicity Acute oral toxicity	ormation s as defined in Regulation (EC) No 1272/20 : Remarks: no data available	08
SECTION 11: Toxicological info 11.1 Information on hazard classe Acute toxicity Acute oral toxicity Acute inhalation toxicity	 brmation bs as defined in Regulation (EC) No 1272/20 : Remarks: no data available : Remarks: no data available Remarks: no data available 	08
SECTION 11: Toxicological info 11.1 Information on hazard classe Acute toxicity Acute oral toxicity Acute inhalation toxicity Skin corrosion/irritation	 brmation bs as defined in Regulation (EC) No 1272/20 : Remarks: no data available : Remarks: no data available Remarks: no data available Remarks: no data available 	08
SECTION 11: Toxicological infe 11.1 Information on hazard classe Acute toxicity Acute oral toxicity Acute inhalation toxicity Skin corrosion/irritation Serious eye damage/eye irrita	prmation as as defined in Regulation (EC) No 1272/20 : Remarks: no data available : Remarks: no data available : Remarks: no data available Remarks: no data available Remarks: no data available ation Remarks: no data available	08
SECTION 11: Toxicological info 11.1 Information on hazard classe Acute toxicity Acute oral toxicity Acute inhalation toxicity Skin corrosion/irritation Serious eye damage/eye irrita Respiratory or skin sensitisat	prmation as as defined in Regulation (EC) No 1272/20 : Remarks: no data available : Remarks: no data available : Remarks: no data available Remarks: no data available Remarks: no data available ation Remarks: no data available	08
SECTION 11: Toxicological info 11.1 Information on hazard classe Acute toxicity Acute oral toxicity Acute inhalation toxicity Skin corrosion/irritation Serious eye damage/eye irrita Respiratory or skin sensitisat Germ cell mutagenicity	ormation as as defined in Regulation (EC) No 1272/20 : Remarks: no data available : Remarks: no data available : Remarks: no data available Remarks: no data available ation Remarks: no data available Remarks: no data available Remarks: no data available Remarks: no data available	08



according to Regulation (EC) No. 1907/2006

Supplement 1

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Reproductive toxicity		
Effects on fertility	: Remarks: no data available	
STOT - single exposure		
	Remarks: no data available	
STOT - repeated exposure	Demarke, no dete evollable	
	Remarks: no data available	
1.2 Information on other hazards		
Endocrine disrupting properties		
Assessment	: The substance/mixture does not con considered to have endocrine disrup to REACH Article 57(f) or Commission (EU) 2017/2100 or Commission Reg levels of 0.1% or higher.	oting properties according on Delegated regulation
Further information		
	Remarks: No data is available on the	e product itself.
SECTION 12: Ecological information 12.1 Toxicity Toxicity to fish	on : Remarks: no data available	
-		
12.2 Persistence and degradability Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil		
Distribution among environmental compartments	: Remarks: no data available	
12.5 Results of PBT and vPvB assess	ment	
Assessment	: This substance/mixture contains no be either persistent, bioaccumulative persistent and very bioaccumulative higher.	e and toxic (PBT), or very
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12.6 Endocrine disrupting properties		
Endocrine disrupting potential	: The substance/mixture does not con considered to have endocrine disrup to REACH Article 57(f) or Commission (EU) 2017/2100 or Commission Reg levels of 0.1% or higher.	ting properties according on Delegated regulation
12.7 Other adverse effects		
Endocrine disrupting potential	: The substance/mixture does not con considered to have endocrine disrup to REACH Article 57(f) or Commissio (EU) 2017/2100 or Commission Reg levels of 0.1% or higher.	ting properties according on Delegated regulation
Additional ecological information	: no data available	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Р	rodu	ıct
	louu	JUL

: Dispose of in accordance with local regulations.

SECTION 14: Transport information

ΙΑΤΑ			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-0	CODE		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

- 14.4
- Packing group Environmental hazards 14.5

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

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Ref. / 00000027156



according to Regulation (EC) No. 1907/2006

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REACH - Restrictions on the manuface market and use of certain dangerous and articles (Annex XVII)		Not applicable	
REACH - Candidate List of Substance for Authorisation (Article 59).	es of Very High Concern :	Not applicable	
REACH - List of substances subject to XIV)	o authorisation (Annex	Not applicable	
Regulation (EC) No 1005/2009 on sul ozone layer	bstances that deplete the	Not applicable	
Regulation (EU) 2019/1021 on persis (recast)	tent organic pollutants	Not applicable	
Seveso III: Directive 2012/18/EU of the major-accident hazards involving dan		of the Council on th	e control of
National regulatory information			
Water hazard class (Germany)	: nwg not water endan Remarks: Classification		Annex 1 (2.2)
15.2 Chemical safety assessment			

not required

SECTION 16: Other 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



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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

Further information

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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pmaxGFP™ Vector (1.0 µg/µl in 10mM Tris, pH 8.0; 50µg)

Version 3.0	Revision Date 16.12.2021	Print Date 27.07.2024
SECTION 1: Identification of the	substance/mixture and of the comp	pany/undertaking
1.1 Product identifier		
Commercial Product Name	: 4D-Nucleofector® X Kit SE	
Product name	: For Cell Lines	
1.2 Relevant identified uses of the su	ubstance or mixture and uses advised	against
Use of the Substance/Mixture	: For Research Use Only. Not for u	se in diagnostic procedures.
1.3 Details of the supplier of the safe	ety 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 1	611
	Lonza Cologne GmbH Nattermannallee 1 DE-50829 Köln, Germany Business Telephone: + 49 221 99	9 1990
	Lonza Copenhagen ApS Strandhaven 12 DK-2665 Vallensbaek Strand, De Business Telephone: + 45 4356 7	
E-mail address Responsible/issuing person	sds@lonza.com	
1.4 Emergency telephone number		
Emergency telephone number	: Lonza Ltd, CH-4002 Basel, Switz Telephone: +41 61 313 94 94 (24	

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.



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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.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks

: No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled	: No special precautions required.
In case of skin contact	: Wash with water and soap as a precaution. If skin irritation persists, call a physician.
In case of eye contact	: Flush eyes with water as a precaution. If eye irritation persists, consult a specialist.
If swallowed	 No hazards which require special first aid measures. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. If you feel unwell, seek medical advice (show the label where possible).

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	No information available.
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4.3 Indication of any immediate medica	l at	tention and special treatment needed
Treatment	:	No information available.
SECTION 5: Firefighting measures		
5.1 Extinguishing media		
Suitable extinguishing media	:	Product is compatible with standard fire-fighting agents.
5.2 Special hazards arising from the su	bst	ance or mixture
Hazardous combustion products	:	No hazardous combustion products are known
5.3 Advice for firefighters		
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	The product is not flammable.
		Use water spray to cool unopened containers.
6.1 Personal precautions, protective eq		oment and emergency procedures
SECTION 6: Accidental release mea 6.1 Personal precautions, protective eq Personal precautions		
6.1 Personal precautions, protective eq		oment and emergency procedures
6.1 Personal precautions, protective eq Personal precautions		oment and emergency procedures
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 	luip :	oment and emergency procedures Use personal protective equipment. No special environmental precautions required.
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 	luip :	oment and emergency procedures Use personal protective equipment. No special environmental precautions required.
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containmental 	luip :	ment and emergency procedures Use personal protective equipment. No special environmental precautions required. and cleaning up
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containmental Methods for cleaning up 	uip ent	ment and emergency procedures Use personal protective equipment. No special environmental precautions required. and cleaning up
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containment Methods for cleaning up 6.4 Reference to other sections 	uip ent	ment and emergency procedures Use personal protective equipment. No special environmental precautions required. and cleaning up
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containment Methods for cleaning up 6.4 Reference to other sections For personal protection see section 8 SECTION 7: Handling and storage 	uip ent	ment and emergency procedures Use personal protective equipment. No special environmental precautions required. and cleaning up
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containment Methods for cleaning up 6.4 Reference to other sections For personal protection see section 8 SECTION 7: Handling and storage 	uip ent	ment and emergency procedures Use personal protective equipment. No special environmental precautions required. and cleaning up
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containment Methods for cleaning up 6.4 Reference to other sections For personal protection see section 8 SECTION 7: Handling and storage 7.1 Precautions for safe handling 	ent	 ment and emergency procedures Use personal protective equipment. No special environmental precautions required. and cleaning up After cleaning, flush away traces with water.
 6.1 Personal precautions, protective eq Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and material for containment Methods for cleaning up 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 protection against fire and 	ent	ment and emergency procedures Use personal protective equipment. No special environmental precautions required. and cleaning up After cleaning, flush away traces with water. No special precautions required.



pmaxGFP[™] Vector (1.0 µg/µl in 10mM Tris, pH 8.0; 50µg) Version 3.0 Revision Date 16.12.2021 Print Date 27.07.2024 practice. 7.2 Conditions for safe storage, including any incompatibilities Requirements for storage areas and : No special storage conditions required. Store in cool place. containers 7.3 Specific end use(s) Specific use(s) : For Nucleofector[™] Usage only. **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 1 No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Appearance	: Aqueous solution
Colour	: colourless



pmaxGFP™ Vector (1.0 µg/µl in 10mM Tris, pH 8.0; 50µg)

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Odour	: odourless	
Melting point/freezing point	: ca. 0 °C	
Initial boiling point and boiling range	: ca. 100 °C	
Flammability	: no data available	
Upper explosion limit / upper flammability limit	: no data available	
Lower explosion limit / Lower flammability limit	: no data available	
Flash point	: no data available	
Auto-ignition temperature	: no data available	
Decomposition temperature Decomposition temperature	: no data available	
рН	: 8,0	
Viscosity Viscosity, kinematic	: no data available	
Solubility(ies) Water solubility	: no data available	
Partition coefficient: n-octanol/water	: no data available	
Vapour pressure	: no data available	
Relative density	: no data available	
Density	: ca. 1 g/cm3	
Relative vapour density	: no data available	
Particle characteristics	: no data available	
9.2 Other information		

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.



Version 3.0	Revision Date 16.12.2021	Print Date 27.07.2024
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	: no data available	
10.6 Hazardous decomposition products	6	

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	
Acute oral toxicity	: Remarks: no data available
Acute inhalation toxicity	: Remarks: no data available
Acute dermal toxicity	: Remarks: no data available
Skin corrosion/irritation	
	Remarks: no data available
Serious eye damage/eye irritation	Remarks: no data available
Respiratory or skin sensitisation	Remarks: no data available
Germ cell mutagenicity	
Genotoxicity in vitro	: Remarks: no data available
Carcinogenicity	
	Remarks: no data available
Reproductive toxicity	
Effects on fertility	: Remarks: no data available
Ref. / 00000027413	SDK_EU/EN



according to Regulation (EC) No. 1907/2006

pmaxGFP™ Vector (1.0 µg/µl in 10mM Tris, pH 8.0; 50µg)

Version 3.0	Revision Date 16.12.2021	Print Date 27.07.2024
0707		
STOT - single exposure	Remarks: no data available	
STOT - repeated exposure	-	
	Remarks: no data available	
11.2 Information on other hazards		
Endocrine disrupting properties		
Assessment	: The substance/mixture does not co considered to have endocrine disru to REACH Article 57(f) or Commiss (EU) 2017/2100 or Commission Re levels of 0.1% or higher.	upting properties according sion Delegated regulation
Further information		
	Remarks: No data is available on t	he product itself.
SECTION 12: Ecological information	n	_
12.1 Toxicity		
Toxicity to fish	: Remarks: no data available	
12.2 Persistence and degradability		
Biodegradability	: Result: no data available	
12.3 Bioaccumulative potential		
Bioaccumulation	: Remarks: no data available	
12.4 Mobility in soil Distribution among environmental	: Remarks: no data available	
compartments		
12.5 Results of PBT and vPvB assessm	ant.	
Assessment	: This substance/mixture contains not	o components considered to
	be either persistent, bioaccumulati persistent and very bioaccumulativ higher.	ve and toxic (PBT), or very
12.6 Endocrine disrupting properties		
Endocrine disrupting potential	: The substance/mixture does not co considered to have endocrine disru	
Ref. / 00000027413	SDK_EU/EN	Page 30 (34)



Versior	n 3.0	Revision Date 16.12.2021	Print Date 27.07.2024
		to REACH Article 57(f) or Comr (EU) 2017/2100 or Commissior levels of 0.1% or higher.	
12.7 Ot	ther adverse effects		
Er	ndocrine disrupting potential	: The substance/mixture does no considered to have endocrine of to REACH Article 57(f) or Commission (EU) 2017/2100 or Commission levels of 0.1% or higher.	lisrupting properties according mission Delegated regulation
Ac	dditional ecological information	: no data available	
SECT	ION 13: Disposal consideration	ons	
13.1 W	aste treatment methods		
Pr	oduct	: Dispose of in accordance with I	ocal regulations.
	ION 14: Transport informatio		
ΙΑΤΑ		Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
IMDG	-CODE	Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable Not applicable Marine pollutant: no 	
ADR		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	



Versior	n 3.0	Revision Date 16.12.2021	Print Date 27.07.2024
RID		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5 DOT	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no Not dangerous goods 	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	
TDG		: Not dangerous goods	
14.1 14.2 14.3 14.4 14.5	UN number Proper shipping name Transport hazard class Packing group Environmental hazards	 Not applicable Not applicable Not applicable Not applicable no 	

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

r	REACH - Restrictions on the manufacture, placing on the narket and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Not applicable
	REACH - Candidate List of Substances of Very High Concern or Authorisation (Article 59).	:	Not applicable
F	REACH - List of substances subject to authorisation (Annex		Not applicable



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XIV)			
Regulation (EC) No 1005/2009 on subsociation of the second	stances that deplete the	Not applicable	
Regulation (EU) 2019/1021 on persiste (recast)	nt 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 hazard class (Germany)	nwg not water endan Remarks: Classification	5 5	Annex 1 (4)
15.2 Chemical safety assessment not required			

SECTION 16: Other 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 -



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Revision Date 16.12.2021

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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

Further information

Date format

dd.mm.yyyy

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