

# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740604

NucleoBond Buffer Set IV

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Printing Date: 04.04.2023

Date of Issue: 03.03.2023

Version: 2.3.2.9

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

### 1.1 Product Identifier / Product Name

REF	740604	
Product Name	NucleoBond Buffer Set IV	
	2 x 0.6-100 mg RNase A (Iyo)	UFI: WWJV-U3PV-U207-MFGF
	2 x 1-75 mg Proteinase K (Iyo)	UFI: S0KV-C3D9-420Q-9T2H
	1 x 8 mL PB	
	2 x 125 mL N2	
	2 x 125 mL N3	UFI: 5F5U-R3F0-U20T-WQMT
	1 x 125 mL N5	
	2 x 125 mL G2	

### 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

H226  
 H315  
 H319  
 H334  
 H412

#### Hazard Classes/Categories

Flam. Liq. 3  
 Skin Irrit. 2  
 Eye Irrit. 2  
 Resp. Sens. 1  
 Aquatic Chronic 3

### 2.1 Classification of the substance or mixture

1-75 mg Proteinase K (Iyo)



MACHEREY-NAGEL GmbH & Co. KG  
 Valencienner Str. 11  
 52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 [info@mn-net.com](mailto:info@mn-net.com)  
 CH Tel.: +41 62 388 55 00 [sales-ch@mn-net.com](mailto:sales-ch@mn-net.com)  
 FR Tel.: +33 388 68 22 68 [sales-fr@mn-net.com](mailto:sales-fr@mn-net.com)  
 US Tel.: +1 888 321 62 24 [sales-us@mn-net.com](mailto:sales-us@mn-net.com)

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GHS07



GHS08

Signal Word

DANGER

**Hazard Identification**

**Hazard Classes/Categories**

H315  
H319  
H334

Skin Irrit. 2  
Eye Irrit. 2  
Resp. Sens. 1

**125 mL G2**

Signal Word

Do not need labelling as hazardous  
-

**Hazard Identification**

**Hazard Classes/Categories**

H412

Aquatic Chronic 3

**8 mL PB**

Signal Word

Do not need labelling as hazardous  
-

No Hazard Class

**125 mL N2**



GHS02

Signal Word

WARNING

**Hazard Identification**

**Hazard Classes/Categories**

H226

Flam. Liq. 3

**125 mL N3**



GHS02

Signal Word

WARNING

**Hazard Identification**

**Hazard Classes/Categories**

H226

Flam. Liq. 3

**125 mL N5**



GHS02



MACHEREY-NAGEL GmbH & Co. KG  
Valenciener Str. 11  
52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 info@mn-net.com  
CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com  
FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com  
US Tel.: +1 888 321 62 24 sales-us@mn-net.com

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Signal Word	WARNING
<b>Hazard Identification</b>	<b>Hazard Classes/Categories</b>
H226	Flam. Liq. 3

**0.6-100 mg RNase A (Iyo)**



GHS08

Signal Word	DANGER
<b>Hazard Identification</b>	<b>Hazard Classes/Categories</b>
H334	Resp. Sens. 1

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 sensibilizing substances.

**1-75 mg Proteinase K (Iyo)**



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.

**125 mL G2**  
 Do not need labelling as hazardous  
 Signal Word: -

**8 mL PB**  
 Do not need labelling as hazardous  
 Signal Word: -

**125 mL N2**



GHS02

Signal Word: WARNING

**125 mL N3**



GHS02

Signal Word: WARNING

**125 mL N5**



MACHEREY-NAGEL GmbH & Co. KG  
 Valencienner Str. 11  
 52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 info@mn-net.com  
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com  
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com  
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com

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GHS02

Signal Word: WARNING

0.6-100 mg RNase A (lyo)



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.

### 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.

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

Cause after 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

This substance/mixture contains components considered to have endocrinedisrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

## SECTION 3: Composition/Information on Ingredients

### 3.1 Substances or 3.2 Mixtures

#### 1-75 mg Proteinase K (lyo)

Substance name: *proteinase K*

CAS No.: 39450-01-6

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1

Chemical Formula: Enzyme Comm. No. 3.4.21.64, origin: tritirachium album

Synonyms (de): Endopeptidase K

EC No.: 254-457-8

Indice No.: 647-014-00-9

Concentration: 90 - <100 %

acc. GHS: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1



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[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 [info@mn-net.com](mailto:info@mn-net.com)  
CH Tel.: +41 62 388 55 00 [sales-ch@mn-net.com](mailto:sales-ch@mn-net.com)  
FR Tel.: +33 388 68 22 68 [sales-fr@mn-net.com](mailto:sales-fr@mn-net.com)  
US Tel.: +1 888 321 62 24 [sales-us@mn-net.com](mailto:sales-us@mn-net.com)

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### 0.6-100 mg RNase A (lyo)

Substance name: *RNase*  
 CAS No.: 9001-99-4

Substance rating: H334, Resp. Sens. 1  
 Chemical Formula: Enzyme Comm. No. 3.1.27.5, origin: bovine pancreas (controlled population)  
 Synonyms (de): RNase A  
 EC No.: 232-646-6  
 Concentration: 90 - <100 %  
 acc. GHS: H334, Resp. Sens. 1

### 125 mL G2

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: 3 - <10 %  
 acc. GHS: The criteria for classification are not fulfilled.

Indice No.: 607-148-00-0

Substance name: *Triton® X-100*  
 CAS No.: 9002-93-1

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1, H410, Aquatic Chronic 2  
 Chemical Formula: C<sub>33</sub>H<sub>60</sub>O<sub>10,5</sub>  
 Synonyms (de): Octylphenoxyethoxyethanol  
**SVHC listed: listed (19/12/2012) Cand. Lst. REACH Art59(10)+Annex XIV No. 42 (-2023)**  
 Concentration: 0,25 - <2,5 %  
 acc. GHS: H412, Aquatic Chronic 3

### 125 mL N3

Substance name: *potassium chloride*  
 CAS No.: 7447-40-7

Substance rating: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: KCl  
 Synonyms (de): KCl  
 REACH Reg. No.: 01-2119539416-36-xxxx  
 EC No.: 231-211-8  
 Concentration: 1 - <10 %  
 acc. GHS: The criteria for classification are not fulfilled.

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: *Stabilisators. Buffers. Detergents < 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.

### 125 mL N2



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Substance name: *potassium chloride*  
 CAS No.: 7447-40-7

Substance rating: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: KCl  
 Synonyms (de): KCl  
 REACH Reg. No.: 01-2119539416-36-xxxx  
 EC No.: 231-211-8  
 Concentration: 1 - <10 %  
 acc. GHS: The criteria for classification are not fulfilled.

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 % Indice No.: 603-002-00-5  
 acc. GHS: H226, Flam. Liq. 3

Substance name: *Stabilisators. Buffers. Detergents < 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.

**125 mL N5**

Substance name: *potassium chloride*  
 CAS No.: 7447-40-7

Substance rating: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: KCl  
 Synonyms (de): KCl  
 REACH Reg. No.: 01-2119539416-36-xxxx  
 EC No.: 231-211-8  
 Concentration: 1 - <10 %  
 acc. GHS: The criteria for classification are not fulfilled.

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 % Indice No.: 603-002-00-5  
 acc. GHS: H226, Flam. Liq. 3

Substance name: *Stabilisators. Buffers. Detergents < 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.

**8 mL PB**



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Substance name:	<i>glycerole</i>		
CAS No.:	56-81-5		
Substance rating:	No criteria for classification or naming of chemical is not required.		
Chemical Formula:	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>		
Synonyms (de):	1,2,3-Propantriol		
REACH Reg. No.:	01-2119471987-18-xxxx		
EC No.:	200-289-5	Indice No.:	n/a
Concentration:	10 - <50 %		
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.

#### 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).

#### 4.1.3 After INHALATION of Vapors

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.

### 5.3 Advice for Firefighters

No, for listed product. Product package burns like paper or plastic.

### 5.4 Additional Information



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52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 [info@mn-net.com](mailto:info@mn-net.com)  
CH Tel.: +41 62 388 55 00 [sales-ch@mn-net.com](mailto:sales-ch@mn-net.com)  
FR Tel.: +33 388 68 22 68 [sales-fr@mn-net.com](mailto:sales-fr@mn-net.com)  
US Tel.: +1 888 321 62 24 [sales-us@mn-net.com](mailto:sales-us@mn-net.com)

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### SECTION 6: Accidental Release Measures

- 6.1 Personal Precautions, Protective Equipment and Emergency Procedure**  
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**  
And dispose in accordance to local regulations for the disposal of hazards. Clean any contaminated equipment and floors with plenty of water.
- 6.4 Reference to other Sections**

### SECTION 7: Handling and Storage

- 7.1 Precautions for Safe Handling**  
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): 1
- 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

<b>1-75 mg Proteinase K (Iyo)</b> Chemical: <i>proteinase K</i>	CAS No.: 39450-01-6
<b>0.6-100 mg RNase A (Iyo)</b> Chemical: <i>RNase</i>	CAS No.: 9001-99-4
<b>125 mL G2</b> Chemical: <i>guanidine hydrochloride</i> DNEL: [inh] 3.5 mg/m <sup>3</sup> DNEL = Derived No-Effect Level (for workers) PNEC (fresh water): - PNEC = Predicted No Effected 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	CAS No.: 50-01-1
<b>125 mL N3</b> Chemical: <i>potassium chloride</i>	CAS No.: 7447-40-7
Chemical: <i>ethanol</i> 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 Effected 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>	CAS No.: 64-17-5
Chemical: <i>Triton® X-100</i>	CAS No.: 9002-93-1





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Chemical:	<i>Stabilisators. Buffers. Detergents &lt; 1%</i>	CAS No.: -
<b>125 mL N2</b>		
Chemical:	<i>potassium chloride</i>	CAS No.: 7447-40-7
Chemical:	<i>ethanol</i>	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:	<i>Stabilisators. Buffers. Detergents &lt; 1%</i>	CAS No.: -
<b>125 mL N5</b>		
Chemical:	<i>potassium chloride</i>	CAS No.: 7447-40-7
Chemical:	<i>ethanol</i>	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:	<i>Stabilisators. Buffers. Detergents &lt; 1%</i>	CAS No.: -
<b>8 mL PB</b>		
Chemical:	<i>glycerole</i>	CAS No.: 56-81-5
DNEL:	[inh] 56 mg/m <sup>3</sup> DNEL = Derived No-Effect Level (for workers)	
PNEC (fresh water):	0.885 mg/L PNEC = Predicted No Effect Concentration	

### 8.2 Exposure Controls

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.

#### 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.



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### SECTION 9: Physical and Chemical Properties

#### 9.1 Information on Basic Physical and Chemical Properties

**1-75 mg Proteinase K (lyo)**

a) State of aggregation:	solid (lyophilized)
b) Color:	slightly grey
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

**0.6-100 mg RNase A (lyo)**

a) State of aggregation:	solid (lyophilized)
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:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	0-100 %
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

**125 mL G2**

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:	7.5-8.5
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 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available



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### 125 mL N3

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:	49 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6-6.5
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:	1.04 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 125 mL N2

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:	38 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6-6.5
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 g/mL
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 125 mL N5

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:	38 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	8-9
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 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 8 mL PB

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



MACHEREY-NAGEL GmbH & Co. KG  
 Valenciennes Str. 11  
 52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 [info@mn-net.com](mailto:info@mn-net.com)  
 CH Tel.: +41 62 388 55 00 [sales-ch@mn-net.com](mailto:sales-ch@mn-net.com)  
 FR Tel.: +33 388 68 22 68 [sales-fr@mn-net.com](mailto:sales-fr@mn-net.com)  
 US Tel.: +1 888 321 62 24 [sales-us@mn-net.com](mailto:sales-us@mn-net.com)

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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:	1.11 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 9.2 Further Information

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. 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.

#### 1-75 mg Proteinase K (lyo)

Chemical: *proteinase K* CAS No.: 39450-01-6

TSCA Inventory: listed (CAS 102925-54-2)

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.

#### 0.6-100 mg RNase A (lyo)

Chemical: *RNase* CAS No.: 9001-99-4

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.

#### 125 mL G2

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



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LC50 ihl rat : 3181-7655 µg/m³/4H

Chemical: *Triton® X-100* CAS No.: 9002-93-1  
 TSCA Inventory: listed  
 LD50 orl rat : 707-1800 mg/kg

**125 mL N3**

Chemical: *potassium chloride* CAS No.: 7447-40-7  
 TSCA Inventory: listed  
 LD50 orl rat : 2600 mg/kg

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

Chemical: *Stabilisators. Buffers. Detergents < 1%* CAS No.: -  
 TSCA Inventory: all listed, <1%

**125 mL N2**

Chemical: *potassium chloride* CAS No.: 7447-40-7  
 TSCA Inventory: listed  
 LD50 orl rat : 2600 mg/kg

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

Chemical: *Stabilisators. Buffers. Detergents < 1%* CAS No.: -  
 TSCA Inventory: all listed, <1%

**125 mL N5**

Chemical: *potassium chloride* CAS No.: 7447-40-7  
 TSCA Inventory: listed  
 LD50 orl rat : 2600 mg/kg

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



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LC <sub>50</sub> orl hmn :	1400 mg/kg
LC <sub>50</sub> ihl mus :	123,4 mg/L/4H
LC <sub>50</sub> ihl rat :	115,9-133,8 mg/L/4H
LD <sub>50</sub> orl mus :	3450 mg/kg

Chemical: *Stabilisators. Buffers. Detergents < 1%* CAS No.: -  
 TSCA Inventory: all listed, <1%

**8 mL PB**  
 Chemical: *glycerole* CAS No.: 56-81-5  
 TSCA Inventory: listed (1,2,3-Propanetriol)  
 Exposure Routes: inhalation, skin and/or eye contact  
 Target Organs: Eyes, skin, respiratory system, kidneys  
 Symptoms: irritation eyes, skin, respiratory system; headache, nausea, vomiting; kidney injury  
 LD<sub>50</sub> orl rat : 12600 mg/kg

### 11.2 Other Hazards

#### Possible endocrine disrupting effects

This substance/mixture contains components considered to have endocrinedisrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

#### Other Information

no additional data available

## SECTION 12: Ecological Information

### 12.1 Toxicity

Following information is valid for pure chemicals.

**1-75 mg Proteinase K (Iyo)**  
 Chemical: *proteinase K* CAS No.: 39450-01-6

**0.6-100 mg RNase A (Iyo)**  
 Chemical: *RNase* CAS No.: 9001-99-4

**125 mL G2**  
 Chemical: *guanidine hydrochloride* CAS No.: 50-01-1  
 PNEC (fresh water) : -  
 PNEC = Predicted No Effect Concentration  
 LC<sub>50</sub> leuciscus idus/96h : 1759 mg/L  
 LC<sub>50</sub> fish/96h : [4d] 690-1850; [48h] 1758-2420 mg/L  
 EC<sub>50</sub> daphnia/48h : 70.2 mg/L  
 EC<sub>10</sub> pseudomonas putita/16h : [72h] 11.8-33.5 mg/L

Chemical: *Triton® X-100* CAS No.: 9002-93-1  
 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).

**125 mL N3**  
 Chemical: *potassium chloride* CAS No.: 7447-40-7

Chemical: *ethanol* CAS No.: 64-17-5  
 PNEC (fresh water) : 0.96 mg/L  
 PNEC = Predicted No Effect Concentration  
 LC<sub>50</sub> daphnia magna/48h : >100 g/L  
 LC<sub>50</sub> pimephales promelas/96h : 13.4-15.1 g/L  
 LC<sub>50</sub> leuciscus idus/96h : [48h] 8.14 g/L  
 LC<sub>50</sub> fish/96h : 13 g/L  
 EC<sub>50</sub> daphnia/48h : 9.3-14.2 g/L  
 IC<sub>50</sub> scenedesmus quadricauda/72h : [7d] 5000 mg/L  
 EC<sub>10</sub> pseudomonas putita/16h : [EC5] 6500 mg/L  
 Partition Coefficient (o/w) : -0,31



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Chemical: *Stabilisators. Buffers. Detergents < 1%* CAS No.: -

**125 mL N2**

Chemical: *potassium chloride* CAS No.: 7447-40-7

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

PNEC (fresh water) : 0.96 mg/L  
PNEC = Predicted No Effected 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: *Stabilisators. Buffers. Detergents < 1%* CAS No.: -

**125 mL N5**

Chemical: *potassium chloride* CAS No.: 7447-40-7

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

PNEC (fresh water) : 0.96 mg/L  
PNEC = Predicted No Effected 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: *Stabilisators. Buffers. Detergents < 1%* CAS No.: -

**8 mL PB**

Chemical: *glycerole* CAS No.: 56-81-5

PNEC (fresh water) : 0.885 mg/L  
PNEC = Predicted No Effected Concentration

LC50 fish/96h : >5000<sub>24h</sub> mg/L  
EC50 daphnia/48h : >10<sub>24h</sub> g/L  
IC50 scenedesmus quadricauda/72h : IC5<sub>7d</sub> >10 g/L  
EC10 pseudomonas putita/16h : EC5: >10 g/L  
Partition Coefficient (o/w) : -1,76

### 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

This substance/mixture contains components considered to have endocrinedisrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.



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### 12.7 Other Adverse Effects

no additional data available

## SECTION 13: Disposal Considerations

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

## SECTION 14: Transport Information

14.1 - 14.4: No dangerous goods according to the Transport regulations (Ethanol: ADR SI144/ IATA A58)

### 14.5 Environmental Hazards

none, contains only small amounts of these substances

### 14.6 Special Precautions for User

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 &amp; 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)

### 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 2.3.2.9 and 2.2.2.2 following changes were applied: - 1 product component 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.
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.



MACHEREY-NAGEL GmbH & Co. KG  
 Valenciener Str. 11  
 52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 [info@mn-net.com](mailto:info@mn-net.com)  
 CH Tel.: +41 62 388 55 00 [sales-ch@mn-net.com](mailto:sales-ch@mn-net.com)  
 FR Tel.: +33 388 68 22 68 [sales-fr@mn-net.com](mailto:sales-fr@mn-net.com)  
 US Tel.: +1 888 321 62 24 [sales-us@mn-net.com](mailto:sales-us@mn-net.com)



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### 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 progress (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)

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

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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



MACHEREY-NAGEL GmbH & Co. KG  
 Valenciennes Str. 11  
 52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 [info@mn-net.com](mailto:info@mn-net.com)  
 CH Tel.: +41 62 388 55 00 [sales-ch@mn-net.com](mailto:sales-ch@mn-net.com)  
 FR Tel.: +33 388 68 22 68 [sales-fr@mn-net.com](mailto:sales-fr@mn-net.com)  
 US Tel.: +1 888 321 62 24 [sales-us@mn-net.com](mailto:sales-us@mn-net.com)

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ipt:	intraperitoneal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	lethal concentration 50%
LD50:	lethal dose 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:	fish, 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:	fish, fathead minnow
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.



MACHEREY-NAGEL GmbH & Co. KG  
 Valencienner Str. 11  
 52355 Düren · Germany  
[www.mn-net.com](http://www.mn-net.com)

DE Tel.: +49 24 21 969-0 info@mn-net.com  
 CH Tel.: +41 62 388 55 00 sales-ch@mn-net.com  
 FR Tel.: +33 388 68 22 68 sales-fr@mn-net.com  
 US Tel.: +1 888 321 62 24 sales-us@mn-net.com