

# Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740722.1	NucleoSpin 8 Trace (12x8)	Page: 1/13
Printing date: 15.04.2026	Date of issue: 21.11.2024	Version: 2.7.9.10

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

### 1.1 Product identifier

REF 740722.1  
 Product name NucleoSpin 8 Trace (12x8)

REACH Registration number(s): see SECTION 3.1/3.2 or  
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1 x 50 mL B5  
 1 x 60 mL BE  
 2 x 1.8 mL PB  
 1 x 33 mg Proteinase K  
 1 x 125 mL FLB

UFI: G2KV-V32P-F207-X4NK

### 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 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 (msds@mn-net.com)

### 1.4 Emergency telephone number

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

### 2.0 Classification of the complete product according to Regulation (EC) 1272/2008



GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H335	resp. irrit. STOT SE 3

### 2.1 Classification of the substance or mixture according to Regulation (EC) 1272/2008

125 mL FLB

Signal word Do not need labelling as hazardous  
 -

No hazard class



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## 1.8 mL PB

Signal word Do not need labelling as hazardous  
-  
No hazard class

## 33 mg Proteinase K



GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H335	resp. irrit. STOT SE 3

## 50 mL B5

Signal word Do not need labelling as hazardous  
-  
No hazard class

## 60 mL BE

Signal word Do not need labelling as hazardous  
-  
No hazard class

List of H phrases: see section 16.2

## 2.2 Label elements according regulation (EC) 1272/2008

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2). This labelling exemption is NOT valid for sensitizing substances.

## 125 mL FLB

Do not need labelling as hazardous  
Signal word: -

## 1.8 mL PB

Do not need labelling as hazardous  
Signal word: -

## 33 mg Proteinase K



GHS07 GHS08

Signal word: DANGER  
H334  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
P261sh, P284, P342+311, P501  
Avoid breathing dust/vapours.[In case of inadequate ventilation] wear respiratory protection.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.Dispose of contents/container to regulated waste treatment.

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**50 mL B5**  
Do not need labelling as hazardous  
Signal word: -

**60 mL BE**  
Do not need labelling as hazardous  
Signal word: -

### Label elements of the complete product



GHS07 GHS08

Signal word: DANGER  
H334  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
P261sh, P284, P342+311, P501  
Avoid breathing dust/vapours.[In case of inadequate ventilation] wear respiratory protection.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.Dispose of contents/container to regulated waste treatment.

## 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.

### Information pertaining to particular risks to human and possible symptoms

Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities.  
Kit contains small amounts of enzymes: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### Information pertaining to particular risks to the environment

**PBT:** not applicable  
**vPvB:** not applicable

### Possible endocrine disrupting effects

no data available

## SECTION 3: Composition / information on ingredients

### 3.1 Substances or 3.2 Mixtures

#### 125 mL FLB

Substance name: *guanidine hydrochloride*  
CAS No.: 50-01-1  
  
Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2  
Formula: CH<sub>6</sub>ClN<sub>3</sub>  
Pseudonym (de): Guanidiniumchlorid  
REACH Reg. No.: 01-2119977063-35-0005  
EC No.: 200-002-3  
Concentration: 3 - <10 %  
acc. CLP (GHS): The criteria for classification are not fulfilled.

Indice No.: 607-148-00-0

#### 1.8 mL PB

Substance name: *glycerole*  
CAS No.: 56-81-5  
  
Substance rating: No criteria for classification or naming of chemical not required.  
Formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>  
Pseudonym (de): 1,2,3-Propantriol  
REACH Reg. No.: 01-2119471987-18-xxxx  
EC No.: 200-289-5  
Concentration: 10 - <50 %  
acc. CLP (GHS): The criteria for classification are not fulfilled.

Indice No.: n/a



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## 33 mg Proteinase K

Substance name: *proteinase K (origin: aspergillus oryzae)*  
CAS No.: 9074-07-1

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1, H335, resp. irrit. STOT SE 3  
Formula: Enzyme C. No. 3.4.21.63, origin: aspergillus oryzae  
Pseudonym (de): Alk. Aspergillopeptidase B  
EC No.: 232-977-6  
Concentration: 90 - <100 %  
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1, H335, resp. irrit. STOT SE 3

## 50 mL B5

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

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

## 60 mL BE

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

Substance rating: No criteria for classification or naming of chemical not required.  
Concentration: 0,1 - <1 %  
acc. CLP (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 H and P 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).

#### 4.1.3 After INHALATION of vapours

After inhalation of foam or vapour 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. ---



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## SECTION 5: Firefighting measures

### 5.1 Extinguishing 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

no data available

### 5.2 Special hazards arising from the substance or mixture

Formation of hazardous and caustic vapour-air mixtures possible.

### 5.3 Advice for firefighters

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

### 5.4 Additional information

no data available

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. 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 hazardous chemicals. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into drains.

### 6.4 Reference to other sections

no data available

## 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

Safe storage is guaranteed in the original packaging from MACHEREY-NAGEL. Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 10

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

#### 33 mg Proteinase K

Chemical: *proteinase K (origin: aspergillus oryzae)*

CAS No.: 9074-07-1

SUVA(CH) MAK value: 0,06 15min µg/m<sup>3</sup>

#### 125 mL FLB

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): -



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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

**50 mL B5**

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

**60 mL BE**

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

**1.8 mL PB**

Chemical: *glycerole* 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

TRGS 900 (DE): 200 E mg/m<sup>3</sup>  
 E/e respirable

Short-term exposure factor: 2 (I), Y  
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 50 e\* mg/m<sup>3</sup>

## 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 protection filter, class A/AX. No additional recommendations.

### 8.2.2 Skin protection / Hand protection

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

### 8.2.3 Eye / Face Protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection.

### 8.2.4 Skin protection

Recommended to avoid contamination with these hazards.

### 8.2.5 Personal hygiene

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

no data 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

**33 mg Proteinase K**

a) State of aggregation:	solid (lyophilized)
b) Colour:	slightly grey
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	no data available
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available



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n) Dispersion coefficient ( $K_{o/w}$ ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density ( $air=1$ ):	no data available
r) Particle size:	no data available

**125 mL FLB**

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	7.5 - 8.5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ( $K_{o/w}$ ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.03 g/cm <sup>3</sup>
q) Relative vapour density ( $air=1$ ):	no data available
r) Particle size:	no data available

**50 mL B5**

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	7-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ( $K_{o/w}$ ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.00 g/cm <sup>3</sup>
q) Relative vapour density ( $air=1$ ):	no data available
r) Particle size:	no data available

**60 mL BE**

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	8-9
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ( $K_{o/w}$ ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.0 g/cm <sup>3</sup>
q) Relative vapour density ( $air=1$ ):	no data available



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r) Particle size: no data available

**1.8 mL PB**

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	3.5 - 6.0
l) Kinematic viscosity:	no data available
m) Solubility in water:	100 %
n) Dispersion coefficient (K <sub>o/w</sub> ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.11 g/cm <sup>3</sup>
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

## 9.2 Other information

**9.2.1 Information on physical hazard classes**  
no data available

**9.2.2 Other safety-related parameters**  
No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

## 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**  
Note: Can form very reactive substances with oxidizing agents. No further data available.

**10.4 Conditions to avoid**  
No more required.

**10.5 Incompatible materials**  
no additional data available

**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 the hazard classes according regulation (EC) 1272/2008**  
Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

<b>33 mg Proteinase K</b>		
Chemical:	<i>proteinase K (origin: aspergillus oryzae)</i>	CAS No.: 9074-07-1
TSCA Inventory:	listed (CAS 9080-55-1)	
Japan CSCL/PRTR:	not listed	
Japan ISHL:	not listed	



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Korea Exist.Chem.Inventory: not listed  
 Acute Effects: Cause after inhalation of vapours/dust, 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 FLB**

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1  
 TSCA Inventory: listed California Proposition 65 List: not listed  
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes  
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed  
 Japan ISHL: not listed  
 South Korea TCCA: not listed  
 Korea Exist.Chem.Inventory: KE-18111  
 LD50 orl rat : 475-907 mg/kg  
 LC50 inh rat : 3181-7655 µg/m³/4H

**50 mL B5**

Chemical: *chemicals/mixture until 1%* CAS No.: -  
 TSCA Inventory: all listed, <1%  
 Korea Exist.Chem.Inventory: listed

**60 mL BE**

Chemical: *chemicals/mixture until 1%* CAS No.: -  
 TSCA Inventory: all listed, <1%  
 Korea Exist.Chem.Inventory: 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  
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed  
 Japan ISHL: not listed  
 Korea Exist.Chem.Inventory: KE-29297  
 LD50 orl rat : 12600 mg/kg  
 TRGS 905 (DE): R F C

**11.2 Other hazards**

**Possible endocrine disrupting effects**  
 no data available

**Other information**  
 no additional data available

## SECTION 12: Ecological information

**12.1 Toxicity**

Following information is valid for pure substances.

**33 mg Proteinase K**

Substance name: *proteinase K (origin: aspergillus oryzae)* CAS-Nr.: 9074-07-1  
 Water hazard class (DE): 1  
 Storage class (VCI): 13

**125 mL FLB**

Substance name: *guanidine hydrochloride* CAS-Nr.: 50-01-1  
 PNEC (fresh water) : -  
 PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected  
 LC50 leuciscus idus/96h : 1759 mg/L  
 LC50 fish/96h : [4d] 690-1850; [48h] 1758-2420 mg/L



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EC50 daphnia/48h : 70.2 mg/L  
 EC10 pseudomonas putita/16h : [72h] 11.8-33.5 mg/L  
 Water hazard class (DE): 1 WGK No.: 0788  
 Storage class (VCI): 12

**50 mL B5**

Substance name: *chemicals/mixture until 1%* CAS-Nr.: -  
 Water hazard class (DE): 1  
 Storage class (VCI): 12-13

**60 mL BE**

Substance name: *chemicals/mixture until 1%* CAS-Nr.: -  
 Water hazard class (DE): 1  
 Storage class (VCI): 12-13

**1.8 mL PB**

Substance name: *glycerole* CAS-Nr.: 56-81-5  
 PNEC (fresh water) : 0.885 mg/L  
 PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected  
 LC50 fish/96h : >5000 24h mg/L  
 EC50 daphnia/48h : >10 24h g/L  
 IC50 scenedesmus quadricauda/72h : IC5 7d >10 g/L  
 EC10 pseudomonas putita/16h : EC5: >10 g/L  
 Water hazard class (DE): 0  
 Storage class (VCI): 10

**12.2 Persistence and degradability**

**12.3 Bioaccumulative potential**

**1.8 mL PB**

Substance name: *glycerole* CAS-Nr.: 56-81-5  
 Dispersion coefficient (K<sub>ow</sub>): -1,76

**12.4 Mobility in soil**

**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**

no data available

**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 (waste code number 16 05 06).

**13.1 Waste treatment methods**

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



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## SECTION 14: Transport information

14.1 - 14.4 Not necessary

- 14.5 Environmental hazards**  
none, contains only small quantities of hazardous substances
- 14.6 Special precautions for user**  
not necessary
- 14.7 Carriage in bulk 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**  
 Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020  
 Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017  
 TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017  
 TRGS 220, National aspects when preparing safety data sheets, Jan 2017  
 TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017  
 BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012  
 Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016  
 MN leaflet/instructions for use, also at [www.mn-net.com](http://www.mn-net.com)  
 If necessary, observe other country-specific regulations.
- 15.2 Chemical safety assessment**  
no data available

## SECTION 16: Other information

- 16.1 Changes compared to the last version**  
Between versions 2.7.9.10 and 2.2.2.2 following changes were applied: - 5 product component data corrected - 7 composition data corrected - 8 substance data corrected
- 16.2 List of H and P phrases**
  - 16.2.1 List of relevant H phrases**

H	Between versions 2.7.9.10 and 2.2.2.2 following changes were applied: - 5 product component data corrected - 7 composition data corrected - 8 substance data corrected
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
  - 16.2.2 List of relevant P phrases**

P261sh	Avoid breathing dust/vapours.
P284	[In case of inadequate ventilation] wear respiratory protection.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P501	Dispose of contents/container to regulated waste treatment.
- 16.3 Recommended restriction on use**  
 Only for professional user.  
 Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!  
 Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!  
 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)



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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)  
 Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th 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  
  
 2017-11 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 oxigen 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 spezified)
- 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: intraperitoneaal
- 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)



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- 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
- RIP: REACH Implementations Projects
- scu: sub cutan
- 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.

