

# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250  
 Printing Date: 04.04.2023

NucleoSpin RNA Plant (250)  
 Date of Issue: 03.03.2023

Page: 1/18  
 Version: 2.2.7.9

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

#### 1.1 Product Identifier / Product Name

REF	740949.250	
Product Name	NucleoSpin RNA Plant (250)	
5 x 1000 U rDNase Size F (lyo)		UFI: 8SGV-63EY-520U-3WWU
1 x 60 mL RNase-free H <sub>2</sub> O		
1 x 30 mL Buffer for rDNase		
1 x 125 mL RA1		UFI: 1A6V-H3H9-G20E-ACTR
1 x 80 mL RAW2		UFI: Q9TV-D321-520S-HTM0
3 x 25 mL RA3		
1 x 125 mL RAP		UFI: A57V-K3E8-J20C-XSND
1 x 125 mL MDB		UFI: M48V-530M-W20T-7J23

#### 1.2 Relevant identified Uses of the Substance or Mixture and Uses advised against

##### Relevant identified uses

Product for analytical use.

Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0  
 The exposure scenario is integrated into sections 1-16.

##### Uses advised against

not described

#### 1.3 Details of the Supplier and of the Safety Data Sheet

##### Manufactured by:

MACHEREY-NAGEL GmbH & Co. KG  
 Valencienner Str. 11, 52355 Düren, Germany  
 Phone: +49 2421 969 0

E-mail: [sds@mn-net.com](mailto:sds@mn-net.com) ([msds@mn-net.com](mailto:msds@mn-net.com))

#### 1.4 Emergency Telephone Number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.

USA: American Association Of Poison Control Centers

Rockville, MD 20857, tel. 1-800-222-1222, <<https://www.poisonhelp.org>>

DE: Gemeinsames Giftinformationszentrum (GGIZ)

99089 Erfurt tel. +49 361 730 730

<<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet:

<<http://www.mn-net.com/SDS>>

### SECTION 2: Hazard(s) Identification

#### 2.0 Classification of the complete Product



GHS02 GHS07 GHS08

Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H412	Aquatic Chronic 3

#### 2.1 Classification of the substance or mixture



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Page: 2/18  
 Version: 2.2.7.9

### 125 mL RAP



GHS07

Signal Word                      WARNING

Hazard Identification	Hazard Classes/Categories
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2

### 80 mL RAW2



GHS02



GHS07

Signal Word                      WARNING

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2

### 125 mL RA1



GHS07

Signal Word                      WARNING

Hazard Identification	Hazard Classes/Categories
H302	Acute Tox. 4 oral
H412	Aquatic Chronic 3

### 125 mL MDB



GHS02

Signal Word                      WARNING

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3

### 60 mL RNase-free H<sub>2</sub>O

Signal Word                      Do not need labelling as hazardous  
 -

No Hazard Class



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NucleoSpin RNA Plant (250)  
 Date of Issue: 03.03.2023

Page: 3/18  
 Version: 2.2.7.9

### 1000 U rDNase Size F (Iyo)



GHS08

Signal Word: DANGER

Hazard Identification	Hazard Classes/Categories
H334	Resp. Sens. 1

### 25 mL RA3

Signal Word: Do not need labelling as hazardous  
 -

No Hazard Class

### 30 mL Buffer for rDNase

Signal Word: Do not need labelling as hazardous  
 -

No Hazard Class

List of H phrases: see section 16.2

## 2.2 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

According to the implementation of GHS immediate packages only must be labelled with product identifier(s), GHS symbol(s), signal word, manufacturer name and phone number (OSHA's interpretation of HCS 2012). Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2) / **until 100 mL** (Canada WHMIS 2015). This labelling exemption does not apply to U.S.A. This labelling exemption is NOT valid for sensiblizing substances.

### 125 mL RAP



GHS07

Signal Word: WARNING

### 80 mL RAW2



GHS02



GHS07

Signal Word: WARNING

### 125 mL RA1



GHS07

Signal Word: WARNING

### 125 mL MDB



GHS02



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NucleoSpin RNA Plant (250)  
 Date of Issue: 03.03.2023

Page: 4/18  
 Version: 2.2.7.9

Signal Word: WARNING

**60 mL RNase-free H<sub>2</sub>O**  
 Do not need labelling as hazardous  
 Signal Word: -

**1000 U rDNase Size F (Iyo)**



GHS08

Signal Word: DANGER  
 H334  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 P261sh, P342+311  
 Avoid breathing dust/vapors.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

**25 mL RA3**  
 Do not need labelling as hazardous  
 Signal Word: -

**30 mL Buffer for rDNase**  
 Do not need labelling as hazardous  
 Signal Word: -

### Label elements of the complete product



GHS02



GHS07



GHS08

Signal Word: DANGER  
 H334  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 P261sh, P342+311  
 Avoid breathing dust/vapors.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

## 2.3 Other Hazards

### Possible Hazards from physicochemical Properties

In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. For guanidine thiocyanate CAS 593-84-0: The properties H314, H332 "Causes severe skin burns and eye damage. Harmful if inhaled." are not relevant, because the mixture solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

### Information pertaining to particular Risks to Human and possible Symptoms

Cause after oral intake, impairments of health when ingested in small quantities. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Kit contains small amounts of enzymes, which may cause sensitization by direct and repeated contact.

### Information pertaining to particular Risks to the Environment

**PBT:** not applicable

**vPvB:** not applicable

### Possible endocrine disrupting effects

data not available

## SECTION 3: Composition/Information on Ingredients

### 3.1 Substances or 3.2 Mixtures

80 mL RAW2



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### SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 5/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

Substance name: *guanidine hydrochloride*  
 CAS No.: 50-01-1

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2  
 Chemical Formula: CH<sub>6</sub>ClN<sub>3</sub>  
 Synonyms (de): Guanidiniumchlorid  
 REACH Reg. No.: 01-2119977063-35-0005  
 EC No.: 200-002-3  
 Concentration: 24 - <36 %  
 acc. GHS: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2

Indice No.: 607-148-00-0

Substance name: *ethanol*  
 CAS No.: 64-17-5  
 (denatured with 1% 2-butanone)

Substance rating: H225, Flam. Liq. 2  
 Chemical Formula: C<sub>2</sub>H<sub>6</sub>O; C<sub>2</sub>H<sub>5</sub>OH  
 Synonyms (de): Äthylalkohol, vergällter Spiritus  
 REACH Reg. No.: 01-2119457610-43-xxxx  
 EC No.: 200-578-6  
 Concentration: 20 - <35 %  
 acc. GHS: H226, Flam. Liq. 3

Indice No.: 603-002-00-5

#### 1000 U rDNase Size F (Iyo)

Substance name: *rDNase*  
 CAS No.: 9003-98-9

Substance rating: H334, Resp. Sens. 1  
 Chemical Formula: Enzyme Comm. No. 3.1.21.1, origin: cloned  
 Synonyms (de): Deoxyribonucleodepolymerase  
 EC No.: 232-667-0  
 Concentration: 90 - <100 %  
 acc. GHS: H334, Resp. Sens. 1

#### 25 mL RA3

Substance name: *chemicals/mixture until 1%*  
 CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.  
 Concentration: 0,1 - <1 %  
 acc. GHS: The criteria for classification are not fulfilled.

#### 30 mL Buffer for rDNase

Substance name: *chemicals/mixture until 2%*  
 CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.  
 Concentration: 1 - <2 %  
 acc. GHS: The criteria for classification are not fulfilled.

#### 125 mL RAP

Substance name: *guanidine hydrochloride*  
 CAS No.: 50-01-1

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2  
 Chemical Formula: CH<sub>6</sub>ClN<sub>3</sub>  
 Synonyms (de): Guanidiniumchlorid  
 REACH Reg. No.: 01-2119977063-35-0005  
 EC No.: 200-002-3  
 Concentration: 50 - <66 %  
 acc. GHS: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2

Indice No.: 607-148-00-0

#### 125 mL MDB



# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 6/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

Substance name: *ethanol*  
 CAS No.: 64-17-5  
 (denatured with 1% 2-butanone)  
 Substance rating: H225, Flam. Liq. 2  
 Chemical Formula: C<sub>2</sub>H<sub>6</sub>O; C<sub>2</sub>H<sub>5</sub>OH  
 Synonyms (de): Äthylalkohol, vergällter Spiritus  
 REACH Reg. No.: 01-2119457610-43-xxxx  
 EC No.: 200-578-6  
 Concentration: 5 - <20 %  
 acc. GHS: H226, Flam. Liq. 3

Indice No.: 603-002-00-5

Substance name: *guanidinium thiocyanate*  
 CAS No.: 593-84-0  
 Substance rating: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1C, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3  
 Chemical Formula: C<sub>2</sub>H<sub>6</sub>N<sub>4</sub>S  
 Synonyms (de): Guanidiniumrhodanid  
 REACH Reg. No.: 01-2120735072-65-0001  
 EC No.: 209-812-1  
 Concentration: 5 - <10 %  
 acc. GHS: The criteria for classification are not fulfilled.

Indice No.: 615-004-00-3

### 125 mL RA1

Substance name: *guanidinium thiocyanate*  
 CAS No.: 593-84-0  
 Substance rating: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1C, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3  
 Chemical Formula: C<sub>2</sub>H<sub>6</sub>N<sub>4</sub>S  
 Synonyms (de): Guanidiniumrhodanid  
 REACH Reg. No.: 01-2120735072-65-0001  
 EC No.: 209-812-1  
 Concentration: 45 - <60 %  
 acc. GHS: H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3

Indice No.: 615-004-00-3

### 60 mL RNase-free H<sub>2</sub>O

Substance name: *water*  
 CAS No.: 7732-18-5  
 Substance rating: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: H<sub>2</sub>O  
 REACH Reg. No.: exempt, Annex IV  
 EC No.: 231-791-2  
 Concentration: 90 - <100 %  
 acc. GHS: The criteria for classification are not fulfilled.

## 3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%. List of Hazard and Precaution phrases: see section 16.2.

## SECTION 4: First-Aid Measures

### 4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Take to a doctor, in a raised position if there are breathing difficulties.

#### 4.1.1 After SKIN Contact

Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.

#### 4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open with eye washing bottle, eye douche or running water (protect intact eye).



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Page: 7/18  
Version: 2.2.7.9

- 4.1.3 After INHALATION of Vapors**  
After inhalation of foam or vapor fresh air should be inhaled. Keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function.
- 4.1.4 After ORAL Intake**  
After oral intake lots of water should be drunk after it has been ingested.
- 4.2 Most important Symptoms and Effects, both acute and delayed**  
May cause allergy or asthma symptoms or breathing difficulties if inhaled. Chronic effects: Repeated contact, even in small amounts, can lead to sensitization.
- 4.3 Indication of any immediate Medical Attention and Special Treatment needed**  
Inform patient respectively further measures and the possibility of long-term damages. ---

## SECTION 5: Fire-Fighting Measures

- 5.1 Extinguishable Media**
- 5.1.1 Suitable extinguishing media**  
Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.
- 5.1.2 Unsuitable extinguishing media**  
data not available
- 5.2 Special Hazards arising from the Substance or Mixture**  
WARNING: Flammable. May form explosive vapor-air mixtures. Formation of hazardous and caustic vapor-air mixtures possible.
- 5.3 Advice for Firefighters**  
No, for listed product. Product package burns like paper or plastic.
- 5.4 Additional Information**

## SECTION 6: Accidental Release Measures

- 6.1 Personal Precautions, Protective Equipment and Emergency Procedure**  
Do not breathe vapors. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.
- 6.2 Environmental Precautions**  
PBT: not applicable  
vPvB: not applicable
- 6.3 Methods and Material for Containment and Cleaning up**  
Bind any escaping liquid with inert absorbent.  
And dispose in accordance to local regulations for the disposal of hazards. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into sewer.
- 6.4 Reference to other Sections**

## SECTION 7: Handling and Storage

- 7.1 Precautions for Safe Handling**  
Handling in accordance with the test instruction, that comes with the product. Use only in well-ventilated working areas.
- 7.2 Conditions for Safe Storage, including any Incompatibilities**  
The original product package allows a safe storage. Storage class (German chemical industry): see chapter 12.1  
Storage class (VCI): 3  
Water hazard class (DE): 3



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NucleoSpin RNA Plant (250)  
 Date of Issue: 03.03.2023

Page: 8/18  
 Version: 2.2.7.9

**7.2.1 Requirements for stock rooms and containers**  
 Keep original product packages tightly closed during handling and storage.

**7.3 Specific End Use(s)**  
 Product for analytical use.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control Parameters

**80 mL RAW2**

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1  
 DNEL: [inh] 3.5 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water): -  
PNEC = Predicted No Effect Concentration  
 NIOSH: not listed  
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period  
 OSHA: not listed

Chemical: *ethanol* CAS No.: 64-17-5  
 DNEL: [derm] 343 mg/kg; [inh] 950 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water): 0.96 mg/L  
PNEC = Predicted No Effect Concentration  
 NIOSH: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>  
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period  
 OSHA: 1000 ppm / 1900 mg/m<sup>3</sup>

**1000 U rDNase Size F (Iyo)**  
 Chemical: *rDNase* CAS No.: 9003-98-9

**25 mL RA3**  
 Chemical: *chemicals/mixture until 1%* CAS No.: -

**30 mL Buffer for rDNase**  
 Chemical: *chemicals/mixture until 2%* CAS No.: -

**125 mL RAP**  
 Chemical: *guanidine hydrochloride* CAS No.: 50-01-1  
 DNEL: [inh] 3.5 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water): -  
PNEC = Predicted No Effect Concentration  
 NIOSH: not listed  
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period  
 OSHA: not listed

**125 mL MDB**  
 Chemical: *ethanol* CAS No.: 64-17-5  
 DNEL: [derm] 343 mg/kg; [inh] 950 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water): 0.96 mg/L  
PNEC = Predicted No Effect Concentration  
 NIOSH: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>  
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period  
 OSHA: 1000 ppm / 1900 mg/m<sup>3</sup>

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
 DNEL: [inh] 1092 µg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water): 42.4 µg/L  
PNEC = Predicted No Effect Concentration  
 NIOSH: not listed  
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period  
 OSHA: not listed





# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 9/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

### 125 mL RA1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
 DNEL: [inh] 1092 µg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 PNEC (fresh water): 42.4 µg/L  
PNEC = Predicted No Effect Concentration  
 NIOSH: not listed  
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period  
 OSHA: not listed

### 60 mL RNase-free H<sub>2</sub>O

Chemical: *water* CAS No.: 7732-18-5

## 8.2 Exposure Controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.

### 8.2.1 Respiratory Protection

Use for open access of these substances for example a vapor/dust respirator, class A/AX. No additional recommendations.

### 8.2.2 Skin protection / Hand protection

Yes, gloves (permeation time >30 min - level 2), consist of PVC, Natural latex, Neopren, or Nitril. Use for short times chemical resistant Latex gloves f.ex. with code EN 374-3 level 1.

### 8.2.3 Eye / Face Protection

Yes, Splash Goggles.

### 8.2.4 Skin Protection

Recommended to avoid contamination with these hazards.

### 8.2.5 Hygiene Measures

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

### 8.2.6 Thermal hazards

data not available

## 8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

# SECTION 9: Physical and Chemical Properties

## 9.1 Information on Basic Physical and Chemical Properties

### 80 mL RAW2

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	28 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.03-1.06 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1):	data not available
r) Particle Size:	data not available



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REF: 740949.250  
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NucleoSpin RNA Plant (250)  
 Date of Issue: 03.03.2023

Page: 10/18  
 Version: 2.2.7.9

### 1000 U rDNase Size F (Iyo)

a) State of aggregation:	solid (lyophilized)
b) Color:	white
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 25 mL RA3

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	7-8
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.00 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 30 mL Buffer for rDNase

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.01 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 125 mL RAP

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available



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# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250  
 Printing Date: 04.04.2023

NucleoSpin RNA Plant (250)  
 Date of Issue: 03.03.2023

Page: 11/18  
 Version: 2.2.7.9

e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	4.5-5.0
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.18 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

**125 mL MDB**

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	55 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.7-7.2
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.01 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

**125 mL RA1**

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.13 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

**60 mL RNase-free H<sub>2</sub>O**

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available



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# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 12/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6-8
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.0 g/cm³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 9.2 Further Information

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.  
**Properties relevant to substance groups**

## SECTION 10: Stability and Reactivity

### 10.1 Reactivity

No further data available.

### 10.2 Chemical Stability

no known instability.

### 10.3 Possibility of Hazardous Reactions

Can form very reactive substances with oxidizing agents. Possibility: &H:EUH031& No further data available.

### 10.4 Conditions to avoid

No more required.

### 10.5 Incompatible Materials

---

### 10.6 Hazardous Decomposition Products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

## SECTION 11: Toxicological Information

### 11.1 Information on Toxicological Effects

Following information is valid for pure chemicals. Quantitative data on the toxicity of this product are not available.

#### 80 mL RAW2

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1

TSCA Inventory: listed California Prop. 65 List: not listed

Canada CEPA 1999: DSL yes

LD50 orl rat : 475-907 mg/kg

LC50 ihl rat : 3181-7655 µg/m³/4H

Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

Chemical: *ethanol* CAS No.: 64-17-5

TSCA Inventory: listed California Prop. 65 List: not listed

ACGIH: 1000 ppm

Exposure Routes: inhalation, ingestion, skin and/or eye contact

Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system

Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;

liver damage; anemia; reproductive, teratogenic

Canada CEPA 1999: DSL yes

LD50 orl rat : 6200 mg/kg

LC\_Low ihl gpg : 21,900 mg/L

LC\_Low orl hmn : 1400 mg/kg

LC50 ihl mus : 123,4 mg/L/4H

LC50 ihl rat : 115,9-133,8 mg/L/4H

LD50 orl mus : 3450 mg/kg



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# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 13/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

### 1000 U rDNase Size F (Iyo)

Chemical: *rDNase* CAS No.: 9003-98-9

TSCA Inventory: listed

Acute Effects: Cause after impairments of health when ingested in small quantities.

Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### 25 mL RA3

Chemical: *chemicals/mixture until 1%* CAS No.: -

TSCA Inventory: all listed, <1%

### 30 mL Buffer for rDNase

Chemical: *chemicals/mixture until 2%* CAS No.: -

TSCA Inventory: all listed, <2%

### 125 mL RAP

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1

TSCA Inventory: listed California Prop. 65 List: not listed

Canada CEPA 1999: DSL yes

LD50 orl rat : 475-907 mg/kg

LC50 ihl rat : 3181-7655 µg/m³/4H

Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

### 125 mL MDB

Chemical: *ethanol* CAS No.: 64-17-5

TSCA Inventory: listed California Prop. 65 List: not listed

ACGIH: 1000 ppm

Exposure Routes: inhalation, ingestion, skin and/or eye contact

Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system

Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;

liver damage; anemia; reproductive, teratogenic

Canada CEPA 1999: DSL yes

LD50 orl rat : 6200 mg/kg

LC<sub>Low</sub> ihl gpg : 21,900 mg/L

LC<sub>Low</sub> orl hmn : 1400 mg/kg

LC50 ihl mus : 123,4 mg/L/4H

LC50 ihl rat : 115,9-133,8 mg/L/4H

LD50 orl mus : 3450 mg/kg

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0

TSCA Inventory: listed California Prop. 65 List: not listed

Canada CEPA 1999: DSL yes

LD50 orl rat : 593 mg/kg

LC50 ihl rat : 5,319 mg/L/4H

### 125 mL RA1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0

TSCA Inventory: listed California Prop. 65 List: not listed

Canada CEPA 1999: DSL yes

LD50 orl rat : 593 mg/kg

LC50 ihl rat : 5,319 mg/L/4H

Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

### 60 mL RNase-free H<sub>2</sub>O

Chemical: *water* CAS No.: 7732-18-5

TSCA Inventory: listed

LD50 orl rat : > 90000 mg/kg

## 11.2 Other Hazards

### Possible endocrine disrupting effects

data not available

### Other Information

no additional data available



# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250  
 Printing Date: 04.04.2023

NucleoSpin RNA Plant (250)  
 Date of Issue: 03.03.2023

Page: 14/18  
 Version: 2.2.7.9

### SECTION 12: Ecological Information

#### 12.1 Toxicity

Following information is valid for pure chemicals.

##### 80 mL RAW2

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1  
 PNEC (fresh water): -  
 PNEC = Predicted No Effect Concentration  
 LC50 leuciscus idus/96h : 1759 mg/L  
 LC50 fish/96h : [4d] 690-1850; [48h] 1758-2420 mg/L  
 EC50 daphnia/48h : 70.2 mg/L  
 EC10 pseudomonas putita/16h : [72h] 11.8-33.5 mg/L

Chemical: *ethanol* CAS No.: 64-17-5  
 PNEC (fresh water): 0.96 mg/L  
 PNEC = Predicted No Effect Concentration  
 LC50 daphnia magna/48h : >100 g/L  
 LC50 pimephales promelas/96h : 13.4-15.1 g/L  
 LC50 leuciscus idus/96h : [48h] 8.14 g/L  
 LC50 fish/96h : 13 g/L  
 EC50 daphnia/48h : 9.3-14.2 g/L  
 IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L  
 EC10 pseudomonas putita/16h : [EC5] 6500 mg/L  
 Partition Coefficient (o/w) : -0,31

##### 1000 U rDNase Size F (Iyo)

Chemical: *rDNase* CAS No.: 9003-98-9

##### 25 mL RA3

Chemical: *chemicals/mixture until 1%* CAS No.: -

##### 30 mL Buffer for rDNase

Chemical: *chemicals/mixture until 2%* CAS No.: -

##### 125 mL RAP

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1  
 PNEC (fresh water): -  
 PNEC = Predicted No Effect Concentration  
 LC50 leuciscus idus/96h : 1759 mg/L  
 LC50 fish/96h : [4d] 690-1850; [48h] 1758-2420 mg/L  
 EC50 daphnia/48h : 70.2 mg/L  
 EC10 pseudomonas putita/16h : [72h] 11.8-33.5 mg/L

##### 125 mL MDB

Chemical: *ethanol* CAS No.: 64-17-5  
 PNEC (fresh water): 0.96 mg/L  
 PNEC = Predicted No Effect Concentration  
 LC50 daphnia magna/48h : >100 g/L  
 LC50 pimephales promelas/96h : 13.4-15.1 g/L  
 LC50 leuciscus idus/96h : [48h] 8.14 g/L  
 LC50 fish/96h : 13 g/L  
 EC50 daphnia/48h : 9.3-14.2 g/L  
 IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L  
 EC10 pseudomonas putita/16h : [EC5] 6500 mg/L  
 Partition Coefficient (o/w) : -0,31

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
 PNEC (fresh water): 42.4 µg/L  
 PNEC = Predicted No Effect Concentration  
 LC50 fish/96h : [4d] 89.1 mg/L  
 EC50 daphnia/48h : 42.4 mg/L  
 IC50 scenedesmus quadricauda/72h : 130 mg/L  
 EC10 pseudomonas putita/16h : [10d] 200 mg/L  
 Partition Coefficient (o/w) : -1,11 pH 5.1



# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 15/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

**125 mL RA1**

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
 Harmful to aquatic life with long lasting effects. Avoid contact of chemical/mixture to environment.  
 Environmental hazards must not be labelled with P phrases until 125 mL (EU-CLP 1272/2008 Annex I - 1.5.2).  
 PNEC (fresh water): 42.4 µg/L  
 PNEC = Predicted No Effected Concentration  
 LC50 fish/96h: [4d] 89.1 mg/L  
 EC50 daphnia/48h: 42.4 mg/L  
 IC50 scenedesmus quadricauda/72h: 130 mg/L  
 EC10 pseudomonas putita/16h: [10d] 200 mg/L  
 Partition Coefficient (o/w): -1,11 pH 5.1

**60 mL RNase-free H<sub>2</sub>O**

Chemical: *water* CAS No.: 7732-18-5

**12.2 Persistence and Degradability**

not necessary

**12.3 Bioaccumulative Potential**

not necessary

**12.4 Mobility in Soil**

not necessary

**12.5 Results of PBT and vPvB 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**

data not available

**12.7 Other Adverse Effects**

no additional data available

### SECTION 13: Disposal Considerations

Do not collect in acidic waste. May form toxic gases.  
 Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (RCRA Code D002/D003, EU waste code number 16 05 06).

**13.1 Waste Treatment Methods**

Normally it is possible to empty small amounts (diluted!) into drains.

### SECTION 14: Transport Information

<b>14.1. UN/NA:</b> 1993	<b>14.2. Proper Shipping Name:</b> Flammable liquid, n.o.s. (ethanol mixture)
<b>14.3. Hazard Class:</b> 3	<b>14.4. Packing Group:</b> III
<i>Transportation by Road</i>	
Classification code: F1	Tunnel restriction code: D/E
Limited Quantity: 5 L	Special instructions: 640E
Excepted Quantity: E 1	
<i>Air Transportation</i>	
Limited Quantity: LQ 7	
Excepted Quantity: E 1	
PAX: 355	max. weight PAX: 60 L
CAO: 366	max. weight CAO: 220 L
<i>Maritime Transport</i>	
EmS: F-E, S-E	Storage Category: A

**14.5 Environmental Hazards**

none, contains only small quantities of hazardous substances, contains only small amounts of these substances

**14.6 Special Precautions for User**



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# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 16/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

not necessary

### 14.7 Carriage of bulk cargo by sea in accordance with IMO instruments

Not applicable.

## SECTION 15: Regulatory Information

### 15.1 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

#### U.S. Federal Regulations

OSHA "A Guide to The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"

<https://www.osha.gov/dsg/hazcom/ghs.html>

29 CFR 1910.1200 Hazard communication.

NIOSH Pocket Guide to Chemical Hazards

NIOSH Workplace Safety & Health Topics

TSCA Inventory

#### U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

#### Canada

Canada CEPA 1999 - Domestic Substances List (DSL), List of Toxic Substances (Schedule 1)

MN Leaflet/User manual, also see [www.mn-net.com](http://www.mn-net.com)

### 15.2 Chemical Safety Assessment

not necessary for these small amounts

## SECTION 16: Other Information

### 16.1 Changes compared to the last version

Between versions 2.2.7.9 and 2.2.2.2 following changes were applied: - 5 composition data corrected - 7 substance data corrected

### 16.2 List of Hazard and Precaution Phrases

#### 16.2.1 List of relevant H Phrases

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412	Harmful to aquatic life with long lasting effects.

#### 16.2.2 List of relevant P Phrases

P261sh	Avoid breathing dust/vapors.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

### 16.3 Recommended Restriction on Use

Only for Professional User.

Look about employee restrictions for young people!

Look about employee restrictions for pregnant women and nursing women!

An individual package of this product or test kit has a moderate hazardous potential.

### 16.4 Sources of Key Data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021

Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres

SUVA .CH, limit values in the air at work 2009, revised on 01/2009

Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)

Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG

TRGS 907, German technical rules for listing substances and causes of sensitization, updated November 2011 Regulation

487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)

Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)

Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)

Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)

Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)

TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019

Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)

Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG

Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)



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# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 17/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)  
 Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)

**revisions/updates**

*Reason for revision:* 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary  
 2014-04 adjustment according Regulation 487/2013/EU  
 2016-03 adjustment according Regulation 1221/2015/EU  
 2017-08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU  
 2017-11 adjustment according the ECHA registration dossier  
 2022-11 adjustment according Regulation 878/2020/EU

### 16.5 Further Information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

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### 16.6 Legend / Abbreviations

- acc: according
- ADR: Convention concerning the International Carriage of Dangerous Goods by Road
- Act: acute
- BAT: biological workplace tolerance value
- CAO: Cargo Aircraft Only
- Carc: carcinogen
- CAS: Chemical Abstracts Service
- CLP: Classification, Labelling and Packaging regulation
- CMR: carcinogen, mutagen, reproduction toxic
- Corr: corrosive
- COD: chemical oxygen demand
- CSCL: Chemical Substance Control Law (Jp)
- Dam: damage
- DNEL: Derived No-Effect Level (for workers)
- derm: dermal
- dog: dog
- EC10: Concentration causing a toxic effect in 10% of the test organisms
- EC: European Community
- EC-Nr: Substance number of the EC substance inventory
- EmS: Guide to accident management measures on ships
- EU: European Union
- fish: fish (not specified)
- GHS: Global Harmonized System of Classification and Labeling of Chemicals
- gpg: guinea pig
- ICAO: International Civil Aviation Organization
- ihl: inhaled
- IMDG: International Maritime Dangerous Goods Code
- intrav: intravenous
- ipt: intraperitoneal
- ISHL: Industrial Safety and Health Law (Jp)
- LC50: letale concentration 50%
- LD50: letale dosis 50%
- leuciscus idus: fisch, ide, orfe
- MAK: maximum workplace concentration
- Met: Metall
- mus: mouse
- Muta: mutagen
- NIOSH: National Institute for Occupational Safety and Health (US)
- NRD: Non-rapidly degradable
- onchorhynchus mykiss: fisch, rainbow trout
- orl: oral
- OSHA: Occupational Safety and Health Administration
- PAX: transport on passenger planes allowed
- PBT: persistent, bioaccumulating, toxic substance
- pH: pH value
- pimephales promelas: fisch, fathead minnow



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# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740949.250	NucleoSpin RNA Plant (250)	Page: 18/18
Printing Date: 04.04.2023	Date of Issue: 03.03.2023	Version: 2.2.7.9

PNEC:	Predicted No Effect Concentration
PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	rRegistration number
Repr:	harmful to reproduction
Resp:	respiratory
scu:	sub cutan
RIP:	REACH Implementations Projects
SDS:	safety data sheet
Sens:	sensitisation
STEL:	short term exposure limit
STOT:	Specific Target Organ Toxicity
SVHC:	Substance of Very High Concern
t/a:	tons per year
TCCA:	Toxic Chemicals Control Act (S. Korea)
Tox:	toxic
TSCA:	The Toxic Substances Control Act (US)
TWA:	time weighted average
TRGS:	technical regulations (DE)
vPvB:	very persistent, very bioaccumulating substance

### 16.7 Training Advice

Regular safety training. Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.

