

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740971.10

NucleoSpin miRNA (10)

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Printing date: 15.11.2021

Date of issue: 12.04.2021

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

1.1 Product identifier

REF 740971.10
Product name NucleoSpin miRNA (10)

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 10 mL MDB
1 x 5 mL ML
1 x 5 mL MP
1 x 10 mL MW1
1 x 6 mL MW2
1 x 13 mL MX
1 x 7 mL Reaction Buffer for rDNase
1 x 13 mL RNase-free H₂O
1 x 200 U, Size C, rDNase

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
Valenciennner Str. 11, 52355 Düren, GERMANY
Tel.: +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

You find our current versions of SDS (22 languages) in Internet:

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

SECTION 2: Hazard identification

2.0 Classification of the complete product



GHS02



GHS07



GHS08



GHS09

Signal word

DANGER

Hazard identification

Hazard classes/categories

H225 Flam. Liq. 2
H226 Flam. Liq. 3
H302 Acute Tox. 4 oral
H315 Skin Irrit. 2
H319 Eye Irrit. 2
H334 Resp. Sens. 1
H335 STOT SE 3
H351 Carc. 2
H411 Aquatic Chronic 2
H412 Aquatic Chronic 3

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2.1 Classification of the substance or mixture

10 mL MDB



GHS02

Signal word

WARNING

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

5 mL ML



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H302

Acute Tox. 4 oral

H412

Aquatic Chronic 3

5 mL MP



GHS07



GHS09

Signal word

WARNING

Hazard identification

Hazard classes/categories

H315

Skin Irrit. 2

H319

Eye Irrit. 2

H411

Aquatic Chronic 2

10 mL MW1



GHS02

Signal word

WARNING

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

6 mL MW2

Signal word

Do not need labelling as hazardous

-

No hazard class

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13 mL MX



GHS02

GHS07

GHS08

Signal word

DANGER

Hazard identification

Hazard classes/categories

H225

Flam. Liq. 2

H319

Eye Irrit. 2

H335

STOT SE 3

H351

Carc. 2

7 mL Reaction Buffer for rDNase

Signal word

Do not need labelling as hazardous

-

No hazard class

13 mL RNase-free H₂O

Signal word

Do not need labelling as hazardous

-

No hazard class

200 U, Size C, rDNase



GHS08

Signal word

DANGER

Hazard identification

Hazard classes/categories

H334

Resp. Sens. 1

2.2

Label elements

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 sensiblizing substances.

10 mL MDB



GHS02

Signal word: WARNING

5 mL ML



GHS07

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Signal word: WARNING

H412

Harmful to aquatic life with long lasting effects.

5 mL MP



GHS07



GHS09

Signal word: WARNING

10 mL MW1



GHS02

Signal word: WARNING

6 mL MW2

Do not need labelling as hazardous

Signal word: -

13 mL MX



GHS02



GHS07



GHS08

Signal word: DANGER

H351

Suspected of causing cancer.

P201, P280sh

Obtain special instructions before use. Wear protective gloves/eye protection.

7 mL Reaction Buffer for rDNase

Do not need labelling as hazardous

Signal word: -

13 mL RNase-free H₂O

Do not need labelling as hazardous

Signal word: -

200 U, Size C, rDNase



GHS08

Signal word: DANGER

H334

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May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261sh, P342+311

Avoid breathing dust/vapours. 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. The property H314 "Causes severe skin burns and eye damage." of some salts is not applicable, because the mixture is buffered to pH >3-4 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.). For guanidine thiocyanate CAS 593-84-0: The properties H314, H332 "Causes severe skin burns and eye damage. Harmful if inhaled." are not relevant, because the mixture solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.). ---

Information pertaining to particular risks to human and possible symptoms

Cause after oral intake, 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. Suspected of causing cancer. -

Information pertaining to particular risks to the environment

Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

10 mL MDB

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3

Formula: $C_2H_6N_4S$

Pseudonym: guanidine rhodanide

TSCA Inventory: listed

REACH Reg. No.: 01-2120735072-65-0001

EC No.: 209-812-1

Indice No.: 615-004-00-3

RTECS: XL1225000

MFCD: 00013027

KE No.: not listed

Concentration: 5 - <10 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *ethanol* (diluted < 20 %)

CAS No.: 64-17-5d

(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)

Classification: H225, Flam. Liq. 2

Formula: C_2H_6O ; C_2H_5OH

Pseudonym: ethyl alcohol, methylated spirit

TSCA Inventory: listed

REACH Reg. No.: 01-2119457610-43-xxxx

EC No.: 200-578-6

Indice No.: 603-002-00-5

RTECS: KQ6300000

MFCD: 00003568

KE No.: KE-13217

Concentration: 5 - <20 %

acc. CLP (GHS): H226, Flam. Liq. 3

5 mL ML

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Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3
 Formula: $C_2H_6N_4S$
 Pseudonym: guanidine rhodanide
 TSCA Inventory: listed
 REACH Reg. No.: 01-2120735072-65-0001
 EC No.: 209-812-1
 RTECS: XL1225000
 KE No.: not listed
 Concentration: 45 - <60 %
 acc. CLP (GHS): H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3

Indice No.: 615-004-00-3
 MFCD: 00013027

Chemical: *2-mercaptoethanol* CAS No.: 60-24-2
 Classification: H301, Acute Tox. 3 oral, H310, Acute Tox. 2 derm., H315, Skin Irrit. 2, H317, Skin Sens. 1, H318, Eye Dam. 1, H330, Acute Tox. 2 inh., H410, Aquatic Chronic 1
 Formula: C_2H_6OS
 Pseudonym: thioglycol, thioethylene glycol
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119517582-41-xxxx
 EC No.: 200-464-6
 RTECS: KL5600000
 KE No.: KE-23095
 Concentration: 0.1 - <1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

5 mL MP

Chemical: *zinc chloride* CAS No.: 7646-85-7
 Classification: H302, Acute Tox. 4 oral, H314, Skin Corr. 1B, H400, Aquatic Acute 1, H410, Aquatic Chronic 1
 Formula: $ZnCl_2$
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119472431-44-xxxx
 EC No.: 231-592-0
 RTECS: ZH1400000
 KE No.: KE-35535, >25% Toxic 97-1-91
 Concentration: 5 - <10 %
 The classification refers to weight percent of the metal (according to CLP Regulation 2008/1272/EC Annex VI, 1.1.3.2 Note 1)
 acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2, H411, Aquatic Chronic 2

Indice No.: 030-003-00-2
 MFCD: 00011295

Correlation factor: x 0.48 (= %Zn)

10 mL MW1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3
 Formula: $C_2H_6N_4S$
 Pseudonym: guanidine rhodanide
 TSCA Inventory: listed
 REACH Reg. No.: 01-2120735072-65-0001
 EC No.: 209-812-1
 RTECS: XL1225000
 KE No.: not listed
 Concentration: 5 - <10 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

Indice No.: 615-004-00-3
 MFCD: 00013027

Chemical: *ethanol* CAS No.: 64-17-5
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
 Classification: H225, Flam. Liq. 2
 Formula: C_2H_6O ; C_2H_5OH
 Pseudonym: ethyl alcohol, methylated spirit
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119457610-43-xxxx
 EC No.: 200-578-6
 RTECS: KQ6300000
 KE No.: KE-13217
 Concentration: 35 - <55 %
 acc. CLP (GHS): H226, Flam. Liq. 3

Indice No.: 603-002-00-5
 MFCD: 00003568

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6 mL MW2

Chemical: chemicals/mixture < 1%

CAS No.: -

Classification: No criteria for classification or naming of chemical not required.

TSCA Inventory: all listed, <1%

KE No.: listed

Concentration: 0.1 - <1 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

13 mL MX

Chemical: 1,4-dioxane

CAS No.: 123-91-1

Classification: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H335, STOT SE 3, H351, Carc. 2

Formula: C₄H₈O₂

Pseudonym: diethylene dioxide; diethylene ether; p-dioxane

TSCA Inventory: listed

REACH Reg. No.: 01-2119462837-26-0001

EC No.: 204-661-8

Indice No.: 603-024-00-5

RTECS: JG8225000

MFCD: 00006571

KE No.: KE-10463

Concentration: 90 - <100 %

acc. CLP (GHS): H225, Flam. Liq. 2, H319, Eye Irrit. 2, H335, STOT SE 3, H351, Carc. 2

7 mL Reaction Buffer for rDNase

Chemical: chemicals/mixture < 2%

CAS No.: -

Classification: No criteria for classification or naming of chemical not required.

TSCA Inventory: all listed, <2%

KE No.: listed

Concentration: 1 - <2 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

13 mL RNase-free H₂O

Chemical: water

CAS No.: 7732-18-5

Classification: No criteria for classification or naming of chemical not required.

Formula: H₂O

TSCA Inventory: listed

REACH Reg. No.: exempt, Annex IV

EC No.: 231-791-2

RTECS: ZC0110000

KE No.: KE-35400

Concentration: 90 - <100 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

200 U, Size C, rDNase

Chemical: rDNase

CAS No.: 9003-98-9

Classification: H334, Resp. Sens. 1

Formula: Enzyme Comm. No. 3.1.21.1, origin: cloned

Pseudonym: Nuclease, deoxyribo-

TSCA Inventory: listed

EC No.: 232-667-0

RTECS: RF0750000

KE No.: KE-09612

Concentration: 90 - <100 %

acc. CLP (GHS): H334, Resp. Sens. 1

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 16.1

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.

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- 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**
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.
CMR Effects: Suspected of causing cancer. ---
- 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: Firefighting measures

- 5.1 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.
- 5.2 Special hazards arising from the substance or mixture**
WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. 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.
- 5.4 Additional information**

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). 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**
not necessary, contains only small amounts of these substances
- 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**

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**
Handling in accordance with the test instruction, that comes with the product. Use only in well-ventilated working areas.
- 7.2 Conditions for safe storage, including any incompatibilities**
The original product package of MACHEREY-NAGEL allows a safe storage.
Storage class (VCI): 3
Water hazard class (DE): 3

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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

10 mL MDB

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

DNEL: [inh] 1092 µg/m³

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

Chemical: *ethanol*

CAS No.: 64-17-5d

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

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/m³

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/m³

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[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/m³

5 mL ML

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

DNEL: [inh] 1092 µg/m³

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

Chemical: *2-mercaptoethanol*

CAS No.: 60-24-2

DNEL: [derm] 0.6 mg/kg

DNEL = Derived No-Effect Level (for workers)

PNEC(fresh water): 0.0004 mg/L

PNEC = Predicted No Effect Concentration

5 mL MP

Chemical: *zinc chloride*

CAS No.: 7646-85-7

DNEL: 1.3Zn, inh mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC(fresh water): 0.0206 mg/L

PNEC = Predicted No Effect Concentration

SUVA(CH) MAK value: 1 a mg/m³

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

10 mL MW1

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

DNEL: [inh] 1092 µg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC(fresh water): 42.4 µg/L

PNEC = Predicted No Effect Concentration

NIOSH: not listed

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[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/m³

DNEL = Derived No-Effect Level (for workers)

PNEC(fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
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/m³

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[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/m³

6 mL MW2

Chemical: *chemicals/mixture < 1%*

CAS No.: -

13 mL MX

Chemical: *1,4-dioxane*

CAS No.: 123-91-1

DNEL: 73 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC(fresh water): 10 mg/L

PNEC = Predicted No Effect Concentration

EU value: 20 ppm / 73 mg/m³

TRGS 900 (DE): 20 ppm / 73 mg/m³

E/e respirable

Short-term exposure factor: 2 (I), H, Y

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 20 ppm / 72 mg/m³

TRGS 903 (DE): 2-Hydroxyethoxyessigsäure U/b Kreatinin 400 mg/g
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: Occupational Carcinogen List Yes; TWA_{30min} 1 ppm / 3.6 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [skin] TWA 100 ppm / 360 mg/m³

7 mL Reaction Buffer for rDNase

Chemical: *chemicals/mixture < 2%*

CAS No.: -

13 mL RNase-free H₂O

Chemical: *water*

CAS No.: 7732-18-5

200 U, Size C, rDNase

Chemical: *rDNase*

CAS No.: 9003-98-9

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 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 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

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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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

10 mL MDB

Appearance: liquid

Colour: colourless

Odor: alcoholic

pH:

6.7-7.2

Flash point:

55 °C

Specific gravity:

1.01 g/cm³

5 mL ML

Appearance: liquid

Colour: colourless

Odor: sulfuric

pH:

6.5-7.5

Specific gravity:

1.05 g/cm³

5 mL MP

Appearance: liquid

Colour: colourless

Odor: acetic

pH:

4-4.5

Solubility in water:

0-100 %

10 mL MW1

Appearance: liquid

Colour: colourless

Odor: alcoholic

pH:

6.5 - 7.5

Flash point:

23 °C

6 mL MW2

Appearance: liquid

Colour: colourless

Odor: odorless

pH:

7-8

Specific gravity:

1.00 g/cm³

13 mL MX

Appearance: liquid

Colour: colourless

Odor: odorless

Odor limit:

10-620 mg/m³

pH:

6-8

Melting point:

12 °C

Boiling point:

101.5 °C

Flash point:

11 °C

Evaporation rate_(ether=1) :

7,3

Explosion limits:

1.9-22.5 Vol%

Vapour pressure (20°C):

41 hPa

Vapour density_(air=1) :

3,04

Specific gravity:

1.01-1.03 g/cm³

Solubility in water:

< 2 %

Flashing temperature:

375 °C

Volatiles by volume:

149 g/m³

7 mL Reaction Buffer for rDNase

Appearance: liquid

Colour: colourless

Odor: odorless

pH:

6.5-7.5

Specific gravity:

1.01 g/cm³

13 mL RNase-free H₂O

Appearance: liquid

Colour: colourless

Odor: odorless

pH:

6-8

Specific gravity:

1.0 g/cm³

200 U, Size C, rDNase

Appearance: solid (lyoph.)

Colour: white

Odor: odorless

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9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group

Substances are very volatile and form flammable vapour-air mixtures. ---

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. Possible: Contact with acids liberates toxic gas. No further data available.

10.4 Conditions to avoid

Not necessary. ---

10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

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 substances. Quantitative data on the toxicity of this product are not available.

10 mL MDB

Chemical:	<i>guanidinium thiocyanate</i>	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 _{drm rbt} :	>2000 mg/m ³		
LC50 _{ihl rat} :	[4h] 5.319 mg/L		
LD50 _{ipr mus} :	300 mg/kg		

Chemical:	<i>ethanol</i>	CAS No.:	64-17-5d
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 _{Lowihl gpg} :	21.9 g/m ³		
LC _{Loworl hmn} :	1400 mg/kg		
LC50 _{ihl mouse} :	[4h] 39 g/m ³		
LC50 _{ihl rat} :	[10h] 20 g/m ³		
LD50 _{drm rbt} :	20 000 mg/kg		
LD50 _{oral mouse} :	3450 mg/kg		

TRGS 905 (DE): K5, M5, R_F C

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5 mL ML

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_{drm rbt}: >2000 mg/m³
 LC50_{ihl rat}: [4h] 5.319 mg/L
 LD50_{ipr mus}: 300 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

Chemical: *2-mercaptoethanol* CAS No.: 60-24-2
 TSCA Inventory: listed
 Australia NICNAS: yes Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: Deleterious substance
 Korea Exist.Chem.Inventory: KE-23095
 LD50_{orl rat}: 98-162 mg/kg
 LC50_{ihl rat}: 625_{4h} mg/m³
 LD50_{drm rbt}: 112-224 mg/kg

5 mL MP

Chemical: *zinc chloride* CAS No.: 7646-85-7
 TSCA Inventory: listed California Proposition 65 List: not listed
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PRTR: ≥1,0%Zn class I, Japan PDSCL: Deleterious Substance
 Japan ISHL: listed ≥1,0%/≥0,1%, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-35535, >25% Toxic 97-1-91
 LD50_{orl rat}: 350 mg/kg
 LD50_{orl mus}: 329 mg/kg

10 mL MW1

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_{drm rbt}: >2000 mg/m³
 LC50_{ihl rat}: [4h] 5.319 mg/L
 LD50_{ipr mus}: 300 mg/kg

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_{Lowihl gpg}: 21.9 g/m³
 LC_{Loworl hmn}: 1400 mg/kg

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LC50_{ihl} mouse : [4h] 39 g/m³
 LC50_{ihl} rat : [10h] 20 g/m³
 LD50_{drm} rbt : 20 000 mg/kg
 LD50_{oral} mouse : 3450 mg/kg

TRGS 905 (DE): K5, M5, R_F C

6 mL MW2

Chemical: chemicals/mixture < 1%
 TSCA Inventory: all listed, <1%
 Korea Exist.Chem.Inventory: listed

CAS No.: -

13 mL MX

Chemical: 1,4-dioxane CAS No.: 123-91-1
 TSCA Inventory: listed California Proposition 65 List: listed cancer
 Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, liver, kidneys; [in animals: lung, liver & nasal cavity tumors]
 Symptoms: irritation eyes, skin, nose, throat; drowsiness, headache; nausea, vomiting; liver damage; kidney failure; [potential occupational carcinogen]
 Australia NICNAS: Yes (PEC/7) Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: PAC Yes, PRTR - Class I Designated Chemical Substance Yes, Japan PDSCL: PRTR: ≥1,0% class I
 Japan ISHL: listed ≥1,0%/≥1,0%, Article 57-1+2 (Labelling&SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-10463
 LD50_{orl} rat : 5150 mg/kg
 LC50_{ihl} rat : [LC0, 60min] 155 mg/L
 Acute Effects: Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities.
 Carcinogenic Effects: Suspected of causing cancer.
 EU carcinogen: Carcinogenicity cat. 2
 TRGS 905 (DE): K4, R_F C

7 mL Reaction Buffer for rDNase

Chemical: chemicals/mixture < 2%
 TSCA Inventory: all listed, <2%
 Korea Exist.Chem.Inventory: listed

CAS No.: -

13 mL RNase-free H₂O

Chemical: water
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-35400

CAS No.: 7732-18-5

200 U, Size C, rDNase

Chemical: rDNase
 TSCA Inventory: listed
 Japan CSCL/PRTR: not listed
 Japan ISHL: not listed
 Korea Exist.Chem.Inventory: KE-09612
 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.

CAS No.: 9003-98-9

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

10 mL MDB

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Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
PNEC(fresh water): 42.4 µg/L
PNEC = Predicted No Effected Concentration
LC50_{fish/96h}: [4d] 89.1 mg/L
EC50_{daphnia/48h}: 42.4 mg/L
IC50_{scenedesmus quadricauda/72h}: 130 mg/L
EC10_{pseudomonas putida/16h}: [10d] 200 mg/L
Water hazard class (DE): 3
Dispersion coefficient_(octanol-water): [pH 5.1] -1.11
Storage class (VCI): 12

Chemical: *ethanol* CAS No.: 64-17-5d
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 putida/16h}: [EC5] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Dispersion coefficient_(octanol-water): -0.31
Storage class (VCI): 3

5 mL ML

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
PNEC(fresh water): 42.4 µg/L
PNEC = Predicted No Effected Concentration
LC50_{fish/96h}: [4d] 89.1 mg/L
EC50_{daphnia/48h}: 42.4 mg/L
IC50_{scenedesmus quadricauda/72h}: 130 mg/L
EC10_{pseudomonas putida/16h}: [10d] 200 mg/L
Water hazard class (DE): 3
Dispersion coefficient_(octanol-water): [pH 5.1] -1.11
Storage class (VCI): 12

Chemical: *2-mercaptoethanol* CAS No.: 60-24-2
PNEC(fresh water): 0.0004 mg/L
PNEC = Predicted No Effected Concentration
LC50_{leuciscus idus/96h}: 46-100 mg/L
EC50_{daphnia/48h}: 1.52 mg/L
Water hazard class (DE): 3
Storage class (VCI): 3

5 mL MP

Chemical: *zinc chloride* CAS No.: 7646-85-7
Toxic to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
Environmental hazards must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
PNEC(fresh water): 0.0206 mg/L
PNEC = Predicted No Effected Concentration
LC50_{fish/96h}: 38 mg/L
EC50_{daphnia/48h}: 1.24 mg/L
EC50_{pseudokirchneriella subcapitata/72h}: 0.05 mg/L
Water hazard class (DE): 3 WGK No.: 0207
Storage class (VCI): 11

10 mL MW1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
PNEC(fresh water): 42.4 µg/L
PNEC = Predicted No Effected Concentration
LC50_{fish/96h}: [4d] 89.1 mg/L
EC50_{daphnia/48h}: 42.4 mg/L
IC50_{scenedesmus quadricauda/72h}: 130 mg/L
EC10_{pseudomonas putida/16h}: [10d] 200 mg/L
Water hazard class (DE): 3

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Dispersion coefficient_(octanol-water) : [pH 5.1] -1.11
Storage class (VCI): 12

Chemical: *ethanol*

CAS No.: 64-17-5

PNEC_(fresh water) : 0.96 mg/L

PNEC = Predicted No Effect Concentration

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

Dispersion coefficient_(octanol-water) : -0.31

Storage class (VCI): 3

6 mL MW2

Chemical: *chemicals/mixture < 1%*

CAS No.: -

Water hazard class (DE): 1

Storage class (VCI): 12-13

13 mL MX

Chemical: *1,4-dioxane*

CAS No.: 123-91-1

PNEC_(fresh water) : 10 mg/L

PNEC = Predicted No Effect Concentration

Bio Toxicity: 1/2.1/2.6

LC50_{fish/96h} : [21d] 100 mg/L

EC50_{daphnia/48h} : 1 g/L

IC50_{scenedesmus quadricauda/72h} : [72h] 1 g/L

Water hazard class (DE): 2 WGK No.: 0086

Dispersion coefficient_(octanol-water) : -0.42

Storage class (VCI): 3

7 mL Reaction Buffer for rDNase

Chemical: *chemicals/mixture < 2%*

CAS No.: -

Water hazard class (DE): 1

Storage class (VCI): 12-13

13 mL RNase-free H₂O

Chemical: *water*

CAS No.: 7732-18-5

200 U, Size C, rDNase

Chemical: *rDNase*

CAS No.: 9003-98-9

Water hazard class (DE): 1 WGK No.: n.n.

Storage class (VCI): 13

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

no data available

12.6 Other adverse effects

no additional data available

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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.

SECTION 14: Transport information

UN 1993 class 3 II, **Excepted Quantities** (≤ 30 mL/ $\sum \leq 500$ mL) = ADR/ IATA E2

or

14.1 UN number: 1993 **14.2 UN proper shipping name:** Flammable liquid, n.o.s. (1,4-dioxane, ethanol mixture)

14.3 Class: 3 **14.4 Packing group:** II

Road transport

Classification code: F1

Limited Quantity: 1 L

Excepted Quantity: E 2

Tunnel restriction code: E

Special instructions: 640C

Air transport

PAX: 353

max. weight PAX: 5 L

CAO: 364

max. weight CAO: 60 L

Maritime transport

EmS: F-E, S-E

Storage category: B

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 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013

German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC

TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011

MN Leaflet/User manual, also see www.mn-net.com

Look for your country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

16.1.2 List of relevant P phrases

P201	Obtain special instructions before use.
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P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P261sh	Avoid breathing dust/vapours.
P264W	Wash with water thoroughly after handling.
P273	Avoid release to the environment.
P280sh	Wear protective gloves/eye protection.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P330	Rinse mouth.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

16.2 Training advice

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.

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 Further information

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

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16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS

Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress

Regulation 849/2021/EU, 4th adaptation of CLP regulation to technical and scientific progress

TRGS 900, German engineering rules governing limits in air at work, updated 03/2019

SUVA .CH, Limits in air at work 2009, revised on 01.2009

TRGS 907, German engineering rules governing listing of substances and causes of sensitizations, updated November 2011

KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU

2017-08 Adaption of new ethanol denaturation 2016/1867/EU

2017-11 Adaption of ECHA Registration dossier