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 740971.10
Product Name NucleoSpin miRNA (10)

1 x 5 mL ML	UFI: 7U0V-43AV-V20R-0HHM
1 x 5 mL MP	
1 x 13 mL RNase-free H_2O	
1 x 13 mL MX	UFI: Y01V-43QP-G20R-A6PR
1 x 6 mL MW2	
1 x 10 mL MW1	UFI: D21V-N3E2-T207-YJ8T
1 x 10 mL MDB	UFI: M48V-530M-W20T-7J23
1 x 7 mL Reaction Buffer for rDNase	
1 x 200 U, Size C, rDNase	UFI: 8SGV-63EY-520U-3WWU

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 GHS07 GHS08 GHS09

Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H225	Flam. Liq. 2
H302	Acute Tox. 4 oral
H314	Skin Corr. 1B
H334	Resp. Sens. 1
H335	STOT SE 3
H351	Carc. 2
H411	Aquatic Chronic 2

2.1 Classification of the substance or mixture

13 mL MX

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

10 mL MW1

GHS02

Signal Word WARNING

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

5 mL ML

GHS07

Signal Word WARNING

Hazard Identification	Hazard Classes/Categories
H302	Acute Tox. 4 oral
H412	Aquatic Chronic 3

10 mL MDB

GHS02

Signal Word WARNING

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

5 mL MP

GHS05 GHS07 GHS09

Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H314	Skin Corr. 1B
H335	STOT SE 3
H411	Aquatic Chronic 2

13 mL RNase-free H $_2$ O

Do not need labelling as hazardous

Signal Word -

No Hazard Class

200 U, Size C, rDNase

GHS08

Signal Word DANGER

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

6 mL MW2

Do not need labelling as hazardous

Signal Word -

No Hazard Class

7 mL Reaction Buffer for rDNase

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.

13 mL MX

GHS02 GHS07 GHS08

Signal Word: DANGER

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

10 mL MW1

GHS02

Signal Word: WARNING

5 mL ML

GHS07

Signal Word: WARNING

10 mL MDB

GHS02

Signal Word: WARNING

5 mL MP

GHS05 GHS07 GHS09

Signal Word: DANGER
H314
Causes severe skin burns and eye damage.
P260sh, P280sh, P303+361+353, P305+351+338, P310
Do not breathe dust/vapors.Immediately call a POISON CENTER/doctor.Wear protective gloves/eye protection.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.

13 mL RNase-free H_2O
Do not need labelling as hazardous
Signal Word: -

200 U, Size C, 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.

6 mL MW2
Do not need labelling as hazardous

Signal Word: -

7 mL Reaction Buffer for rDNase

Do not need labelling as hazardous
Signal Word: -

Label elements of the complete product

GHS02 GHS05 GHS08 GHS09

Signal Word: DANGER
H314, H334, H351
Causes severe skin burns and eye damage.May cause allergy or asthma symptoms or breathing difficulties if inhaled.Suspected of causing cancer.
P201, P260sh, P280sh, P303+361+353, P305+351+338, P310
Do not breathe dust/vapors.Immediately call a POISON CENTER/doctor.Obtain special instructions before use.Wear protective gloves/eye protection.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.

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. The property H314 "Causes severe skin burns and eye damage." of some salts is not applicable, because the mixture is buffered to pH >3-4 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.). 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 after oral intake, 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 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

200 U, Size C, 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

5 mL MP

Substance name: *zinc chloride*
CAS No.: 7646-85-7

Substance rating: H302, Acute Tox. 4 oral, H314, Skin Corr. 1B, H318, Eye Dam. 1, H335, STOT SE 3, H400, Aquatic Acute 1, H410, Aquatic Chronic 1
Chemical Formula: $ZnCl_2$
Synonyms (de): Chlorzink
REACH Reg. No.: 01-2119472431-44-xxxx
EC No.: 231-592-0 Indice No.: 030-003-00-2
Concentration: 5 - <10 % Correlation Factor: x 0.48 (= %Zn)
The classification refers to the weight percentage of the metal (according to CLP regulation 2008/1272/EG Annex VI, 1.1.3.2 Note 1)
acc. GHS: H314, Skin Corr. 1B, H318, Eye Dam. 1, H335, STOT SE 3, H411, Aquatic Chronic 2

6 mL MW2

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.

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.

13 mL MX

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

10 mL MDB

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: 5 - <20 %
acc. GHS: H226, Flam. Liq. 3

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.

5 mL ML

Substance name: *2-mercaptoethanol*
CAS No.: 60-24-2

Substance rating: H301, Acute Tox. 3 oral, H310, Acute Tox. 1 derm., H315, Skin Irrit. 2, H317, Skin Sens. 1, H318, Eye Dam. 1, H330, Acute Tox. 1 inh., H410, Aquatic Chronic 1
Chemical Formula: C_2H_6OS
Synonyms (de): ß-ME, BME, Hydroxyethylmercaptan,Thioglycol
REACH Reg. No.: 01-2119517582-41-xxxx
EC No.: 200-464-6
Concentration: 0,1 - <1 %
acc. GHS: The criteria for classification are not fulfilled.

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: 45 - <60 %
acc. GHS: H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3

10 mL MW1

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 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. 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. 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. 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

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

5 mL MP
Chemical: *zinc chloride* CAS No.: 7646-85-7
DNEL: 1.3 $_{Zn, inh}$ mg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC $_{(fresh\ water)}$: 0.0206 mg/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

6 mL MW2
Chemical: *chemicals/mixture until 1%* CAS No.: -

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

13 mL MX
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

10 mL MDB
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

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

5 mL ML
Chemical: *2-mercaptoethanol* CAS No.: 60-24-2
DNEL: [derm] 0.6 mg/kg
DNEL = Derived No-Effect Level (for workers)
PNEC (fresh water): 0.0004 mg/L
PNEC = Predicted No Effected Concentration

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

10 mL MW1
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

200 U, Size C, 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

5 mL MP

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	acetic
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:	4-4.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	0-100 %
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

6 mL MW2

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

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

13 mL MX

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

10 mL MDB

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:	55 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.7-7.2
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

5 mL ML

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	sulfuric
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:	1.05 g/cm³
q) Relative Vapor Density $_{(air=1)}$:	data not available
r) Particle Size:	data not available

10 mL MW1

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.

200 U, Size C, 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.

5 mL MP
Chemical: *zinc chloride* CAS No.: 7646-85-7
TSCA Inventory: listed California Prop. 65 List: not listed
Canada CEPA 1999: DSL Yes
LD50 $_{orl\ rat}$: 350 mg/kg
LD50 $_{orl\ mus}$: 329 mg/kg
Acute Effects: Cause after inhalation of vapors/dust, impairments of health when ingested in small quantities.

6 mL MW2
Chemical: *chemicals/mixture until 1%* CAS No.: -
TSCA Inventory: all listed, <1%

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

13 mL MX
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

10 mL MDB
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

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

5 mL ML
Chemical: *2-mercaptoethanol* CAS No.: 60-24-2
TSCA Inventory: listed
Canada CEPA 1999: DSL yes
LD50 orl rat : 98-162 mg/kg
LC50 ihl rat : 2 mg/L/4H

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.

10 mL MW1
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 $_2$O

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.

200 U, Size C, rDNase

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

5 mL MP

Chemical: *zinc chloride* CAS No.: 7646-85-7

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

PNEC (fresh water) :	0.0206 mg/L

PNEC = Predicted No Effected Concentration

LC50 fish/96h :	38 mg/L
EC50 daphnia/48h :	1.24 mg/L
EC50 pseudokirchneriella subcapitata/72h :	0.05 mg/L

6 mL MW2

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

7 mL Reaction Buffer for rDNase

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

13 mL MX

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

10 mL MDB

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

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

5 mL ML
Chemical: *2-mercaptoethanol* CAS No.: 60-24-2
PNEC $_{(fresh\ water)}$: 0.0004 mg/L
PNEC = Predicted No Effected Concentration
LC50 $_{leuciscus\ idus/96h}$: 46-100 mg/L
EC50 $_{daphnia/48h}$: 1.52 mg/L

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

10 mL MW1
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

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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).

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.

SECTION 14: Transport Information

UN/NA 1993 Class 3 II, **Excepted Quantities** (≤30 mL/∑≤500 mL) = ADR/ IATA E2
or

14.1. UN/NA: 1993 **14.2. Proper Shipping Name: Flammable liquid, n.o.s. (1,4-dioxane, ethanol mixture)**
14.3. Hazard Class: 3 **14.4. Packing Group: II**

Transportation by Road

Classification code:	F1		
Limited Quantity:	1 L	Tunnel restriction code:	E
Excepted Quantity:	E 2	Special instructions:	640C

Air Transportation

Limited Quantity:	LQ 4		
Excepted Quantity:	E 2		
PAX:	353	max. weight PAX:	5 L
CAO:	364	max. weight CAO:	60 L

Maritime Transport

EmS:	F-E, S-E	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 2.2.9.8 and 2.2.2.2 following changes were applied: - 7 composition data corrected - 6 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.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.
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.
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.
P310	Immediately call a POISON CENTER/doctor.

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.