Safety Data Sheet

according to Regulations REACh 1907/2006/EC

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

1.1 Product identifier

REF 740412.10
Product name NucleoBond Xtra Midi Plus (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 0.6-100 mg RNase A (lyo)	UFI: WWJV-U3PV-U207-MFGF
1 x 100 mL LYS	UFI: W24W-23R9-3206-XR1C
1 x 100 mL RES	
1 x 100 mL NEU	
1 x 200 mL EQU	UFI: R7DV-F34P-M20J-YX16
1 x 100 mL WASH	UFI: AADV-X3U2-X202-M8M8
1 x 60 mL ELU	UFI: HEDV-F3HG-720J-9M6A
1 x 13 mL TRIS	

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses
Product for analytical use.
Exposure Scenario Classification according REACh, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0
The exposure scenario is integrated into sections 1-16.
Uses advised against
not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:
MACHEREY-NAGEL GmbH & Co. KG
Valencienner Str. 11, 52355 Düren, Germany
Phone: +49 2421 969 0 E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.
DE: Gemeinsames Giftinformationszentrum (GGIZ)
99089 Erfurt tel. +49 361 730 730, **<https://www.ggiz-erfurt.de>**

You find our current versions of SDS in Internet: **<http://www.mn-net.com/SDS>**

SECTION 2: Hazard identification

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

GHS02 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1

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

100 mL LYS

GHS07

Signal word	WARNING

Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2

200 mL EQU

GHS02

Signal word	WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3

100 mL WASH

GHS02

Signal word	WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3

60 mL ELU

GHS02 GHS07

Signal word	WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H319	Eye Irrit. 2

0.6-100 mg RNase A (lyo)

GHS08

Signal word	DANGER

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

13 mL TRIS

Do not need labelling as hazardous

Signal word -

No hazard class

100 mL RES

Do not need labelling as hazardous

Signal word -

No hazard class

100 mL NEU

Do not need labelling as hazardous

Signal word -

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 identificator(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.

100 mL LYS

GHS07

Signal word: WARNING

200 mL EQU

GHS02

Signal word: WARNING
H226
Flammable liquid and vapour.
P210, P233, P241, P242, P243, P280, P303+361+353, P403+235, P501
Keep away from heat/sparks/open flames/hot surfaces. No smoking.Keep container tightly closed.Use explosion-proof [electrical/ventilating/lighting] equipment.Use non-sparking tools.Take precautionary measures against static discharge.Wear protective gloves/protective clothing/eye protection/face protection.IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].Store in a well-ventilated place. Keep cool.Dispose of contents/container to regulated waste treatment.

100 mL WASH

GHS02

Signal word: WARNING

60 mL ELU

GHS02 GHS07

Signal word: WARNING

0.6-100 mg RNase A (lyo)

GHS08

Signal word: DANGER
H334
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
P261sh, 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.

13 mL TRIS

Do not need labelling as hazardous
Signal word: -

100 mL RES

Do not need labelling as hazardous
Signal word: -

100 mL NEU

Do not need labelling as hazardous
Signal word: -

Label elements of the complete product

GHS02 GHS07 GHS08

Signal word: DANGER
H226, H334
Flammable liquid and vapour.May cause allergy or asthma symptoms or breathing difficulties if inhaled.
P210, P233, P241, P242, P243, P261sh, P280, P284, P303+361+353, P342+311, P403+235, P501
Keep away from heat/sparks/open flames/hot surfaces. No smoking.Keep container tightly closed.Use explosion-proof [electrical/ventilating/lighting] equipment.Use non-sparking tools.Take precautionary measures against static discharge.Avoid breathing dust/vapours.Wear protective gloves/protective clothing/eye protection/face 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 experiencing respiratory symptoms: Call a POISON CENTER/doctor.Store in a well-ventilated place. Keep cool.Dispose of contents/container to regulated waste treatment.

2.3 Other hazards

Possible hazards from physicochemical properties
In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. Vapour forms explosive mixtures with air.

Information pertaining to particular risks to human and possible symptoms
Cause after impairments of health when ingested in small quantities.
Kit contains small amounts of enzymes: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Information pertaining to particular risks to the environment
PBT: not applicable
vPvB: not applicable

Possible endocrine disrupting effects

no data available

SECTION 3: Composition / information on ingredients

3.1 Substances or 3.2 Mixtures

100 mL LYS

Substance name: *sodium hydroxide solution*
CAS No.: 1310-73-2

Substance rating: H314, Skin Corr. 1 A
Formula: $NaOH \cdot H_2O$
Pseudonym (de): verdünnte Natronlauge
REACH Reg. No.: 01-2119457892-27-xxxx
EC No.: 215-185-5 Indice No.: 011-002-00-6
Specific concentration limit: Eye Irrit. 2; H319: 0,5 % ≤ C < 2 % - Skin Corr. 1A; H314: C ≥ 5 % - Skin Corr. 1B; H314: 2 % ≤ C < 5 % - Skin Irrit. 2; H315: 0,5 % ≤ C < 2 %
Concentration: 0,5 - <1 %
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

Substance name: *dodecyl sulfate, sodium salt*
CAS No.: 151-21-3

Substance rating: H228, Flam. Sol. 1, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1, H332, Acute Tox. 4 inh., H335, resp. irrit. STOT SE 3, H412, Aquatic Chronic 3
Formula: $C_{12}H_{25}NaO_4S$
Pseudonym (de): Natriumlaurylsulfat
REACH Reg. No.: 01-2119489461-32-xxxx
EC No.: 205-788-1
Concentration: 0,1 - <1 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

Substance name: *indicator dye(s)*
CAS No.: -

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

200 mL EQU

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone)
Substance rating: H225, Flam. Liq. 2
Formula: C_2H_6O; C_2H_5OH
Pseudonym (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
Concentration: 5 - <20 %
acc. CLP (GHS): H226, Flam. Liq. 3

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

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

100 mL WASH

Substance name:	*ethanol*		
CAS No.:	64-17-5 (denatured with 1% 2-butanone)		
Substance rating:	H225, Flam. Liq. 2		
Formula:	C_2H_6O; C_2H_5OH		
Pseudonym (de):	Äthylalkohol, vergällter Spiritus		
REACH Reg. No.:	01-2119457610-43-xxxx		
EC No.:	200-578-6	Indice No.:	603-002-00-5
Concentration:	5 - <20 %		
acc. CLP (GHS):	H226, Flam. Liq. 3		

Substance name:	*potassium chloride*
CAS No.:	7447-40-7
Substance rating:	No criteria for classification or naming of chemical not required.
Formula:	KCl
Pseudonym (de):	KCl
REACH Reg. No.:	01-2119539416-36-xxxx
EC No.:	231-211-8
Concentration:	1 - <10 %
acc. CLP (GHS):	The criteria for classification are not fulfilled.

60 mL ELU

Substance name:	*2-propanol*		
CAS No.:	67-63-0		
Substance rating:	H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, resp. irrit. STOT SE 3		
Formula:	C_3H_8O		
Pseudonym (de):	Isopropanol, IPA, Propan-2-ol		
REACH Reg. No.:	01-2119457558-25-XXXX		
EC No.:	200-661-7	Indice No.:	603-117-00-0
Concentration:	10 - <15 %		
acc. CLP (GHS):	H226, Flam. Liq. 3, H319, Eye Irrit. 2		

Substance name:	*potassium chloride*
CAS No.:	7447-40-7
Substance rating:	No criteria for classification or naming of chemical not required.
Formula:	KCl
Pseudonym (de):	KCl
REACH Reg. No.:	01-2119539416-36-xxxx
EC No.:	231-211-8
Concentration:	1 - <10 %
acc. CLP (GHS):	The criteria for classification are not fulfilled.

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.

0.6-100 mg RNase A (lyo)

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

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

13 mL TRIS

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.

100 mL RES

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.

100 mL NEU

Substance name: *acetate buffer solution*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $CH_3COOH/K/Na \bullet H_2O$
Concentration: 25 - <45 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%.

List of H and P phrases: see section 16.2.

SECTION 4: First aid measures

4.1 Description of first aid measures

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

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

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

4.1.3 After INHALATION of vapours
After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function. ---

4.1.4 After ORAL Intake
After oral intake lots of water should be drunk after it has been ingested.

4.2 Most important symptoms and effects, both acute and delayed

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Chronic effects: Repeated contact, even in small amounts, can lead to sensitization.

4.3 Indication of any immediate medical attention and special treatment needed

Inform patient respectively further measures and the possibility of long-term damages. ---

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

WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible.

5.3 Advice for firefighters

No, for listed product.The substance/mixture is flammable. Product package burns like paper or plastic. Cool any undamaged containers in water, and remove from the danger zone if possible. Heating will lead to an increase in pressure, and a danger of bursting.

5.4 Additional information

no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Keep product away from sources of ignition - No smoking. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

6.2 Environmental precautions

PBT: not applicable
vPvB: not applicable

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals.
Clean any contaminated equipment and floors with plenty of water.
Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

no data available

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product. Use only in well-ventilated working areas.

7.2 Conditions for safe storage, including any incompatibilities

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

Storage class (VCI): 3
Water hazard class (DE): 2

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

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

100 mL LYS
Chemical: *indicator dye(s)* CAS No.: -

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2

Chemical: *dodecyl sulfate, sodium salt* CAS No.: 151-21-3
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

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

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 Effected 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

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

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 Effected 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

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

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

Chemical: *2-propanol* CAS No.: 67-63-0
DNEL: [inh] 500 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 140.9 mg/L
PNEC = Predicted No Effected Concentration
TRGS 900 (DE): 200 ppm / 500 mg/m³
E/e respirable
Short-term exposure factor: 2 (II), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
SUVA(CH) MAK value: 200 ppm / 500 mg/m³
TRGS 903 (DE): [Aceton B/b, U/b] 25 mg/L
B blood, U urine, a no limitation, b end of exposition or shift

NIOSH: [TWA] 400 ppm / 980 mg/m³
NIOSH STEL: 500 ppm / 1225 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] 400 ppm / 980 mg/m³

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

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

100 mL NEU
Chemical: *acetate buffer solution* CAS No.: -

8.2 Exposure controls

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

8.2.1 Respiratory protection
Use for open access of these substances for example a protection filter, class A/AX. No additional recommendations.

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

8.2.3 Eye / Face Protection
Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection.

8.2.4 Skin protection
Recommended to avoid contamination with these hazards.

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

8.2.6 Thermal hazards
no data available

8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

0.6-100 mg RNase A (lyo)

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
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:	0-100 %
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	no data available
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

100 mL LYS

a) State of aggregation:	liquid
b) Colour:	blue
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:	13
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.008 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

200 mL EQU

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:	54 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6-7
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.03 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

100 mL WASH

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:	31 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6.5 - 7.5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.04 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

60 mL ELU

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:	30 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	8.5-9.5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.04 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

13 mL TRIS

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	8-9
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.0 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

100 mL RES

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	odorless
d) Melting point:	no data available
e) Boiling point:	no data available
f) Flammability:	no data available
g) Explosive limits (lower / upper):	no data available
h) Flash point:	no data available
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	7.5 - 8.5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.01 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

100 mL NEU

a) State of aggregation:	liquid
b) Colour:	colourless
c) Odor:	acetic
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:	63 °C

i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	4-5
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.19 g/cm³
q) Relative vapour density $_{(air=1)}$:	no data available
r) Particle size:	no data available

9.2 Other information

9.2.1 Information on physical hazard classes

no data available

9.2.2 Other safety-related parameters

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

10.2 Chemical stability

no known instability.

10.3 Possibility of hazardous reactions

But avoid reactions with oxidizing agents. No further data available.

10.4 Conditions to avoid

But formation of explosive gases/vapours with air is possible. Use only in well ventilated rooms. No more required.

10.5 Incompatible materials

Avoid storage with oxidising substances.

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.

0.6-100 mg RNase A (lyo)

Chemical: *RNase* CAS No.: 9001-99-4
TSCA Inventory: listed
Japan CSCL/PRTR: not listed
Japan ISHL: not listed
Korea Exist.Chem.Inventory: KE-30341
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.

100 mL LYS

Chemical: *indicator dye(s)* CAS No.: -
TSCA Inventory: all listed, <1%

Chemical: *sodium hydroxide solution* CAS No.: 1310-73-2
TSCA Inventory: listed California Proposition 65 List: not listed
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: -
Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
Japan ISHL: listed ≥1,0%/≥1,0% SDS required
Korea Exist.Chem.Inventory: KE-31487
LD50 $_{orl\ rat}$: [< 1%] > 50000 mg/kg
LD50 $_{orl\ mus}$: [< 1%] > 4000 mg/kg

Chemical: *dodecyl sulfate, sodium salt* CAS No.: 151-21-3
TSCA Inventory: listed California Proposition 65 List: not listed
Australia NICNAS: not listed Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: PRTR - Class I Designated Chemical Substance, Japan PDSCL: not listed
Japan ISHL: not listed
South Korea TCCA: not listed
Korea Exist.Chem.Inventory: KE-21884
LD50 $_{orl\ rat}$: 1288 mg/kg
LC50 $_{ihl\ rat}$: 3,900 mg/L/1H

200 mL EQU
Chemical: *potassium chloride* CAS No.: 7447-40-7
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-29086
LD50 $_{orl\ rat}$: 2600 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_Low $_{ihl\ gpg}$: 21,900 mg/L
LC_Low $_{orl\ hmn}$: 1400 mg/kg
LC50 $_{ihl\ mus}$: 123,4 mg/L/4H
LC50 $_{ihl\ rat}$: 115,9-133,8 mg/L/4H
LD50 $_{orl\ mus}$: 3450 mg/kg

TRGS 905 (DE): K5, M5, R $_{F}$ C

100 mL WASH
Chemical: *potassium chloride* CAS No.: 7447-40-7
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-29086
LD50 $_{orl\ rat}$: 2600 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_Low $_{ihl\ gpg}$: 21,900 mg/L
LC_Low $_{orl\ hmn}$: 1400 mg/kg
LC50 $_{ihl\ mus}$: 123,4 mg/L/4H
LC50 $_{ihl\ rat}$: 115,9-133,8 mg/L/4H
LD50 $_{orl\ mus}$: 3450 mg/kg

TRGS 905 (DE): K5, M5, R $_{F}$ C

60 mL ELU
Chemical: *potassium chloride* CAS No.: 7447-40-7
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-29086
LD50 $_{orl\ rat}$: 2600 mg/kg

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

Chemical: *2-propanol* CAS No.: 67-63-0
TSCA Inventory: listed California Proposition 65 List: not listed
ACGIH: 1230 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis
Australia NICNAS: Canada CEPA 1999: DSL yes
Japan CSCL/PRTR: PAC yes, Japan PDSCL: -
Japan ISHL: listed ≥1,0%/≥0,1%, Article 57-2 (SDS required)
South Korea TCCA:
Korea Exist.Chem.Inventory: KE-29363
LD50 $_{orl\ rat}$: 5045 mg/kg
LC_Low $_{orl\ hmn}$: 3570 mg/kg
LC50 $_{ihl\ rat}$: 25 mg/L/4H

TRGS 905 (DE): R $_{F}$ C

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

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

100 mL NEU
Chemical: *acetate buffer solution* CAS No.: -
TSCA Inventory: all listed
Korea Exist.Chem.Inventory: listed

11.2 Other hazards

Possible endocrine disrupting effects
no data available

Other information
no additional data available

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

0.6-100 mg RNase A (lyo)
Substance name: *RNase* CAS-Nr.: 9001-99-4
Water hazard class (DE): 1
Storage class (VCI): 13

100 mL LYS
Substance name: *indicator dye(s)* CAS-Nr.: -
Storage class (VCI): 12-13

Substance name: *sodium hydroxide solution* CAS-Nr.: 1310-73-2
LC50 leuciscus idus/96h : 35-189 mg/L
LC50 fish/96h : 45.4 mg/L
EC50 daphnia/48h : >100 mg/L
Water hazard class (DE): nwg WGK No.: 0142
Storage class (VCI): 12-13

Substance name: *dodecyl sulfate, sodium salt* CAS-Nr.: 151-21-3
LC50 daphnia magna/48h : 6.3 mg/L
LC50 fish/96h : 1.31-22.5 mg/L
Water hazard class (DE): 2
Storage class (VCI): 12-13

200 mL EQU
Substance name: *potassium chloride* CAS-Nr.: 7447-40-7
Water hazard class (DE): 1
Storage class (VCI): 12-13

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

100 mL WASH
Substance name: *potassium chloride* CAS-Nr.: 7447-40-7
Water hazard class (DE): 1
Storage class (VCI): 12-13

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

60 mL ELU
Substance name: *potassium chloride* CAS-Nr.: 7447-40-7
Water hazard class (DE): 1
Storage class (VCI): 12-13

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

Substance name: *2-propanol* CAS-Nr.: 67-63-0
PNEC (fresh water) : 140.9 mg/L
PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected
LC50 fish/96h : 1400 mg/L
EC50 daphnia/48h : 13.3 g/L
IC50 scenedesmus quadricauda/72h : >1000 mg/L
EC10 pseudomonas putita/16h : EC5: 1050 mg/L
Water hazard class (DE): 1 WGK No.: 0135
Storage class (VCI): 3

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

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

100 mL NEU
Substance name: *acetate buffer solution* CAS-Nr.: -
Storage class (VCI): 12

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Substance name: *dodecyl sulfate, sodium salt* CAS-Nr.: 151-21-3
Dispersion coefficient ($K_{o/w}$): 1,6
Substance name: *ethanol* CAS-Nr.: 64-17-5
Dispersion coefficient ($K_{o/w}$): -0,31
Substance name: *ethanol* CAS-Nr.: 64-17-5
Dispersion coefficient ($K_{o/w}$): -0,31
Substance name: *2-propanol* CAS-Nr.: 67-63-0
Dispersion coefficient ($K_{o/w}$): 0,05

12.4 Mobility in soil

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

no data available

12.7 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06).

13.1 Waste treatment methods

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

SECTION 14: Transport information

14.1 UN number: 1993
14.2 UN proper shipping name: Flammable liquid, n.o.s. (2-propanol, ethanol mixture)
14.3 Class: 3
14.4 Packing group: III

Road transport ADR

Classification code:	F1		
Limited Quantity:	5 L	Tunnel restriction code:	D/E
Excepted Quantity:	E 1		
Special instructions:	274, 601		

Air transport IATA DGR

Limited Quantity:	PAX: 355	max. quantity PAX:	60 L
	CAO: 366	max. quantity CAO:	220 L
Excepted Quantity:	E 1		

Maritime transport IMDG

EmS:	F-E, S-E	Staukategorie:	A
Special instructions:	223, 274, 955		

14.5 Environmental hazards

none, contains only small quantities of hazardous substances

14.6 Special precautions for user

not necessary

14.7 Carriage in bulk by sea in accordance with IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
TRGS 220, National aspects when preparing safety data sheets, Jan 2017
TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
Betriebsicherheitsverordnung (BetrSichV), Sept 2002
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
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 2.10.7.8 and 2.2.2.2 following changes were applied: - 8 product component data corrected - 5 composition data corrected - 6 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H	Between versions 2.10.7.8 and 2.2.2.2 following changes were applied: - 8 product component data corrected - 5 composition data corrected - 6 substance data corrected
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

16.2.2 List of relevant P phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take precautionary measures against static discharge.
P261sh	Avoid breathing dust/vapours.
P280	Wear protective gloves/protective clothing/eye protection/face 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].
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P403+235	Store in a well-ventilated place. Keep cool.
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)

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)
Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)
TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)
Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG
Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)
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 oxigen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage
DNEL:	Derived No-Effect Level (for workers)
derm:	dermal
dog:	dog
EC10:	Concentration causing a toxic effect in 10% of the test organisms
EC:	European Community
EC-Nr:	Substance number of the EC substance inventory
EmS:	Guide to accident management measures on ships
EU:	European Union
fish:	fish (not spezified)
GHS:	Global Harmonized System of Classification and Labeling of Chemicals
gpg:	guinea pig
ICAO:	International Civil Aviation Organization
ihl:	inhaled
IMDG:	International Maritime Dangerous Goods Code
intrav:	intravenous
ipt:	intraperitonaeal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	letale concentration 50%
LD50:	letale dosis 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	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 Effected 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.