Safety Data Sheet

SDS acc. Hazard Communication Standard

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

1.1 Product Identifier / Product Name

REF 740130.50
Product Name NucleoSpin RNA Stool (50)

3 x 200 U rDNase	UFI: 8SGV-63EY-520U-3WWU
1 x 13 mL RNase-free H_2O	
2 x 6 mL NucleoZOL	UFI: P0YV-730V-1200-WKNJ
1 x 7 mL Reaction Buffer for rDNase	
2 x 20 mL RST1	
1 x 50 mL RST2	UFI: Y01V-43QP-G20R-A6PR
1 x 6 mL RST3	UFI: D68V-N3Q1-7209-VVN5
1 x 30 mL RST3	UFI: D68V-N3Q1-7209-VVN5
1 x 35 mL RST4	UFI: D21V-N3E2-T207-YJ8T
1 x 12 mL RST5	
50 x Bead Tubes Type A	

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 and 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.
USA: American Association Of Poison Control Centers
Rockville, MD 20857. tel. 1-800-222-1222, **<https://www.poisonhelp.org>**
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(s) Identification

2.0 Classification of the complete Product

GHS02 GHS05 GHS06 GHS07 GHS08

Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H225	Flam. Liq. 2
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H314	Skin Corr. 1B
H331	Acute Tox. 3 inh.
H334	Resp. Sens. 1
H335	STOT SE 3
H341	Muta. 2
H351	Carc. 2
H373	STOT RE 2
H412	Aquatic Chronic 3

2.1 Classification of the substance or mixture

6 mL NucleoZOL

GHS05 GHS06 GHS08

Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H301	Acute Tox. 3 oral
H311	Acute Tox. 3 derm.
H314	Skin Corr. 1B
H331	Acute Tox. 3 inh.
H341	Muta. 2
H373	STOT RE 2
H412	Aquatic Chronic 3

50 mL RST2

GHS02 GHS07 GHS08

Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H225	Flam. Liq. 2
H319	Eye Irrit. 2
H335	STOT SE 3
H351	Carc. 2

6 mL RST3

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

30 mL RST3

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

35 mL RST4

GHS02

Signal Word	WARNING

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3

13 mL RNase-free H_2O

Signal Word	Do not need labelling as hazardous -

No Hazard Class

200 U rDNase

GHS08

Signal Word	DANGER

Hazard Identification	Hazard Classes/Categories
H334	Resp. Sens. 1

12 mL RST5

Signal Word	Do not need labelling as hazardous -

No Hazard Class

7 mL Reaction Buffer for rDNase

Signal Word	Do not need labelling as hazardous -

No Hazard Class

20 mL RST1

	Do not need labelling as hazardous
Signal Word	-
No Hazard Class	

Bead Tubes Type A

	Do not need labelling as hazardous
Signal Word	-
No Hazard Class	

List of H phrases: see section 16.2

2.2 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

According the implementation of GHS immediate packages only must be labelled with product identificator(s), GHS symbol(s), signal word, manufacturer name and phone number (OSHA's interpretation of HCS 2012). 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) / **until 100 mL** (Canada WHMIS 2015). This labelling exemption does not apply to U.S.A. This labelling exemption is NOT valid for sensibilizing substances.

6 mL NucleoZOL

GHS05 GHS06 GHS08

Signal Word: DANGER
H301, H311, H314, H331, H341
Toxic if swallowed.Toxic in contact with skin.Causes severe skin burns and eye damage.Toxic if inhaled.Suspected of causing genetic defects.
P201, P260sh, P280sh, P301+310, P303+361+353, P305+351+338, P405
Do not breathe dust/vapors.Obtain special instructions before use.Wear protective gloves/eye protection.IF SWALLOWED: Immediately call a POISON CENTER/ doctor.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.Store locked up.

50 mL RST2

GHS02 GHS07 GHS08

Signal Word: DANGER
H351
Suspected of causing cancer.
P201, P280sh
Obtain special instructions before use.Wear protective gloves/eye protection.

6 mL RST3

GHS02 GHS07

Signal Word: WARNING

30 mL RST3

GHS02 GHS07

Signal Word: WARNING

35 mL RST4

GHS02

Signal Word: WARNING

13 mL RNase-free H_2O

Do not need labelling as hazardous
Signal Word: -

200 U rDNase

GHS08

Signal Word: DANGER
H334
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
P261sh, P342+311
Avoid breathing dust/vapors.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

12 mL RST5

Do not need labelling as hazardous
Signal Word: -

7 mL Reaction Buffer for rDNase

Do not need labelling as hazardous
Signal Word: -

20 mL RST1

Do not need labelling as hazardous
Signal Word: -

Bead Tubes Type A

Do not need labelling as hazardous
Signal Word: -

Label elements of the complete product

GHS02 GHS05 GHS06 GHS08

Signal Word: DANGER
H301, H311, H314, H331, H334, H341, H351
Toxic if swallowed.Toxic in contact with skin.Causes severe skin burns and eye damage.Toxic if inhaled.May cause allergy or asthma symptoms or breathing difficulties if inhaled.Suspected of causing genetic defects.Suspected of causing cancer.
P201, P260sh, P280sh, P301+310, P303+361+353, P305+351+338, P405
Do not breathe dust/vapors.Obtain special instructions before use.Wear protective gloves/eye protection.IF SWALLOWED: Immediately call a POISON CENTER/ doctor.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.Store locked up.

2.3 Other Hazards

Possible Hazards from physicochemical Properties
Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. For guanidine thiocyanate CAS 593-84-0: The properties H314, H332 "Causes severe skin burns and eye damage. Harmful if inhaled." are not relevant, because the mixture solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

Information pertaining to particular Risks to Human and possible Symptoms
Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapors especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.
Cause severe after oral intake, inhalation of vapors, skin contact, impairments of health or can lead to death even when only ingested in small quantities. Cause after inhalation of vapors/dust, impairments of health when ingested in small quantities. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. Suspected of causing cancer.
Kit contains small amounts of enzymes, which may cause sensitization by direct and repeated contact.

Information pertaining to particular Risks to the Environment
Avoid contact of substance/mixture to environment.
PBT: not applicable
vPvB: not applicable

Possible endocrine disrupting effects
data not available

SECTION 3: Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

6 mL RST3

Substance name:	*guanidine hydrochloride*		
CAS No.:	50-01-1		
Substance rating:	H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2		
Chemical Formula:	CH_6ClN_3		
Synonyms (de):	Guanidiniumchlorid		
REACH Reg. No.:	01-2119977063-35-0005		
EC No.:	200-002-3	Indice No.:	607-148-00-0
Concentration:	24 - <36 %		
acc. GHS:	H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2		

Substance name:	*ethanol*		
CAS No.:	64-17-5 (denatured with 1% 2-butanone)		
Substance rating:	H225, Flam. Liq. 2		
Chemical Formula:	C_2H_6O; C_2H_5OH		
Synonyms (de):	Äthylalkohol, vergällter Spiritus		
REACH Reg. No.:	01-2119457610-43-xxxx		
EC No.:	200-578-6	Indice No.:	603-002-00-5
Concentration:	35 - <55 %		
acc. GHS:	H226, Flam. Liq. 3		

30 mL RST3

Substance name:	*guanidine hydrochloride*		
CAS No.:	50-01-1		
Substance rating:	H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2		
Chemical Formula:	CH_6ClN_3		
Synonyms (de):	Guanidiniumchlorid		
REACH Reg. No.:	01-2119977063-35-0005		
EC No.:	200-002-3	Indice No.:	607-148-00-0
Concentration:	24 - <36 %		
acc. GHS:	H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2		

Substance name:	*ethanol*		
CAS No.:	64-17-5 (denatured with 1% 2-butanone)		
Substance rating:	H225, Flam. Liq. 2		
Chemical Formula:	C_2H_6O; C_2H_5OH		
Synonyms (de):	Äthylalkohol, vergällter Spiritus		
REACH Reg. No.:	01-2119457610-43-xxxx		
EC No.:	200-578-6	Indice No.:	603-002-00-5
Concentration:	35 - <55 %		
acc. GHS:	H226, Flam. Liq. 3		

6 mL NucleoZOL

Substance name: *guanidinium thiocyanate*
CAS No.: 593-84-0

Substance rating: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1C, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3
Chemical Formula: $C_2H_6N_4S$
Synonyms (de): Guanidiniumrhodanid
REACH Reg. No.: 01-2120735072-65-0001
EC No.: 209-812-1 Indice No.: 615-004-00-3
Concentration: 30 - <45 %
acc. GHS: H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3

Substance name: *phenol*
CAS No.: 108-95-2

Substance rating: H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H314, Skin Corr. 1B, H331, Acute Tox. 3 inh., H341, Muta. 2, H373, STOT RE 2
Chemical Formula: C_6H_6O; C_6H_5-OH
Synonyms (de): Oxybenzol
REACH Reg. No.: 01-2119471329-32-xxxx
EC No.: 203-632-7 Indice No.: 604-001-00-2
Concentration: 30 - <60 %
acc. GHS: H301, Acute Tox. 3 oral, H311, Acute Tox. 3 derm., H314, Skin Corr. 1B, H331, Acute Tox. 3 inh., H341, Muta. 2, H373, STOT RE 2

200 U rDNase

Substance name: *rDNase*
CAS No.: 9003-98-9

Substance rating: H334, Resp. Sens. 1
Chemical Formula: Enzyme Comm. No. 3.1.21.1, origin: cloned
Synonyms (de): Deoxyribonucleodepolymerase
EC No.: 232-667-0
Concentration: 90 - <100 %
acc. GHS: H334, Resp. Sens. 1

12 mL RST5

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

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

20 mL RST1

Substance name: *chemicals/mixture until 2%*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.
Concentration: 1 - <2 %
acc. GHS: The criteria for classification are not fulfilled.

7 mL Reaction Buffer for rDNase

Substance name: *chemicals/mixture until 2%*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.
Concentration: 1 - <2 %
acc. GHS: The criteria for classification are not fulfilled.

50 mL RST2

Substance name: *1,4-dioxane*
CAS No.: 123-91-1

Substance rating: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H335, STOT SE 3, H351, Carc. 2
Chemical Formula: $C_4H_8O_2$
Synonyms (de): Glycolethylether, Ethylendioxid
REACH Reg. No.: 01-2119462837-26-0001
SVHC listed: **listed (08/07/2021) Cand. Lst. REACH Art59(10)**
EC No.: 204-661-8 Indice No.: 603-024-00-5
Concentration: 90 - <100 %
acc. GHS: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H335, STOT SE 3, H351, Carc. 2

Bead Tubes Type A

Substance name: *Ceramic particles*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.
Concentration: 95 - <100 %
acc. GHS: The criteria for classification are not fulfilled.

35 mL RST4

Substance name: *guanidinium thiocyanate*
CAS No.: 593-84-0

Substance rating: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1C, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3
Chemical Formula: $C_2H_6N_4S$
Synonyms (de): Guanidiniumrhodanid
REACH Reg. No.: 01-2120735072-65-0001
EC No.: 209-812-1 Indice No.: 615-004-00-3
Concentration: 5 - <10 %
acc. GHS: The criteria for classification are not fulfilled.

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone)
Substance rating: H225, Flam. Liq. 2
Chemical Formula: C_2H_6O; C_2H_5OH
Synonyms (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6 Indice No.: 603-002-00-5
Concentration: 35 - <55 %
acc. GHS: H226, Flam. Liq. 3

13 mL RNase-free H_2O

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

Substance rating: No criteria for classification or naming of chemical is not required.
Chemical Formula: H_2O
REACH Reg. No.: exempt, Annex IV
EC No.: 231-791-2
Concentration: 90 - <100 %
acc. 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 Hazard and Precaution 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. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor. Take to a doctor, in a raised position if there are breathing difficulties.

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 Vapors

After inhalation of foam or vapor fresh air should be inhaled. Keep airways free. If vomiting and if insensible place patient in recovery position and keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function.

4.1.4 After ORAL Intake

After oral intake lots of water 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 neutralize 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. Rapid penetration and destruction of the skin. Especially in the heated form.
Causes severe skin burns and eye damage.
CMR Effekte: Suspected of causing genetic defects. Suspected of causing cancer.

4.3 Indication of any immediate Medical Attention and Special Treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive substance. Further treatment must to be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTREES ensure that the patient inhales oxygen. TOXIFICATION: Treat symptomatically. Secure the breathing, heart and circulatory function. Remove the substance quickly from the body. Mechanically induce vomiting or ensure the patient eats medicinal charcoal compressed tablets or drinks aluminium oxide drug suspensions. In order to ensure rapid passage through the colon (administer 2 tablespoons of dissolved Glauber's salt). Alleviation of pain, if necessary sedation. Shock treatment. Administer a prophylaxis to counter pulmonary oedema.
Inform patient respectively further measures and the possibility of long-term damages. ---

SECTION 5: Fire-Fighting Measures

5.1 Extinguishable 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

data not available

5.2 Special Hazards arising from the Substance or Mixture

DANGER: Highly flammable. Forms explosive vapor-air mixtures. Formation of hazardous and caustic vapor-air mixtures possible.

5.3 Advice for Firefighters

No, for listed product.Product package burns like paper or plastic. 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 Procedure

Do not breathe vapors. Wear suitable protective gloves (see 8.2.2). Wear eye protection, respectively face 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

Avoid contact of substance/mixture to environment.

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 hazards. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into sewer.

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. Use only in well-ventilated working areas.

7.2 Conditions for Safe Storage, including any Incompatibilities

The original product package allows a safe storage. Products containing also toxic substances should be kept locked up. Storage class (German chemical industry): see chapter 12.1

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

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage, and store in a well-ventilated place at max. 77°F (25 °C), away or preferably separate from substances with which a hazardous reaction could take place, so that they are not immediately accessible to outside parties. Use inbreakable container for transport of glass bottles.

7.3 Specific End Use(s)

Product for analytical use.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

6 mL RST3

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
DNEL: [inh] 3.5 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water) : -
PNEC = Predicted No Effected Concentration
NIOSH: not listed
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
OSHA: not listed

Chemical: *ethanol* CAS No.: 64-17-5
DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water) : 0.96 mg/L
PNEC = Predicted No Effected Concentration
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 RST3

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
DNEL: [inh] 3.5 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water) : -
PNEC = Predicted No Effected Concentration
NIOSH: not listed

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

OSHA: not listed

Chemical: *ethanol* CAS No.: 64-17-5
DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effected Concentration
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

6 mL NucleoZOL
Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
DNEL: [inh] 1092 µg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 42.4 µg/L
PNEC = Predicted No Effected Concentration
NIOSH: not listed
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
OSHA: not listed

Chemical: *phenol* CAS No.: 108-95-2
PNEC (fresh water): 0.0077 mg/L
PNEC = Predicted No Effected Concentration
NIOSH: [skin]TWA 5 ppm / 19 mg/m ^{3} ; C 15.6 ppm / 60 $_{15min}$ mg/m³
NIOSH STEL: 15.6 ppm / 60 $_{15\ min}$ mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
OSHA: [skin] TWA 5 ppm / 19 mg/m³
EU value: 2 ppm / 7.8 mg/m³

200 U rDNase
Chemical: *rDNase* CAS No.: 9003-98-9

12 mL RST5
Chemical: *chemicals/mixture until 1%* CAS No.: -

20 mL RST1
Chemical: *chemicals/mixture until 2%* CAS No.: -

7 mL Reaction Buffer for rDNase
Chemical: *chemicals/mixture until 2%* CAS No.: -

50 mL RST2
Chemical: *1,4-dioxane* CAS No.: 123-91-1
DNEL: 73 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 10 mg/L
PNEC = Predicted No Effected Concentration
NIOSH: Occupational Carcinogen List Yes; TWA $_{30min}$ 1 ppm / 3.6 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period
OSHA: [skin] TWA 100 ppm / 360 mg/m³
EU value: 20 ppm / 73 mg/m³

Bead Tubes Type A
Chemical: *Ceramic particles* CAS No.: -

35 mL RST4
Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
DNEL: [inh] 1092 µg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 42.4 µg/L
PNEC = Predicted No Effected Concentration
NIOSH: not listed
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

Chemical: *ethanol* CAS No.: 64-17-5
DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water) : 0.96 mg/L
PNEC = Predicted No Effected Concentration
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

13 mL RNase-free H_2O
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 vapor/dust respirator, class A/AX. No additional recommendations.

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

8.2.3 Eye / Face Protection
Yes, Splash Goggles or Face Protection.

8.2.4 Skin Protection
Recommended to avoid clothing damage, and to avoid contamination with these hazards.

8.2.5 Hygiene Measures
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
data not 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

6 mL RST3

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	26 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	5-7
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.0 g/cm³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

30 mL RST3

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	26 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	5-7
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.0 g/cm³
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

6 mL NucleoZOL

a) State of aggregation:	liquid
b) Color:	blue
c) Odor:	aromatic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	>0.46 $_{25°C}$ hPa
p) Specific Gravity:	data not available
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

200 U rDNase

a) State of aggregation:	solid (lyophilized)
b) Color:	white
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

12 mL RST5

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available

e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	7-8
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.00 g/cm³
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

20 mL RST1

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	7.5-8.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.02 g/cm³
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

7 mL Reaction Buffer for rDNase

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.01 g/cm³
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

50 mL RST2

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	12 °C
e) Boiling Point:	101.5 °C
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	1.9-22.5 Vol%
h) Flash Point:	11 °C

i) Autoignition Temperature:	375 °C
j) Decomposition Temperature:	data not available
k) pH Value:	6-8
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	< 2 %
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	41 hPa
p) Specific Gravity:	1.01-1.03 g/cm³
q) Relative Vapor Density $_{(air=1)}$:	3.04
r) Particle Size:	data not available

Bead Tubes Type A

a) State of aggregation:	solid
b) Color:	white
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	0.6-0.8 mm

35 mL RST4

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	23 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5 - 7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

13 mL RNase-free H_2O

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6-8
l) Kinematic Viscosity:	data not available

m) Soluble in Water:	data not available
n) Partition Coefficient $_{(o/w)}$:	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.0 g/cm³
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

9.2 Further Information

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.
Properties relevant to substance groups
Substances are highly volatile and form flammable gas-air mixtures. Substances are highly corrosive.

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

Can react violently with organic material. Can form very reactive substances with oxidizing agents. Possibility: &H:EUH031& No further data available.

10.4 Conditions to avoid

No more required.

10.5 Incompatible Materials

10.6 Hazardous Decomposition Products

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

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

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

6 mL RST3

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
TSCA Inventory: listed California Prop. 65 List: not listed
Canada CEPA 1999: DSL yes
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.

Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Prop. 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Canada CEPA 1999: DSL yes
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

30 mL RST3
Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
TSCA Inventory: listed California Prop. 65 List: not listed
Canada CEPA 1999: DSL yes
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.
Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Prop. 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Canada CEPA 1999: DSL yes
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

6 mL NucleoZOL
Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
TSCA Inventory: listed California Prop. 65 List: not listed
Canada CEPA 1999: DSL yes
LD50 orl rat : 593 mg/kg
LC50 ihl rat : 5,319 mg/L/4H
Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.
Chemical: *phenol* CAS No.: 108-95-2
TSCA Inventory: listed
ACGIH: 19 ppm
Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, liver, kidneys
Symptoms: irritation eyes, nose, throat; anorexia, weight loss; lassitude (weakness, exhaustion), muscle ache, pain; dark urine; cyanosis; liver, kidney damage
LD50 orl rat : 317 mg/kg
LC_Low orl hmn : 140 mg/kg
LC50 ihl rat : 0,51 mg/L
LD50 orl mus : 270 mg/kg
Acute Effects: Cause severe after oral intake, inhalation of vapors, skin contact, impairments of health or can lead to death even when only ingested in small quantities.
Chronic Effects: May cause damage to organs through prolonged or repeated exposure.
Carcinogenic Effects: Suspected of causing genetic defects.
EU carcinogen: Germ Cell Mutagenicity cat. 2

200 U rDNase
Chemical: *rDNase* CAS No.: 9003-98-9
TSCA Inventory: listed
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.

12 mL RST5
Chemical: *chemicals/mixture until 1%* CAS No.: -
TSCA Inventory: all listed, <1%

20 mL RST1
Chemical: *chemicals/mixture until 2%* CAS No.: -
TSCA Inventory: all listed, <2%

7 mL Reaction Buffer for rDNase
Chemical: *chemicals/mixture until 2%* CAS No.: -
TSCA Inventory: all listed, <2%

50 mL RST2
Chemical: *1,4-dioxane* CAS No.: 123-91-1
TSCA Inventory: listed California Prop. 65 List: listed cancer
Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, liver, kidneys; [in animals: lung, liver & nasal cavity tumors]
Symptoms: irritation eyes, skin, nose, throat; drowsiness, headache; nausea, vomiting; liver damage; kidney failure; [potential occupational carcinogen]
Canada CEPA 1999: DSL Yes
LD50 orl rat : 5150 mg/kg
LC50 ihl rat : 155 mg/L
Acute Effects: Cause after inhalation of vapors/dust, impairments of health when ingested in small quantities.
Carcinogenic Effects: Suspected of causing cancer.
EU carcinogen: Carcinogenicity cat. 2

Bead Tubes Type A
Chemical: *Ceramic particles* CAS No.: -
TSCA Inventory: not applicable

35 mL RST4
Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
TSCA Inventory: listed California Prop. 65 List: not listed
Canada CEPA 1999: DSL yes
LD50 orl rat : 593 mg/kg
LC50 ihl rat : 5,319 mg/L/4H

Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Prop. 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
Canada CEPA 1999: DSL yes
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

13 mL RNase-free H_2O
Chemical: *water* CAS No.: 7732-18-5
TSCA Inventory: listed
LD50 orl rat : > 90000 mg/kg

11.2 Other Hazards

Possible endocrine disrupting effects
data not available

Other Information
no additional data available

SECTION 12: Ecological Information

12.1 Toxicity

Following information is valid for pure chemicals.

6 mL RST3
Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
PNEC (fresh water) : -
PNEC = Predicted No Effected Concentration
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

Chemical: *ethanol* CAS No.: 64-17-5

PNEC (fresh water) : 0.96 mg/L
PNEC = Predicted No Effected Concentration

LC50 daphnia magna/48h : >100 g/L
LC50 pimephales promelas/96h : 13.4-15.1 g/L
LC50 leuciscus idus/96h : [48h] 8.14 g/L
LC50 fish/96h : 13 g/L
EC50 daphnia/48h : 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L
EC10 pseudomonas putita/16h : [EC5] 6500 mg/L
Partition Coefficient (o/w) : -0,31

30 mL RST3

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1

PNEC (fresh water) : -
PNEC = Predicted No Effected Concentration

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

Chemical: *ethanol* CAS No.: 64-17-5

PNEC (fresh water) : 0.96 mg/L
PNEC = Predicted No Effected Concentration

LC50 daphnia magna/48h : >100 g/L
LC50 pimephales promelas/96h : 13.4-15.1 g/L
LC50 leuciscus idus/96h : [48h] 8.14 g/L
LC50 fish/96h : 13 g/L
EC50 daphnia/48h : 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L
EC10 pseudomonas putita/16h : [EC5] 6500 mg/L
Partition Coefficient (o/w) : -0,31

6 mL NucleoZOL

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0

Harmful to aquatic life with long lasting effects. Avoid contact of chemical/mixture to environment.
Environmental hazards must not be labelled with P phrases until 125 mL (EU-CLP 1272/2008 Annex I - 1.5.2).

PNEC (fresh water) : 42.4 µg/L
PNEC = Predicted No Effected Concentration

LC50 fish/96h : [4d] 89.1 mg/L
EC50 daphnia/48h : 42.4 mg/L
IC50 scenedesmus quadricauda/72h : 130 mg/L
EC10 pseudomonas putita/16h : [10d] 200 mg/L
Partition Coefficient (o/w) : -1,11 pH 5.1

Chemical: *phenol* CAS No.: 108-95-2

Avoid contact of chemical/mixture to environment.

PNEC (fresh water) : 0.0077 mg/L
PNEC = Predicted No Effected Concentration

LC50 daphnia magna/48h : EC10 16d : 0,46 mg/L
LC50 fish/96h : 8.9 mg/L
EC50 daphnia/48h : 4.24-10.7/ 10.2-15.5 mg/L
EC50 pseudokirchneriella subcapitata/72h : EC50 96h : 46.42 mg/L
IC50 scenedesmus quadricauda/72h : EC50: 187-279 mg/L
Partition Coefficient (o/w) : 1,47

200 U rDNase

Chemical: *rDNase* CAS No.: 9003-98-9

12 mL RST5

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

20 mL RST1

Chemical: *chemicals/mixture until 2%* CAS No.: -

7 mL Reaction Buffer for rDNase
Chemical: *chemicals/mixture until 2%* CAS No.: -

50 mL RST2
Chemical: *1,4-dioxane* CAS No.: 123-91-1
PNEC (fresh water) : 10 mg/L
PNEC = Predicted No Effected Concentration
Bio Toxicity: 1/2.1/2.6
LC50 fish/96h : [21d] 100 mg/L
EC50 daphnia/48h : 1 g/L
IC50 scenedesmus quadricauda/72h : [72h] 1 g/L
Partition Coefficient (o/w) : -0,42

Bead Tubes Type A
Chemical: *Ceramic particles* CAS No.: -

35 mL RST4
Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
PNEC (fresh water) : 42.4 µg/L
PNEC = Predicted No Effected Concentration
LC50 fish/96h : [4d] 89.1 mg/L
EC50 daphnia/48h : 42.4 mg/L
IC50 scenedesmus quadricauda/72h : 130 mg/L
EC10 pseudomonas putita/16h : [10d] 200 mg/L
Partition Coefficient (o/w) : -1,11 pH 5.1

Chemical: *ethanol* CAS No.: 64-17-5
PNEC (fresh water) : 0.96 mg/L
PNEC = Predicted No Effected Concentration
LC50 daphnia magna/48h : >100 g/L
LC50 pimephales promelas/96h : 13.4-15.1 g/L
LC50 leuciscus idus/96h : [48h] 8.14 g/L
LC50 fish/96h : 13 g/L
EC50 daphnia/48h : 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h : [7d] 5000 mg/L
EC10 pseudomonas putita/16h : [EC5] 6500 mg/L
Partition Coefficient (o/w) : -0,31

13 mL RNase-free H_2O
Chemical: *water* CAS No.: 7732-18-5

12.2 Persistence and Degradability
not necessary

12.3 Bioaccumulative Potential
not necessary

12.4 Mobility in Soil
not necessary

12.5 Results of PBT and vPvB Assessment
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
data not available

12.7 Other Adverse Effects
no additional data available

SECTION 13: Disposal Considerations

Do not collect in acidic waste. May form toxic gases.
Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (RCRA Code D002/D003, EU waste code number 16 05 06). Close container tightly.

13.1 Waste Treatment Methods

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.
Dispose of contents/container to regulated waste treatment.

SECTION 14: Transport Information

14.1. UN/NA: 1992 **14.2. Proper Shipping Name: Flammable liquid, toxic, n.o.s. (1,4-dioxane, phenol solution)**
14.3. Hazard Class: 3 Sub-Risks: **6.1 _ 14.4. Packing Group: II**

Transportation by Road			
Classification code:	FT1		
Limited Quantity:	1 L	Tunnel restriction code:	E
Excepted Quantity:	E 2	Special instructions:	274
Air Transportation			
Limited Quantity:	LQ 0		
Excepted Quantity:	E 2		
PAX:	352	max. weight PAX:	1 L
CAO:	364	max. weight CAO:	60 L
Maritime Transport			
EmS:	F-E, S-D	Storage Category: B	

14.5 Environmental Hazards

none, contains only small quantities of hazardous substances, contains only small amounts of these substances

14.6 Special Precautions for User

not necessary

14.7 Carriage of bulk cargo 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

U.S. Federal Regulations
OSHA "A Guide to The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"
https://www.osha.gov/dsg/hazcom/ghs.html
29 CFR 1910.1200 Hazard communication.
NIOSH Pocket Guide to Chemical Hazards
NIOSH Workplace Safety & Health Topics
TSCA Inventory
U.S. State Regulations
California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986
Canada
Canada CEPA 1999 - Domestic Substances List (DSL), List of Toxic Substances (Schedule 1)

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

15.2 Chemical Safety Assessment

not necessary for these small amounts

SECTION 16: Other Information

16.1 Changes compared to the last version

Between versions 2.2.13.11 and 2.2.2.2 following changes were applied: - 11 composition data corrected - 9 substance data corrected

16.2 List of Hazard and Precaution Phrases

16.2.1 List of relevant H Phrases

H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

16.2.2 List of relevant P Phrases

P201	Obtain special instructions before use.
P260sh	Do not breathe dust/vapors.
P280sh	Wear protective gloves/eye protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
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.
P405	Store locked up.

16.3 Recommended Restriction on Use

Only for Professional User.
Look about employee restrictions for young people!
Look about employee restrictions for pregnant women and nursing women!
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
Directive 2004/37/EC on the protection of workers from the risk of carcinogens or mutagens at workSUVA .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)
TRGS 905, German rules of technology for carcinogenic and mutagenic substances, as of March 18, 2016
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)

revisions/updates

Reason for revision: *2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary*
2014-04 adjustment according Regulation 487/2013/EU
2016-03 adjustment according Regulation 1221/2015/EU
2017–08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU
2017-11 adjustment according the ECHA registration dossier
2022-11 adjustment according Regulation 878/2020/EU

16.5 Further Information

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16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive
COD:	chemical oxigen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage
DNEL:	Derived No-Effect Level (for workers)
derm:	dermal
dog:	dog
EC10:	Concentration causing a toxic effect in 10% of the test organisms
EC:	European Community
EC-Nr:	Substance number of the EC substance inventory
EmS:	Guide to accident management measures on ships
EU:	European Union
fish:	fish (not 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:	intraperitonaeal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	letale concentration 50%
LD50:	letale dosis 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	fish, rainbow trout
orl:	oral
OSHA:	Occupational Safety and Health Administration
PAX:	transport on passenger planes allowed
PBT:	persistent, bioaccumulating, toxic substance
pH:	pH value
pimephales promelas:	fish, fathead minnow
PNEC:	Predicted No Effected Concentration
PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACh:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	rRegistration number
Repr:	harmful to reproduction
Resp:	respiratory
scu:	sub cutan
RIP:	REACH Implementations Projects
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.