



# Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 744211

NucleoMag Pathogen Prefilled Plates

Page: 2/25

Printing date: 15.04.2026

Date of issue: 26.03.2026

Version: 2.30.7.1

## 400 µg Carrier RNA

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

## 2 mL Liquid Proteinase K



GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H334	Resp. Sens. 1

## 30 mL NPL1



GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2

## 500 µL Carrier RNA Buffer



GHS05



GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H302	Acute Tox. 4 oral
H314	Skin Corr. 1 B
H412	Aquatic Chronic 3

## 9.6 mL NPW3 (Prefilled plate)



GHS02



GHS07

Signal word WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral



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## 9.6 mL NPW4 (Prefilled plate)



GHS02

GHS07

Signal word

WARNING

### Hazard identification

H226  
H302

### Hazard classes/categories

Flam. Liq. 3  
Acute Tox. 4 oral

## 9.2 mL NPB2 (Prefilled plate)



GHS02

GHS07

Signal word

WARNING

### Hazard identification

H226  
H302

### Hazard classes/categories

Flam. Liq. 3  
Acute Tox. 4 oral

## 9.6 mL 80% Ethanol (Prefilled plate)



GHS02

Signal word

DANGER

### Hazard identification

H225

### Hazard classes/categories

Flam. Liq. 2

## 1.6 mL NPE5 (Prefilled plate)

Signal word

Do not need labelling as hazardous

No hazard class

## 0.32 mL B-Beads (Prefilled plate)

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** 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). This labelling exemption is NOT valid for sensibilizing substances.

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**400 µg Carrier RNA**

Do not need labelling as hazardous  
Signal word: -

**2 mL Liquid Proteinase K**



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.

**30 mL NPL1**



GHS07

Signal word: WARNING

**500 µL Carrier RNA Buffer**



GHS05



GHS07

Signal word: DANGER

H314

Causes severe skin burns and eye damage.

P260sh, P264, P280sh, P303+361+353, P305+351+338, P310, P405, P501

Do not breathe dust/vapours.Wash hands thoroughly after handling.Wear protective gloves/eye protection.IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.Immediately call a POISON CENTER/doctor.Store locked up.Dispose of contents/container to regulated waste treatment.

**9.6 mL NPW3 (Prefilled plate)**



GHS02



GHS07

Signal word: WARNING

**9.6 mL NPW4 (Prefilled plate)**



GHS02



GHS07

Signal word: WARNING

**9.2 mL NPB2 (Prefilled plate)**



GHS02



GHS07



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Signal word: WARNING

**9.6 mL 80% Ethanol (Prefilled plate)**



GHS02

Signal word: DANGER

**1.6 mL NPE5 (Prefilled plate)**

Do not need labelling as hazardous

Signal word: -

**0.32 mL B-Beads (Prefilled plate)**

Do not need labelling as hazardous

Signal word: -

## Label elements of the complete product



GHS02



GHS05



GHS08

Signal word: DANGER

H314, H334

Causes severe skin burns and eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. P260sh, P264, P280sh, P284, P303+361+353, P305+351+338, P310, P405, P501

Do not breathe dust/vapours. Wash hands thoroughly after handling. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Store locked up. Dispose of contents/container to regulated waste treatment.

## 2.3 Other hazards

### Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. 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

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.

Cause after oral intake, 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. In liquid form no hazard H334.

### Information pertaining to particular risks to the environment

Should not be released into 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

**400 µg Carrier RNA**



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Substance name: *guanidinium thiocyanate*  
 CAS No.: 593-84-0

Substance rating: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1 B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3  
 Formula: C<sub>2</sub>H<sub>6</sub>N<sub>4</sub>S  
 Pseudonym (de): Guanidiniumrhodanid  
 REACH Reg. No.: 01-2120735072-65-0001  
 EC No.: 209-812-1  
 Concentration: 30 - <45 %  
 acc. CLP (GHS): H302, Acute Tox. 4 oral, H314, Skin Corr. 1 B, H412, Aquatic Chronic 3

Indice No.: 615-004-00-3

**9.6 mL NPW3 (Prefilled plate)**

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

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

Indice No.: 603-002-00-5

Substance name: *sodium perchlorate*  
 CAS No.: 7601-89-0

Substance rating: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral  
 Formula: NaClO<sub>4</sub>  
 Pseudonym (de): Perchlorat (fest)  
 REACH Reg. No.: 01-2119540521-50-xxxx  
 EC No.: 231-511-9  
 Concentration: 15 - <40 %  
 acc. CLP (GHS): H302, Acute Tox. 4 oral

Indice No.: 017-010-00-6

**9.6 mL NPW4 (Prefilled plate)**

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

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

Indice No.: 603-002-00-5

Substance name: *sodium perchlorate*  
 CAS No.: 7601-89-0

Substance rating: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral  
 Formula: NaClO<sub>4</sub>  
 Pseudonym (de): Perchlorat (fest)  
 REACH Reg. No.: 01-2119540521-50-xxxx  
 EC No.: 231-511-9  
 Concentration: 15 - <40 %  
 acc. CLP (GHS): H302, Acute Tox. 4 oral

Indice No.: 017-010-00-6

**9.2 mL NPB2 (Prefilled plate)**



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Substance name: *ethanol*  
 CAS No.: 64-17-5  
 (denatured with 1% 2-butanone)  
 Substance rating: H225, Flam. Liq. 2  
 Formula: C<sub>2</sub>H<sub>6</sub>O; C<sub>2</sub>H<sub>5</sub>OH  
 Pseudonym (de): Äthylalkohol, vergällter Spiritus  
 REACH Reg. No.: 01-2119457610-43-xxxx  
 EC No.: 200-578-6  
 Concentration: 35 - <55 %  
 acc. CLP (GHS): H226, Flam. Liq. 3

Indice No.: 603-002-00-5

Substance name: *sodium perchlorate*  
 CAS No.: 7601-89-0  
 Substance rating: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral  
 Formula: NaClO<sub>4</sub>  
 Pseudonym (de): Perchlorat (fest)  
 REACH Reg. No.: 01-2119540521-50-xxxx  
 EC No.: 231-511-9  
 Concentration: 15 - <40 %  
 acc. CLP (GHS): H302, Acute Tox. 4 oral

Indice No.: 017-010-00-6

**9.6 mL 80% Ethanol (Prefilled plate)**

Substance name: *ethanol*  
 CAS No.: 64-17-5  
 (not denatured)  
 Substance rating: H225, Flam. Liq. 2  
 Formula: C<sub>2</sub>H<sub>6</sub>O  
 Pseudonym (de): Äthylalkohol, Spiritus, abs.  
 REACH Reg. No.: 01-2119457610-43-xxxx  
 EC No.: 200-578-6  
 Concentration: 75 - <90 %  
 acc. CLP (GHS): H225, Flam. Liq. 2

Indice No.: 603-002-00-5

**1.6 mL NPE5 (Prefilled plate)**

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.

**0.32 mL B-Beads (Prefilled plate)**

Substance name: *magnetic particles, suspended in water*  
 CAS No.: -  
 Substance rating: No criteria for classification or naming of chemical not required.  
 Pseudonym (de): magnetic beads  
 Concentration: 1 - <15 %  
 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.



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## 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. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor. Take to a doctor, in a raised position if there are breathing difficulties.

#### 4.1.1 After SKIN Contact

Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.

#### 4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

#### 4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. If vomiting and if insensible place patient in recovery position and 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 with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences.

### 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. Rapid penetration and destruction of the skin. Especially in the heated form. Causes severe skin burns and eye damage.

### 4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTRESS ensure that the patient inhales oxygen. Inform patient respectively further measures and the possibility of long-term damages. ---

## 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

DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. 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. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

### 5.4 Additional information

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

## SECTION 6: Accidental release measures

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

Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). Wear eye protection, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.



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## 6.2 Environmental precautions

Should not be released into the environment.

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

see information in section 5.4,7,8 and 13

## 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): 3

Water hazard class (DE): 3

### 7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage. Use inbreakable container for transport of glass bottles.

### 7.3 Specific end use(s)

Product for analytical use.

## SECTION 8: Exposure controls /personal protection

### 8.1 Control parameters

#### 1.6 mL NPE5 (Prefilled plate)

Chemical: *chemicals/mixture until 1%*

CAS No.: -

#### 2 mL Liquid Proteinase K

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>

Chemical: *proteinase K, liquid*

CAS No.: 39450-01-6

SUVA(CH) MAK value: 0,00006 15min mg/m<sup>3</sup>

#### 0.32 mL B-Beads (Prefilled plate)

Chemical: *magnetic particles, suspended in water*

CAS No.: -

#### 9.6 mL NPW3 (Prefilled plate)

Chemical: *sodium perchlorate*

CAS No.: 7601-89-0

DNEL: [derm] 2.16 mg/kg bw/day; [inh] 0.28 mg/m<sup>3</sup>

DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE): -

E/e respirable

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



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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  
 TRGS 900 (DE): 200 ppm / 380 mg/m<sup>3</sup>  
E/e respirable  
 Short-term exposure factor: 4 (II), Y  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded  
 SUVA(CH) MAK value: 500 ppm / 960 mg/m<sup>3</sup>  
 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>

**9.6 mL NPW4 (Prefilled plate)**

Chemical: *sodium perchlorate* CAS No.: 7601-89-0  
 DNEL: [derm] 2.16 mg/kg bw/day; [inh] 0.28 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 TRGS 900 (DE): -  
E/e respirable  
 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  
 TRGS 900 (DE): 200 ppm / 380 mg/m<sup>3</sup>  
E/e respirable  
 Short-term exposure factor: 4 (II), Y  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded  
 SUVA(CH) MAK value: 500 ppm / 960 mg/m<sup>3</sup>  
 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>

**9.2 mL NPB2 (Prefilled plate)**

Chemical: *sodium perchlorate* CAS No.: 7601-89-0  
 DNEL: [derm] 2.16 mg/kg bw/day; [inh] 0.28 mg/m<sup>3</sup>  
DNEL = Derived No-Effect Level (for workers)  
 TRGS 900 (DE): -  
E/e respirable  
 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  
 TRGS 900 (DE): 200 ppm / 380 mg/m<sup>3</sup>  
E/e respirable  
 Short-term exposure factor: 4 (II), Y  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded  
 SUVA(CH) MAK value: 500 ppm / 960 mg/m<sup>3</sup>  
 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>

**30 mL NPL1**

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



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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: polyoxyethylene sorbitan monolaurate (Tween® 20) CAS No.: 9005-64-5

### 9.6 mL 80% Ethanol (Prefilled plate)

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

TRGS 900 (DE): 200 ppm / 380 mg/m<sup>3</sup>  
 E/e respirable

Short-term exposure factor: 4 (II), Y  
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m<sup>3</sup>

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: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>

### 500 µL Carrier RNA Buffer

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

### 400 µg Carrier RNA

Chemical: carrier RNA CAS No.: 26763-19-9

## 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 or face protection.

### 8.2.4 Skin protection

Recommended to avoid clothing damage, and 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.



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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### 1.6 mL NPE5 (Prefilled plate)

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 <sub>o/w</sub> ):	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
r) Particle size:	no data available

#### 2 mL Liquid Proteinase K

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:	0-100 %
n) Dispersion coefficient (K <sub>o/w</sub> ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.1 g/cm <sup>3</sup>
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

#### 0.32 mL B-Beads (Prefilled plate)

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:	no data available
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K <sub>o/w</sub> ):	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



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**9.6 mL NPW3 (Prefilled plate)**

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	alcoholic
d) Melting point:	no data available
e) Boiling point:	83,6 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	26 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	4.5-5.5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K <sub>o/w</sub> ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.06 g/cm <sup>3</sup>
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

**9.6 mL NPW4 (Prefilled plate)**

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	alcoholic
d) Melting point:	no data available
e) Boiling point:	83,6 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	26 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	4.5-5.5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K <sub>o/w</sub> ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.06 g/cm <sup>3</sup>
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

**9.2 mL NPB2 (Prefilled plate)**

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	alcoholic
d) Melting point:	no data available
e) Boiling point:	83,6 °C
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	24 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	5-6
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K <sub>o/w</sub> ):	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

**30 mL NPL1**

a) State of aggregation:	liquid
b) Colour:	slightly yellow
c) Odor:	odorless
d) Melting point:	no data available



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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:	4.7-5.2
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K <sub>o/w</sub> ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.15 g/cm <sup>3</sup>
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

### 9.6 mL 80% Ethanol (Prefilled plate)

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	alcoholic
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:	20 °C
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
n) Dispersion coefficient (K <sub>o/w</sub> ):	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

### 500 µL Carrier RNA Buffer

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	fusty, mouldy
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:	5.5-6
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient (K <sub>o/w</sub> ):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.08 g/cm <sup>3</sup>
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

### 400 µg Carrier RNA

a) State of aggregation:	solid (lyophilized)
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



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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:	ca. 20 mg/mL
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 ( $\rho_{air=1}$ ):	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.

□□

Substances are highly volatile and form flammable gas-air mixtures. Substances are highly corrosive.

## 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 react violently with organic material. Note: Can form very reactive substances with oxidizing agents. Possible: &H:EUH031& 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.

#### 1.6 mL NPE5 (Prefilled plate)

Chemical: *chemicals/mixture until 1%*

CAS No.: -

TSCA Inventory: all listed, <1%

Korea Exist.Chem.Inventory: listed

#### 2 mL Liquid Proteinase K

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



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TRGS 905 (DE): R F C

Chemical: *proteinase K, liquid* CAS No.: 39450-01-6  
 TSCA Inventory: listed (CAS 102925-54-2)  
 Japan CSCL/PRTR: not listed  
 Japan ISHL: not listed  
 Korea Exist.Chem.Inventory: not 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.

**0.32 mL B-Beads (Prefilled plate)**

Chemical: *magnetic particles, suspended in water* CAS No.: -  
 TSCA Inventory: listed (CAS 1309-38-2)

**9.6 mL NPW3 (Prefilled plate)**

Chemical: *sodium perchlorate* CAS No.: 7601-89-0  
 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-31569  
 LD50 orl rat : 2100 mg/kg

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 Proposition 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  
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes  
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed  
 Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)  
 South Korea TCCA: not listed  
 Korea Exist.Chem.Inventory: KE-13217  
 LD50 orl rat : 6200 mg/kg  
 LC<sub>50</sub> ihl gpg : 21,900 mg/L  
 LC<sub>50</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

TRGS 905 (DE): K5, M5, R F C

**9.6 mL NPW4 (Prefilled plate)**

Chemical: *sodium perchlorate* CAS No.: 7601-89-0  
 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-31569  
 LD50 orl rat : 2100 mg/kg

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 Proposition 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



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### 9.6 mL 80% Ethanol (Prefilled plate)

Chemical: *ethanol* CAS No.: 64-17-5  
 TSCA Inventory: listed California Proposition 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  
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes  
 Japan CSCL/PRTR: not listed, Japan PDSCl: not listed  
 Japan ISHL: listed ≥0,1%/≥0,1%, Article 57-2 (SDS required)  
 South Korea TCCA: not listed  
 Korea Exist.Chem.Inventory: KE-13217  
 LD50 orl rat : 6200 mg/kg  
 LC<sub>50</sub> ihl gpg : 21,900 mg/L  
 LC<sub>50</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  
 TRGS 905 (DE): K5, M5, R F C

### 500 µL Carrier RNA Buffer

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
 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: not listed  
 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.

### 400 µg Carrier RNA

Chemical: *carrier RNA* CAS No.: 26763-19-9  
 Japan CSCL/PRTR: not listed, Japan PDSCl: not listed  
 Japan ISHL: not listed  
 Korea Exist.Chem.Inventory: KE-30341  
 LD50 orl rat : 11250 mg/kg  
 LD50 orl mus : 13791 mg/kg  
 LD50 scu rat : 1493 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 substances.

#### 1.6 mL NPE5 (Prefilled plate)

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

#### 2 mL Liquid Proteinase K



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Substance name: *glycerole* CAS-Nr.: 56-81-5  
 PNEC (fresh water) : 0.885 mg/L  
 PNEC = Predicted No Effected 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

Substance name: *proteinase K, liquid* CAS-Nr.: 39450-01-6  
 Water hazard class (DE): 1  
 Storage class (VCI): 13

**0.32 mL B-Beads (Prefilled plate)**

Substance name: *magnetic particles, suspended in water* CAS-Nr.: -  
 Storage class (VCI): 12

**9.6 mL NPW3 (Prefilled plate)**

Substance name: *sodium perchlorate* CAS-Nr.: 7601-89-0  
 Water hazard class (DE): 1 WGK No.: 0382  
 Storage class (VCI): 12

Substance name: *ethanol* CAS-Nr.: 64-17-5

PNEC (fresh water) : 0.96 mg/L  
 PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected  
 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  
 Water hazard class (DE): 1 WGK No.: 0096  
 Storage class (VCI): 3

**9.6 mL NPW4 (Prefilled plate)**

Substance name: *sodium perchlorate* CAS-Nr.: 7601-89-0  
 Water hazard class (DE): 1 WGK No.: 0382  
 Storage class (VCI): 12

Substance name: *ethanol* CAS-Nr.: 64-17-5

PNEC (fresh water) : 0.96 mg/L  
 PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected  
 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  
 Water hazard class (DE): 1 WGK No.: 0096  
 Storage class (VCI): 3

**9.2 mL NPB2 (Prefilled plate)**

Substance name: *sodium perchlorate* CAS-Nr.: 7601-89-0  
 Water hazard class (DE): 1 WGK No.: 0382  
 Storage class (VCI): 12

Substance name: *ethanol* CAS-Nr.: 64-17-5

PNEC (fresh water) : 0.96 mg/L  
 PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected  
 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



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EC10 *pseudomonas putida*/16h : [EC5] 6500 mg/L  
 Water hazard class (DE): 1 WGK No.: 0096  
 Storage class (VCI): 3

**30 mL NPL1**

Substance name: *guanidine hydrochloride* CAS-Nr.: 50-01-1  
 PNEC (fresh water): -  
 PNEC = Predicted No Effect 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  
 EC50 *daphnia*/48h : 70.2 mg/L  
 EC10 *pseudomonas putida*/16h : [72h] 11.8-33.5 mg/L  
 Water hazard class (DE): 1 WGK No.: 0788  
 Storage class (VCI): 12

Substance name: *polyoxyethylene sorbitan monolaurate (Tween® 20)* CAS-Nr.: 9005-64-5  
 Water hazard class (DE): 1  
 Storage class (VCI): 10-11

**9.6 mL 80% Ethanol (Prefilled plate)**

Substance name: *ethanol* CAS-Nr.: 64-17-5  
 PNEC (fresh water): 0.96 mg/L  
 PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected  
 LC50 *daphnia magna*/48h : >100 mg/L  
 LC50 *pimephales promelas*/96h : 13400 - 15100 mg/L  
 LC50 *leuciscus idus*/96h : [48h] 8140 mg/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 putida*/16h : [EC5] 6500 mg/L  
 Water hazard class (DE): 1 WGK No.: 0096  
 Storage class (VCI): 3

**500 µL Carrier RNA Buffer**

Substance name: *guanidinium thiocyanate* CAS-Nr.: 593-84-0  
 Harmful to aquatic life with long lasting effects. Do not release into the environment.  
 Environmentally hazardous substances/mixtures do not have to be labeled with P-phrases up to 125 mL (EU 1272/2008 Annex I Paragraph 1.5.2).  
 PNEC (fresh water): 42.4 µg/L  
 PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected  
 LC50 fish/96h : [4d] 89.1 mg/L  
 EC50 *daphnia*/48h : 42.4 mg/L  
 IC50 *scenedesmus quadricauda*/72h : 130 mg/L  
 EC10 *pseudomonas putida*/16h : [10d] 200 mg/L  
 Water hazard class (DE): 3  
 Storage class (VCI): 12

**400 µg Carrier RNA**

Substance name: *carrier RNA* CAS-Nr.: 26763-19-9

**12.2 Persistence and degradability**

**12.3 Bioaccumulative potential**

**2 mL Liquid Proteinase K**

Substance name: *glycerole* CAS-Nr.: 56-81-5  
 Dispersion coefficient (K<sub>o/w</sub>): -1,76  
 Substance name: *ethanol* CAS-Nr.: 64-17-5  
 Dispersion coefficient (K<sub>o/w</sub>): -0,31  
 Substance name: *ethanol* CAS-Nr.: 64-17-5  
 Dispersion coefficient (K<sub>o/w</sub>): -0,31  
 Substance name: *ethanol* CAS-Nr.: 64-17-5  
 Dispersion coefficient (K<sub>o/w</sub>): -0,31



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<b>9.6 mL 80% Ethanol (Prefilled plate)</b>		
Substance name:	<i>ethanol</i>	CAS-Nr.: 64-17-5
Dispersion coefficient (K <sub>o/w</sub> ):	-0,31	
<b>500 µL Carrier RNA Buffer</b>		
Substance name:	<i>guanidinium thiocyanate</i>	CAS-Nr.: 593-84-0
Dispersion coefficient (K <sub>o/w</sub> ):	-1,11 pH 5.1	

**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**

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.

**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 (waste code number 16 05 06).

**13.1 Waste treatment methods**

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.

## SECTION 14: Transport information

- 14.1 UN number:** 1993
- 14.2 UN proper shipping name:** Flammable liquid, n.o.s. (ethanol, ethanol mixture)
- 14.3 Class:** 3
- 14.4 Packing group:** II

*Road transport ADR*

Classification code:	F1	Tunnel restriction code:	D/E
Limited Quantity:	1 L		
Excepted Quantity:	E 2		
Special instructions:	274, 601, 640D		

*Air transport IATA DGR*

Limited Quantity:	PAX: 353	max. quantity PAX:	5 L
	CAO: 364	max. quantity CAO:	60 L
Excepted Quantity:	E 2		

*Maritime transport IMDG*

EmS:	F-E, S-E	Staukategorie:	B
Special instructions:	274		

**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**

not necessary

**14.7 Carriage in bulk by sea in accordance with IMO instruments**

Not applicable.



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## 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  
 TRGS 401, Skin contact hazard - identification, assessment, action, Jun 2008, status: Feb 2011  
 BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012  
 TRGS 500, Protective measures, Mai 2008  
 TRGS 510, Storage of hazardous substances in portable containers from March 2013, status: Oct 2015  
 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 2.30.7.1 and 2.2.2.2 following changes were applied: - 28 product component data corrected - 5 composition data corrected

### 16.2 List of H and P phrases

#### 16.2.1 List of relevant H phrases

H	Between versions 2.30.7.1 and 2.2.2.2 following changes were applied: - 28 product component data corrected - 5 composition data corrected
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
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

P260sh	Do not breathe dust/vapours.
P264	Wash hands thoroughly after handling.
P280sh	Wear protective gloves/eye protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P405	Store locked up.
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*  
*2017-08 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  
 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)



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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.

