

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740427

NucleoBond Xtra EF Buffer Set I

Page: 1/13

Printing date: 15.04.2026

Date of issue: 01.02.2024

Version: 2.7.2.7

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

1.1 Product identifier

REF 740427
Product name NucleoBond Xtra EF Buffer Set I

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 150 mL LYS-EF UFI: W24W-23R9-3206-XR1C
1 x 150 mL RES-EF
1 x 150 mL NEU-EF

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
Valenciener Str. 11, 52355 Düren, Germany
Phone: +49 2421 969 0

E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

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

DE: Gemeinsames Giftinformationszentrum (GGIZ)

99089 Erfurt tel. +49 361 730 730, <<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet:

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

SECTION 2: Hazard identification

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



GHS07



GHS08

Signal word

DANGER

Hazard identification

H315
H319
H334

Hazard classes/categories

Skin Irrit. 2
Eye Irrit. 2
Resp. Sens. 1

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

150 mL LYS-EF



GHS07



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

0.6-100 mg RNase A (Iyo)



GHS08

Signal word	DANGER
Hazard identification	Hazard classes/categories
H334	Resp. Sens. 1

150 mL RES-EF

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

150 mL NEU-EF

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

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

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

150 mL LYS-EF



GHS07

Signal word: WARNING
 H315, H319
 Causes skin irritation. Causes serious eye irritation.
 P264, P280sh, P302+352, P305+351+338, P332+313, P337+313, P362+364
 Wash hands thoroughly after handling. Wear protective gloves/eye protection. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

0.6-100 mg RNase A (Iyo)



GHS08



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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.

150 mL RES-EF

Do not need labelling as hazardous

Signal word: -

150 mL NEU-EF

Do not need labelling as hazardous

Signal word: -

Label elements of the complete product



GHS07



GHS08

Signal word: DANGER

H315, H319, H334

Causes skin irritation.Causes serious eye irritation.May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261sh, P264, P280sh, P284, P302+352, P305+351+338, P332+313, P337+313, P342+311, P362+364, P501

Avoid breathing dust/vapours.Wash hands thoroughly after handling.Wear protective gloves/eye protection.[In case of inadequate ventilation] wear respiratory protection.IF ON SKIN: Wash with plenty of water.IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.If skin irritation occurs: Get medical advice/attention.If eye irritation persists: Get medical advice/attention.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.Take off contaminated clothing and wash it before reuse.Dispose of contents/container to regulated waste treatment.

2.3 Other hazards

Possible hazards from physicochemical properties

In the case of pH values are less than 5 or higher than 9 then it is irritant.

Information pertaining to particular risks to human and possible symptoms

Cause after 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

150 mL LYS-EF

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

Substance rating: H314, Skin Corr. 1 A
Formula: NaOH·H₂O
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



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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: C₁₂H₂₅NaO₄S
 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.

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

150 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.

150 mL NEU-EF

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

Substance rating: No criteria for classification or naming of chemical not required.
 Formula: CH₃COOH/K/Na•H₂O
 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



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

4.1.2 After EYE Contact

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

4.1.3 After INHALATION of vapours

Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function. ---

4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences.

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

After SKIN CONTACT rinse with water for a long time. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. 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

no data available

5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic. For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

5.4 Additional information

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective gloves (see 8.2.2). Wear eye protection. 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

And dispose in accordance to local regulations for the disposal of hazardous chemicals. Clean any contaminated equipment and floors with plenty of water.

6.4 Reference to other sections

see information in section 5.4,7,8 and 13



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SECTION 7: Handling and storage

7.1 Precautions for safe handling

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): 12

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

150 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

150 mL RES-EF

Chemical: *chemicals/mixture until 1%*

CAS No.: -

150 mL NEU-EF

Chemical: *acetate buffer solution*

CAS No.: -

8.2 Exposure controls

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 (f.ex. from Ansell or KCL).

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.

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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

150 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 (air=1):	no data available
r) Particle size:	no data available

150 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 (air=1):	no data available
r) Particle size:	no data available



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150 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

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

No further data available.

10.4 Conditions to avoid

No more required.

10.5 Incompatible materials

no additional data available

10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11: Toxicological information

11.1 Information on the hazard classes according regulation (EC) 1272/2008

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

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.



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150 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
 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

150 mL RES-EF

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

150 mL NEU-EF

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

150 mL LYS-EF

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



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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

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

150 mL NEU-EF
 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_{ow}): 1,6

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

SECTION 14: Transport information

14.1 - 14.4: No dangerous goods according the transport regulations

14.5 Environmental hazards

none

14.6 Special precautions for user

not necessary

14.7 Carriage in bulk by sea in accordance with IMO instruments

Not applicable.



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SECTION 15: Regulatory information

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

Dangerous Substances Protection Act (DE: Chemikaliengesetz - ChemG), Aug 2013, Stand: Okt 2020
 Ordinance on protection against dangerous substances (E: Gefahrstoffverordnung - GefStoffV), Nov 2010, Stand: Mrz 2017
 TRGS 201, Classification and labeling of activities involving hazardous substances, Feb 2017
 TRGS 220, National aspects when preparing safety data sheets, Jan 2017
 TRGS 400, Risk assessment for activities involving hazardous substances, Jul 2017
 TRGS 401, Skin contact hazard - identification, assessment, action, Jun 2008, status: Feb 2011
 BekGS 408, Application of the GefStoffV and the TRGS with the entry into force of the CLP regulation, December 2009, status: Jan 2012
 Wasserhaushaltsgesetz - WHG, Section 3 Handling substances hazardous to water, Jul 2009, status: Aug 2016
 If necessary, observe other country-specific regulations.

15.2 Chemical safety assessment

no data available

SECTION 16: Other information

16.1 Changes compared to the last version

Between versions 2.7.2.7 and 2.2.2.2 following changes were applied: - 5 product component data corrected - 5 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H Between versions 2.7.2.7 and 2.2.2.2 following changes were applied: - 5 product component data corrected - 5 substance data corrected
 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

P261sh Avoid breathing dust/vapours.
 P264 Wash hands thoroughly after handling.
 P280sh Wear protective gloves/eye protection.
 P284 [In case of inadequate ventilation] wear respiratory protection.
 P302+352 IF ON SKIN: Wash with plenty of water.
 P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P332+313 If skin irritation occurs: Get medical advice/attention.
 P337+313 If eye irritation persists: Get medical advice/attention.
 P342+311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
 P362+364 Take off contaminated clothing and wash it before reuse.
 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 progress (11th ATP)
 Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
 Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)
 TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
 Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)
 Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

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Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)
 Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)
 Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)
 Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th ATP)

revisions/updates

Reason for revision: 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary
 2014-04 adjustment according Regulation 487/2013/EU
 2016-03 adjustment according Regulation 1221/2015/EU

 2017-11 adjustment according the ECHA registration dossier
 2022-11 adjustment according Regulation 878/2020/EU

16.5 Further information

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16.6 Legend / Abbreviations

- acc: according
- ADR: Convention concerning the International Carriage of Dangerous Goods by Road
- Act: acute
- BAT: biological workplace tolerance value
- CAO: Cargo Aircraft Only
- Carc: carcinogen
- CAS: Chemical Abstracts Service
- CLP: Classification, Labelling and Packaging regulation
- CMR: carcinogen, mutagen, reproduction toxic
- Corr: corrosive
- COD: chemical oxigen demand
- CSCL: Chemical Substance Control Law (Jp)
- Dam: damage
- DNEL: Derived No-Effect Level (for workers)
- derm: dermal
- dog: dog
- EC10: Concentration causing a toxic effect in 10% of the test organisms
- EC: European Community
- EC-Nr: Substance number of the EC substance inventory
- EmS: Guide to accident management measures on ships
- EU: European Union
- fish: fish (not spezified)
- GHS: Global Harmonized System of Classification and Labeling of Chemicals
- gpg: guinea pig
- ICAO: International Civil Aviation Organization
- ihl: inhaled
- IMDG: International Maritime Dangerous Goods Code
- intrav: intravenous
- ipt: intraperitoneal
- ISHL: Industrial Safety and Health Law (Jp)
- LC50: letale concentration 50%
- LD50: letale dosis 50%
- leuciscus idus: fisch, ide, orfe
- MAK: maximum workplace concentration
- Met: Metall
- mus: mouse
- Muta: mutagen
- NIOSH: National Institute for Occupational Safety and Health (US)
- NRD: Non-rapidly degradable
- onchorhynchus mykiss: fisch, rainbow trout
- orl: oral
- OSHA: Occupational Safety and Health Administration
- PAX: transport on passenger planes allowed
- PBT: persistent, bioaccumulating, toxic substance



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pH: pH value
 pimephales promelas: fish, fathead minnow
 PNEC: Predicted No Effect Concentration
 PROC 15: Process category 'for laboratory use'
 PRTR: Law for PRTR and Promotion of Chemical Management (Jp)
 PVC: polyvinyl chloride
 quail: bird, quail
 rat: rat
 rbt: rabbit
 RD: rapidly degradable
 RE: repeated
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
 REF: item number, reference number
 Reg.No.: rRegistration number
 Repr: harmful to reproduction
 Resp: respiratory
 RIP: REACH Implementations Projects
 scu: sub cutan
 SDS: safety data sheet
 Sens: sensitisation
 STEL: short term exposure limit
 STOT: Specific Target Organ Toxicity
 SVHC: Substance of Very High Concern
 t/a: tons per year
 TCCA: Toxic Chemicals Control Act (S. Korea)
 Tox: toxic
 TSCA: The Toxic Substances Control Act (US)
 TWA: time weighted average
 TRGS: technical regulations (DE)
 vPvB: very persistent, very bioaccumulating substance

16.7 Training advice

Regular safety training. Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.



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