

# Kit SDS Cover Sheet

## For Human MSCs

Version 3.0

Revision Date 16.12.2021

Print Date 15.12.2024

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### Product Information

Commercial Product Name : Nucleofector® 2b Kit  
Product name : For Human MSCs  
Material number : VPE-1001

### Components

Nucleofector® Vector (0.5 µg/µl in 10mM Tris, pH 8.0; 30µg)	SDS attached
Human MSC Nucleofector® Solution	SDS attached
Supplement 1	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**

Commercial Product Name : Nucleofector® 2b Kit  
Product name : For Human MSCs

**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 sheet**

Company : **Lonza Ltd**  
Muenchensteinerstrasse 38  
CH-4002 Basel, Switzerland  
Business Telephone: +41 61 316 81 11

**Lonza Verviers Sprl**  
Parc Industriel de Petit-Rechain  
BE-4800 Verviers, Belgium  
Business Telephone: +32 8732 1611

**Lonza Cologne GmbH**  
Nattermannallee 1  
DE-50829 Köln, Germany  
Business Telephone: + 49 221 99 1990

**Lonza Copenhagen ApS**  
Strandhaven 12  
DK-2665 Vallensbaek Strand, Denmark  
Business Telephone: + 45 4356 7400

E-mail address : sds@lonza.com  
Responsible/issuing person :

**1.4 Emergency telephone number**

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

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**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.

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**SECTION 3: Composition/information on ingredients****3.2 Mixtures****Components**

Remarks : No hazardous ingredients

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**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 medical attention 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 substance or mixture**Hazardous combustion products : Sodium oxides  
Carbon oxides (COx)  
Phosphorus oxides (POx)**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.**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Wear personal protective equipment.

**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 : After cleaning, flush away traces with water.

**6.4 Reference to other sections**

For personal protection see section 8.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advice on safe handling : No special precautions required.

Advice on protection against fire and explosion : No special precautions required.

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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. Store in cool place.

**7.3 Specific end use(s)**

Specific use(s) : For Nucleofector™ Usage only.

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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 : Wear suitable protective clothing.  
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**

Physical state : liquid

Appearance : Aqueous solution

Colour : colourless

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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	:	does not flash
Auto-ignition temperature	:	no data available
Decomposition temperature	:	no data available
pH	:	7,2 - 7,4
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/cm <sup>3</sup>
Relative vapour density	:	no data available
Particle characteristics	:	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.

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**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**

No decomposition if stored normally.

**SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****11.2 Information on other hazards****Endocrine disrupting properties**

Assessment : 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.

**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 : Remarks: no data available

**12.3 Bioaccumulative potential**

Bioaccumulation : Remarks: no data available

**12.4 Mobility in soil**

Distribution among environmental : Remarks: no data available

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compartments

**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 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.

**12.7 Other adverse effects**

Endocrine disrupting potential : 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.

Additional ecological information : no data available

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**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-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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<b>TDG</b>	:	Not dangerous goods
<b>14.1 UN number</b>	:	Not applicable
<b>14.2 Proper shipping name</b>	:	Not applicable
<b>14.3 Transport hazard class</b>	:	Not applicable
<b>14.4 Packing group</b>	:	Not applicable
<b>14.5 Environmental hazards</b>	:	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.

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**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 hazard class (Germany) : WGK 1 slightly hazardous to water  
Remarks: Classification according to AwSV, Annex 1 (5.2)

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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.

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

Commercial Product Name : Nucleofector® 2b Kit  
Product name : For Human MSCs

**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 sheet**

Company : **Lonza Ltd**  
Muenchensteinerstrasse 38  
CH-4002 Basel, Switzerland  
Business Telephone: +41 61 316 81 11

**Lonza Verviers Sprl**  
Parc Industriel de Petit-Rechain  
BE-4800 Verviers, Belgium  
Business Telephone: +32 8732 1611

**Lonza Cologne GmbH**  
Nattermannallee 1  
DE-50829 Köln, Germany  
Business Telephone: + 49 221 99 1990

**Lonza Copenhagen ApS**  
Strandhaven 12  
DK-2665 Vallensbaek Strand, Denmark  
Business Telephone: + 45 4356 7400

E-mail address : sds@lonza.com  
Responsible/issuing person :

**1.4 Emergency telephone number**

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

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

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

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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.

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**SECTION 3: Composition/information on ingredients****3.2 Mixtures****Components**

Remarks : No hazardous ingredients

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**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 medical attention 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 substance or mixture**Hazardous combustion products : Chlorine  
Magnesium oxides  
Hydrogen chloride (HCl)**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.**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 : No special environmental precautions required.

**6.3 Methods and material for containment and cleaning up**

Methods for cleaning up : After cleaning, flush away traces with water.

**6.4 Reference to other sections**

For personal protection see section 8.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advice on safe handling : No special precautions required.

Advice on protection against fire and explosion : No special precautions required.

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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. Store in cool place.

**7.3 Specific end use(s)**

Specific use(s) : For Nucleofector™ Usage only.

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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.

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

Physical state : liquid

Appearance : Aqueous solution

Colour : colourless



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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
pH	:	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/cm <sup>3</sup>
Relative vapour density	:	no data available
Particle characteristics	:	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 : no data available

**10.6 Hazardous decomposition products**

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

**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

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**Reproductive toxicity**

Effects on fertility : Remarks: no data available

**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 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.

**Further information**

Remarks: No data is available on the product itself.

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**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 Endocrine disrupting properties**

Endocrine disrupting potential : 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.

**12.7 Other adverse effects**

Endocrine disrupting potential : 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.

Additional ecological information : no data available

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**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-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

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

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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 (EU) 2019/1021 on persistent organic pollutants (recast) : 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)

**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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**Nucleofector® Vector (0.5 µg/µl in 10mM Tris, pH 8.0; 30µg)**

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

Commercial Product Name : Nucleofector® 2b Kit  
Product name : For Human MSCs

**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 sheet**

Company : **Lonza Ltd**  
Muenchensteinerstrasse 38  
CH-4002 Basel, Switzerland  
Business Telephone: +41 61 316 81 11

**Lonza Verviers Sprl**  
Parc Industriel de Petit-Rechain  
BE-4800 Verviers, Belgium  
Business Telephone: +32 8732 1611

**Lonza Cologne GmbH**  
Nattermannallee 1  
DE-50829 Köln, Germany  
Business Telephone: + 49 221 99 1990

**Lonza Copenhagen ApS**  
Strandhaven 12  
DK-2665 Vallensbaek Strand, Denmark  
Business Telephone: + 45 4356 7400

E-mail address : sds@lonza.com  
Responsible/issuing person :

**1.4 Emergency telephone number**

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

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**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.

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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 : 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 medical attention and special treatment needed**

Treatment : No information available.

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**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 substance 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.

---

**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 : No special environmental precautions required.

**6.3 Methods and material for containment and cleaning up**

Methods for cleaning up : After cleaning, flush away traces with water.

**6.4 Reference to other sections**

For personal protection see section 8.

---

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advice on safe handling : No special precautions required.

Advice on protection against fire and explosion : No special precautions required.

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

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practice.

**7.2 Conditions for safe storage, including 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.

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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 : &gt; 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**

Physical state : liquid

Appearance : Aqueous solution

Colour : colourless

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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
pH	:	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/cm <sup>3</sup>
Relative vapour density	:	no data available
Particle characteristics	:	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.

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**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**

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

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**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 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.

**Further information**

Remarks: No data is available on the product itself.

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**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 Endocrine disrupting properties**

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according

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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.

**12.7 Other adverse effects**

Endocrine disrupting potential : 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.

Additional ecological information : no data available

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**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-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

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



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XIV)

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) 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 (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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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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