

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

Printing date: 13.10.2025

NucleoBond Xtra Midi Plus EF (10)

Date of issue: 15.09.2025

Page: 1/26

Version: 2.12.3.9

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

1.1 Product identifier

REF 740422.10
Product name NucleoBond Xtra Midi Plus EF (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-EF	UFI: W24W-23R9-3206-XR1C
1 x 100 mL RES-EF	
1 x 400 mL ENDO-EF	UFI: S8UU-73G2-Y20K-0ANE
1 x 30 mL H ₂ O-EF	
1 x 30 mL TE-EF	
1 x 60 mL ELU-EF	UFI: HEDV-F3HG-720J-9M6A
1 x 100 mL NEU-EF	
1 x 200 mL EQU-EF	UFI: S8UU-73G2-Y20K-0ANE
1 x 60 mL FIL-EF	
1 x 200 mL WASH-EF	UFI: PRDV-G392-F20H-XYHK
1 x 9 mL H ₂ O-EF (for 70% ethanol)	

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

H226
H315
H319
H334

Hazard classes/categories

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

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 2/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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

100 mL LYS-EF



GHS07

Signal word

WARNING

Hazard identification

Hazard classes/categories

H315

Skin Irrit. 2

H319

Eye Irrit. 2

400 mL ENDO-EF



GHS02

Signal word

WARNING

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

200 mL EQU-EF



GHS02

Signal word

WARNING

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

200 mL WASH-EF



GHS02

Signal word

WARNING

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

60 mL ELU-EF



GHS02



GHS07

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 3/26

Printing date: 13.10.2025

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Signal word

WARNING

Hazard identification

Hazard classes/categories

H226

Flam. Liq. 3

H319

Eye Irrit. 2

60 mL FIL-EF

Signal word

Do not need labelling as hazardous

No hazard class

-

30 mL H₂ O-EF

Signal word

Do not need labelling as hazardous

No hazard class

-

9 mL H₂ O-EF (for 70% ethanol)

Signal word

Do not need labelling as hazardous

No hazard class

-

0.6-100 mg RNase A (lyo)



GHS08

Signal word

DANGER

Hazard identification

Hazard classes/categories

H334

Resp. Sens. 1

30 mL TE-EF

Signal word

Do not need labelling as hazardous

No hazard class

-

100 mL RES-EF

Signal word

Do not need labelling as hazardous

No hazard class

-

100 mL NEU-EF

Signal word

Do not need labelling as hazardous

No hazard class

-

List of H phrases: see section 16.2

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 4/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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.

100 mL LYS-EF



GHS07

Signal word: WARNING

400 mL ENDO-EF



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.

200 mL EQU-EF



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.

200 mL WASH-EF



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.

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 5/26

Printing date: 13.10.2025

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Version: 2.12.3.9

60 mL ELU-EF



GHS02



GHS07

Signal word: WARNING

60 mL FIL-EF

Do not need labelling as hazardous

Signal word: -

30 mL H₂O-EF

Do not need labelling as hazardous

Signal word: -

9 mL H₂O-EF (for 70% ethanol)

Do not need labelling as hazardous

Signal word: -

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.

30 mL TE-EF

Do not need labelling as hazardous

Signal word: -

100 mL RES-EF

Do not need labelling as hazardous

Signal word: -

100 mL NEU-EF

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



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 6/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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-EF

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

Substance rating: H314, Skin Corr. 1 A
Formula: $\text{NaOH} \cdot \text{H}_2\text{O}$
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: $\text{C}_{12}\text{H}_{25}\text{NaO}_4\text{S}$
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.

400 mL ENDO-EF

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

Substance rating: H225, Flam. Liq. 2
Formula: $\text{C}_2\text{H}_6\text{O}$; $\text{C}_2\text{H}_5\text{OH}$
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

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 7/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

200 mL EQU-EF

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
Concentration: 5 - <20 %
acc. CLP (GHS): H226, Flam. Liq. 3

Indice No.: 603-002-00-5

200 mL WASH-EF

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
Concentration: 5 - <20 %
acc. CLP (GHS): H226, Flam. Liq. 3

Indice No.: 603-002-00-5

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.

60 mL ELU-EF

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
Concentration: 10 - <15 %
acc. CLP (GHS): H226, Flam. Liq. 3, H319, Eye Irrit. 2

Indice No.: 603-117-00-0

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 8/26

Printing date: 13.10.2025

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Version: 2.12.3.9

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.

60 mL FIL-EF

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.

30 mL H₂O-EF

Substance name: *water*
CAS No.: 7732-18-5

Substance rating: No criteria for classification or naming of chemical not required.
Formula: H₂O
REACH Reg. No.: exempt, Annex IV
EC No.: 231-791-2
Concentration: 90 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.

9 mL H₂O-EF (for 70% ethanol)

Substance name: *water*
CAS No.: 7732-18-5

Substance rating: No criteria for classification or naming of chemical not required.
Formula: H₂O
REACH Reg. No.: exempt, Annex IV
EC No.: 231-791-2
Concentration: 90 - <100 %
acc. CLP (GHS): The criteria for classification are not fulfilled.



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 9/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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

30 mL TE-EF

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-EF

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-EF

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

Substance rating: No criteria for classification or naming of chemical not required.
Formula: $\text{CH}_3\text{COOH/K/Na}\cdot\text{H}_2\text{O}$
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



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 10/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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.

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 11/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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-EF

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

60 mL ELU-EF

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 Effect 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

60 mL FIL-EF

Chemical: *potassium chloride*

CAS No.: 7447-40-7

Chemical: *chemicals/mixture until 1%*

CAS No.: -

200 mL WASH-EF

Chemical: *potassium chloride*

CAS No.: 7447-40-7

Chemical: *chemicals/mixture until 1%*

CAS No.: -

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 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

30 mL TE-EF

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10	NucleoBond Xtra Midi Plus EF (10)	Page: 12/26
Printing date: 13.10.2025	Date of issue: 15.09.2025	Version: 2.12.3.9

Chemical: *chemicals/mixture until 1%*

CAS No.: -

100 mL RES-EF

Chemical: *chemicals/mixture until 1%*

CAS No.: -

100 mL NEU-EF

Chemical: *acetate buffer solution*

CAS No.: -

400 mL ENDO-EF

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 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

200 mL EQU-EF

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 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

30 mL H₂O-EF

Chemical: *water*

CAS No.: 7732-18-5

9 mL H₂O-EF (for 70% ethanol)

Chemical: *water*

CAS No.: 7732-18-5

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.

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 13/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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 ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

100 mL LYS-EF

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/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

60 mL ELU-EF

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



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 14/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

p) Specific gravity: 1.04 g/cm³
q) Relative vapour density (air=1): no data available
r) Particle size: no data available

60 mL FIL-EF

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: 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: 1.06 g/cm³
q) Relative vapour density (air=1): no data available
r) Particle size: no data available

200 mL WASH-EF

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: 39 °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: 1.04 g/cm³
q) Relative vapour density (air=1): no data available
r) Particle size: no data available

30 mL TE-EF

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: 7.2-7.7
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: 1.0 g/cm³
q) Relative vapour density (air=1): no data available
r) Particle size: no data available

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 15/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

100 mL RES-EF

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/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

100 mL NEU-EF

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/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

400 mL ENDO-EF

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:	39 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6.5
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:	1.35 g/cm ³
q) Relative vapour density ($\rho_{air=1}$):	no data available
r) Particle size:	no data available

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 16/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

200 mL EQU-EF

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:	39 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	6.5
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:	1.35 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

30 mL H₂O-EF

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:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.0 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

9 mL H₂O-EF (for 70% ethanol)

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:	6-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	no data available
n) Dispersion coefficient ($K_{o/w}$):	no data available
o) Vapour pressure (20°C):	no data available
p) Specific gravity:	1.0 g/cm ³
q) Relative vapour density (air=1):	no data available
r) Particle size:	no data available

9.2 Other information



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 17/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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-EF

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



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10	NucleoBond Xtra Midi Plus EF (10)	Page: 18/26
Printing date: 13.10.2025	Date of issue: 15.09.2025	Version: 2.12.3.9

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

60 mL ELU-EF

Chemical: *potassium chloride*
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-29086
LD50 orl rat : 2600 mg/kg

CAS No.: 7447-40-7

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

CAS No.: -

Chemical: *2-propanol*
TSCA Inventory: 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: KE-29363
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

CAS No.: 67-63-0

California Proposition 65 List: not listed

TRGS 905 (DE): R F C

60 mL FIL-EF

Chemical: *potassium chloride*
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-29086
LD50 orl rat : 2600 mg/kg

CAS No.: 7447-40-7

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

CAS No.: -

200 mL WASH-EF

Chemical: *potassium chloride*
TSCA Inventory: listed
Korea Exist.Chem.Inventory: KE-29086
LD50 orl rat : 2600 mg/kg

CAS No.: 7447-40-7

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

CAS No.: -

Chemical: *ethanol*
TSCA Inventory: 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

CAS No.: 64-17-5

California Proposition 65 List: not listed



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 19/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%/\geq 0,1\%$, 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

30 mL TE-EF

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

CAS No.: -

100 mL RES-EF

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

CAS No.: -

100 mL NEU-EF

Chemical: acetate buffer solution
 TSCA Inventory: all listed
 Korea Exist.Chem.Inventory: listed

CAS No.: -

400 mL ENDO-EF

Chemical: ethanol
 TSCA Inventory: 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
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%/\geq 0,1\%$, 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

CAS No.: 64-17-5

California Proposition 65 List: not listed

Canada CEPA 1999: DSL yes

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

200 mL EQU-EF

Chemical: ethanol
 TSCA Inventory: 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
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%/\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217

CAS No.: 64-17-5

California Proposition 65 List: not listed

Canada CEPA 1999: DSL yes



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 20/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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

30 mL H₂ O-EF

Chemical: water

CAS No.: 7732-18-5

TSCA Inventory: listed

Korea Exist.Chem.Inventory: KE-35400

LD50 orl rat : > 90000 mg/kg

9 mL H₂ O-EF (for 70% ethanol)

Chemical: water

CAS No.: 7732-18-5

TSCA Inventory: listed

Korea Exist.Chem.Inventory: KE-35400

LD50 orl rat : > 90000 mg/kg

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-EF

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

60 mL ELU-EF

Substance name: potassium chloride

CAS-Nr.: 7447-40-7

Water hazard class (DE): 1

Storage class (VCI): 12-13

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10	NucleoBond Xtra Midi Plus EF (10)	Page: 21/26
Printing date: 13.10.2025	Date of issue: 15.09.2025	Version: 2.12.3.9

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

CAS-Nr.: -

Substance name: *2-propanol*
 PNEC (fresh water): 140.9 mg/L
 PNEC = Predicted No Effect 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 putida/16h: EC5: 1050 mg/L
 Water hazard class (DE): 1 WGK No.: 0135
 Storage class (VCI): 3

CAS-Nr.: 67-63-0

60 mL FIL-EF

Substance name: *potassium chloride*
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

CAS-Nr.: 7447-40-7

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

CAS-Nr.: -

200 mL WASH-EF

Substance name: *potassium chloride*
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

CAS-Nr.: 7447-40-7

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

CAS-Nr.: -

Substance name: *ethanol*
 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 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
 Storage class (VCI): 3

CAS-Nr.: 64-17-5

30 mL TE-EF

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

CAS-Nr.: -

100 mL RES-EF

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

CAS-Nr.: -

100 mL NEU-EF

Substance name: *acetate buffer solution*
 Storage class (VCI): 12

CAS-Nr.: -

400 mL ENDO-EF

Substance name: *ethanol*
 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 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

CAS-Nr.: 64-17-5



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 22/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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

200 mL EQU-EF

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 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
 Storage class (VCI): 3

30 mL H₂O-EF

Substance name: *water* CAS-Nr.: 7732-18-5

9 mL H₂O-EF (for 70% ethanol)

Substance name: *water* CAS-Nr.: 7732-18-5

12.2 Persistence and degradability

12.3 Bioaccumulative potential

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

400 mL ENDO-EF

Substance name: *ethanol* CAS-Nr.: 64-17-5
 Dispersion coefficient (K_{ow}): -0,31

200 mL EQU-EF

Substance name: *ethanol* CAS-Nr.: 64-17-5
 Dispersion coefficient (K_{ow}): -0,31

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

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 23/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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

UN 1993 class 3 III, **Excepted Quantities** ($\leq 30 \text{ mL} / \sum \leq 1 \text{ L}$) = ADR/ IATA E1

or

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 2.12.3.9 and 2.2.2.2 following changes were applied: - 10 product component data corrected - 1 composition data corrected - 7 substance data corrected



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 24/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H	Between versions 2.12.3.9 and 2.2.2.2 following changes were applied: - 10 product component data corrected - 1 composition data corrected - 7 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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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 25/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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:	lethal concentration 50%
LD50:	lethal dose 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	fish, rainbow trout
orl:	oral
OSHA:	Occupational Safety and Health Administration
PAX:	transport on passenger planes allowed
PBT:	persistent, bioaccumulating, toxic substance
pH:	pH value
pimephales promelas:	fish, fathead minnow
PNEC:	Predicted No Effect Concentration
PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	Registration 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

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740422.10

NucleoBond Xtra Midi Plus EF (10)

Page: 26/26

Printing date: 13.10.2025

Date of issue: 15.09.2025

Version: 2.12.3.9

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.