

Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740595.1	Buffer NTB (1000 mL)	Page: 1/11
Printing date: 15.04.2026	Date of issue: 10.10.2023	Version: 2.2.3.6

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

1.1 Product identifier

REF 740595.1
 Product name Buffer NTB (1000 mL)

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 1000 mL NTB UFI: MMPT-631A-V206-GNTN

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

Signal word WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H336	resp. irrit. STOT SE 3

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

1000 mL NTB



GHS02 GHS07



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REF: 740595.1	Buffer NTB (1000 mL)	Page: 2/11
Printing date: 15.04.2026	Date of issue: 10.10.2023	Version: 2.2.3.6

Signal word	WARNING
Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H336	resp. irrit. STOT SE 3

List of H phrases: see section 16.2

2.2 Label elements according regulation (EC) 1272/2008

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2). The irritant hazard should be eliminated, because of buffer chemicals inside.

1000 mL NTB



Signal word: WARNING
 H226, H302, H315, H319, H336
 Flammable liquid and vapour. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness.
 P210, P240, P241, P242, P261, P264W, P270, P271, P280sh, P301+312, P303+361+353, P305+351+338, P330, P332+313, P337+313, P370+378, P403+235, P405, P501
 Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Avoid breathing dust/fume/gas/mist/vapours/spray. Wash with water thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse mouth. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. In case of fire: Use suitable extinguisher media to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container to regulated waste treatment.

Label elements of the complete product



Signal word: WARNING
 H226, H302, H315, H319, H336
 Flammable liquid and vapour. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness.
 P210, P240, P241, P242, P261, P264W, P270, P271, P280sh, P301+312, P303+361+353, P305+351+338, P330, P332+313, P337+313, P370+378, P403+235, P405, P501
 Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Avoid breathing dust/fume/gas/mist/vapours/spray. Wash with water thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse mouth. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. In case of fire: Use suitable extinguisher media to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container to regulated waste treatment.



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Safety Data Sheet

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REF: 740595.1

Buffer NTB (1000 mL)

Page: 3/11

Printing date: 15.04.2026

Date of issue: 10.10.2023

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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 oral intake, impairments of health when ingested in small quantities.

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

1000 mL NTB

Substance name: *guanidine hydrochloride*
CAS No.: 50-01-1

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2
Formula: CH₆ClN₃
Pseudonym (de): Guanidiniumchlorid
REACH Reg. No.: 01-2119977063-35-0005
EC No.: 200-002-3
Concentration: 36 - <50 %
acc. CLP (GHS): H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2

Indice No.: 607-148-00-0

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: C₃H₈O
Pseudonym (de): Isopropanol, IPA, Propan-2-ol
REACH Reg. No.: 01-2119457558-25-XXXX
EC No.: 200-661-7
Concentration: 20 - <35 %
acc. CLP (GHS): H226, Flam. Liq. 3, H319, Eye Irrit. 2, H336, resp. irrit. STOT SE 3

Indice No.: 603-117-00-0

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.

4.1.1 After SKIN Contact

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

4.1.2 After EYE Contact

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

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. ---



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REF: 740595.1	Buffer NTB (1000 mL)	Page: 4/11
Printing date: 15.04.2026	Date of issue: 10.10.2023	Version: 2.2.3.6

- 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**
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. ---

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. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.
For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.
- 5.4 Additional information**
Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). Wear eye protection. 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**
see information in section 5.4,7,8 and 13

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**
Handling in accordance with the test instruction, that comes with the product.
- 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



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740595.1	Buffer NTB (1000 mL)	Page: 5/11
Printing date: 15.04.2026	Date of issue: 10.10.2023	Version: 2.2.3.6

Water hazard class (DE): 1

- 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

1000 mL NTB		
Chemical:	<i>2-propanol</i>	CAS No.: 67-63-0
DNEL:	[inh] 500 mg/m ³ <small>DNEL = Derived No-Effect Level (for workers)</small>	
PNEC (fresh water):	140.9 mg/L <small>PNEC = Predicted No Effected Concentration</small>	
TRGS 900 (DE):	200 ppm / 500 mg/m ³ <small>E/e respirable</small>	
Short-term exposure factor:	2 (II), Y <small>skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded</small>	
SUVA(CH) MAK value:	200 ppm / 500 mg/m ³	
TRGS 903 (DE):	[Aceton B/b, U/b] 25 mg/L <small>B blood, U urine, a no limitation, b end of exposition or shift</small>	
NIOSH:	[TWA] 400 ppm / 980 mg/m ³	
NIOSH STEL:	500 ppm / 1225 mg/m ³ <small>[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period</small>	
OSHA:	[TWA] 400 ppm / 980 mg/m ³	
 Chemical: <i>guanidine hydrochloride</i>		CAS No.: 50-01-1
DNEL:	[inh] 3.5 mg/m ³ <small>DNEL = Derived No-Effect Level (for workers)</small>	
PNEC (fresh water):	- <small>PNEC = Predicted No Effected Concentration</small>	
NIOSH:	not listed <small>[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period</small>	
OSHA:	not listed	

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**
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.



Safety Data Sheet

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REF: 740595.1

Buffer NTB (1000 mL)

Page: 6/11

Printing date: 15.04.2026

Date of issue: 10.10.2023

Version: 2.2.3.6

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

1000 mL NTB

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:	25 °C
i) Flashing temperature:	no data available
j) Decomposition temperature:	no data available
k) pH value:	7-8
l) Kinematic viscosity:	no data available
m) Solubility in water:	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/cm ³
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. Note: Can form very reactive substances 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.

1000 mL NTB

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		



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Safety Data Sheet

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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

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
 TSCA Inventory: listed California Proposition 65 List: not listed
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-18111
 LD50 orl rat : 475-907 mg/kg
 LC50 ihl rat : 3181-7655 µg/m³/4H
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

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.

1000 mL NTB

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

Substance name: *guanidine hydrochloride* CAS-Nr.: 50-01-1
 PNEC (fresh water): -
 PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected
 LC50 leuciscus idus/96h : 1759 mg/L
 LC50 fish/96h : [4d] 690-1850; [48h] 1758-2420 mg/L
 EC50 daphnia/48h : 70.2 mg/L
 EC10 pseudomonas putita/16h : [72h] 11.8-33.5 mg/L
 Water hazard class (DE): 1 WGK No.: 0788
 Storage class (VCI): 12

12.2 Persistence and degradability

12.3 Bioaccumulative potential

1000 mL NTB
 Substance name: *2-propanol* CAS-Nr.: 67-63-0
 Dispersion coefficient (K_{ow}): 0,05



Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740595.1	Buffer NTB (1000 mL)	Page: 8/11
Printing date: 15.04.2026	Date of issue: 10.10.2023	Version: 2.2.3.6

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

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 mixture)

14.3 Class: 3

14.4 Packing group: III

Road transport ADR

Classification code:	F1	Tunnel restriction code:	D/E
Limited Quantity:	5 L		
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
 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
 Betriebsicherheitsverordnung (BetrSichV), Sept 2002



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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 2.2.3.6 and 2.2.2.2 following changes were applied: - 1 composition data corrected - 4 substance data corrected

16.2 List of H and P phrases

16.2.1 List of relevant H phrases

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

16.2.2 List of relevant P phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264W	Wash with water thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280sh	Wear protective gloves/eye protection.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.
P332+313	If skin irritation occurs: Get medical advice/attention.
P337+313	If eye irritation persists: Get medical advice/attention.
P370+378	In case of fire: Use suitable extinguisher media to extinguish.
P403+235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to regulated waste treatment.

16.3 Recommended restriction on use

Only for professional user.

Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!

Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!

An individual package of this product or test kit has a moderate hazardous potential.

16.4 Sources of key data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021

Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres

SUVA .CH, limit values in the air at work 2009, revised on 01/2009

Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)

Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG

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

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)



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Safety Data Sheet

according to Regulations REACH 1907/2006/EC

REF: 740595.1	Buffer NTB (1000 mL)	Page: 10/11
Printing date: 15.04.2026	Date of issue: 10.10.2023	Version: 2.2.3.6

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
- pH: pH value
- pimephales promelas: fisch, fathead minnow
- PNEC: Predicted No Effected Concentration
- PROC 15: Process category 'for laboratory use'



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Page: 11/11

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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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