

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740840.10

NucleoSpin DNA Forensic (10)

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Printing Date: 04.04.2023

Date of Issue: 03.03.2023

Version: 2.2.8.10

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

1.1 Product Identifier / Product Name

REF	740840.10	
Product Name	NucleoSpin DNA Forensic (10)	
2 x 120 µL Liquid Proteinase K		UFI: TTWV-43C9-R202-NTGN
1 x 14 mg TCEP		UFI: SUNV-235D-8202-429N
1 x 13 mL FOL		
1 x 6 mL FOW2		
1 x 13 mL FOE		
1 x 7 mL FOB		UFI: YPKW-432S-520A-DS3A
1 x 20 mL FOW1		UFI: K3PT-43VY-1207-HMA8

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
Valenciennner 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

GHS07

GHS08

Signal Word

DANGER

Hazard Identification

Hazard Classes/Categories

H225	Flam. Liq. 2
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H336	STOT SE 3
H413	Aquatic Chronic 4

2.1 Classification of the substance or mixture

120 µL Liquid Proteinase K


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GHS08

Signal Word

DANGER

Hazard Identification

Hazard Classes/Categories

H334

Resp. Sens. 1

13 mL FOL

Signal Word

Do not need labelling as hazardous

No Hazard Class

14 mg TCEP



GHS07

Signal Word

WARNING

Hazard Identification

Hazard Classes/Categories

H315

Skin Irrit. 2

H319

Eye Irrit. 2

7 mL FOB



GHS02



GHS07

Signal Word

DANGER

Hazard Identification

Hazard Classes/Categories

H225

Flam. Liq. 2

H319

Eye Irrit. 2

H336

STOT SE 3

20 mL FOW1



GHS02

Signal Word

WARNING

Hazard Identification

Hazard Classes/Categories

H226

Flam. Liq. 3

H413

Aquatic Chronic 4

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6 mL FOW2

Signal Word Do not need labelling as hazardous
-

No Hazard Class

13 mL FOE

Signal Word Do not need labelling as hazardous
-

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 identifier(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.

120 µL Liquid Proteinase K



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.

13 mL FOL

Do not need labelling as hazardous

Signal Word: -

14 mg TCEP



GHS07

Signal Word: WARNING

7 mL FOB



GHS02



GHS07

Signal Word: DANGER

20 mL FOW1



GHS02

Signal Word: WARNING

6 mL FOW2

Do not need labelling as hazardous

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Signal Word: -

13 mL FOE

Do not need labelling as hazardous

Signal Word: -

Label elements of the complete product



GHS02



GHS07



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.

2.3 Other Hazards

Possible Hazards from physicochemical Properties

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

Cause after impairments of health when ingested in small quantities. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Kit contains small amounts of enzymes, which may cause sensitization by direct and repeated contact.

Information pertaining to particular Risks to the 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

14 mg TCEP

Substance name: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)*

CAS No.: 51805-45-9

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2

Chemical Formula: $C_9H_{16}ClO_6P$

Synonyms (de): TCEP•HCl

Concentration: 70 - <100 %

acc. GHS: H315, Skin Irrit. 2, H319, Eye Irrit. 2

Substance name: *inorganic salts, declaration not necessary*

CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.

Synonyms (de): kein Gefahrstoff

Concentration: 25 - <50 %

acc. GHS: The criteria for classification are not fulfilled.

13 mL FOL

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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: CH₆ClN₃
Synonyms (de): Guanidiniumchlorid
REACH Reg. No.: 01-2119977063-35-0005
EC No.: 200-002-3
Concentration: 3 - <10 %
acc. GHS: The criteria for classification are not fulfilled.

Indice No.: 607-148-00-0

7 mL FOB

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: C₂H₆N₄S
Synonyms (de): Guanidiniumrhodanid
REACH Reg. No.: 01-2120735072-65-0001
EC No.: 209-812-1
Concentration: 10 - <15 %
acc. GHS: The criteria for classification are not fulfilled.

Indice No.: 615-004-00-3

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.

Substance name: *2-propanol*
CAS No.: 67-63-0

Substance rating: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3
Chemical Formula: C₃H₈O
Synonyms (de): Isopropanol, IPA, Propan-2-ol
REACH Reg. No.: 01-2119457558-25-XXXX
EC No.: 200-661-7
Concentration: 50 - <65 %
acc. GHS: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, STOT SE 3

Indice No.: 603-117-00-0

Substance name: *Tergitol 15-S-7*
CAS No.: 84133-50-6

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1, H332, Acute Tox. 4 inh.
Chemical Formula: C₁₂-14H₂₅-29O[CH₂CH₂O]_xH
EC No.: 617-534-0
Concentration: 0,1 - <1 %
acc. GHS: The criteria for classification are not fulfilled.

6 mL FOW2

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.

13 mL FOE

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.



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20 mL FOW1

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: 15 - <30 %

acc. GHS: H413, Aquatic Chronic 4

Substance name: *Tergitol 15-S-7*

CAS No.: 84133-50-6

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1, H332, Acute Tox. 4 inh.

Chemical Formula: $C_{12}H_{25}O_2[CH_2CH_2O]_xH$

EC No.: 617-534-0

Concentration: 0,1 - <1 %

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

120 µL Liquid Proteinase K

Substance name: *glycerole*

CAS No.: 56-81-5

Substance rating: No criteria for classification or naming of chemical is not required.

Chemical Formula: $C_3H_8O_3$

Synonyms (de): 1,2,3-Propantriol

REACH Reg. No.: 01-2119471987-18-xxxx

EC No.: 200-289-5

Indice No.: n/a

Concentration: 50 - <80 %

acc. GHS: The criteria for classification are not fulfilled.

Substance name: *proteinase K, liquid*

CAS No.: 39450-01-6

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1

Chemical Formula: Enzyme Comm. No. 3.4.21.64, origin: tritirachium album

Synonyms (de): Endopeptidase K

EC No.: 254-457-8

Indice No.: 647-014-00-9

Concentration: 1 - <3 %

acc. GHS: H334, Resp. Sens. 1

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. Take to a doctor, in a raised position if there are breathing difficulties.



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- 4.1.1 After SKIN Contact**
Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
- 4.1.2 After EYE Contact**
After contact with the eyes rinse thoroughly under running water with the eyelid wide open with eye washing bottle, eye douche or running water (protect intact eye).
- 4.1.3 After INHALATION of Vapors**
After inhalation of foam or vapor fresh air should be inhaled. Keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function.
- 4.1.4 After ORAL Intake**
After oral intake lots of water should be drunk after it has been ingested.
- 4.2 Most important Symptoms and Effects, both acute and delayed**
May cause allergy or asthma symptoms or breathing difficulties if inhaled. Chronic effects: Repeated contact, even in small amounts, can lead to sensitization.
- 4.3 Indication of any immediate Medical Attention and Special Treatment needed**
Inform patient respectively further measures and the possibility of long-term damages. ---

SECTION 5: 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.
- 5.4 Additional Information**

SECTION 6: Accidental Release Measures

- 6.1 Personal Precautions, Protective Equipment and Emergency Procedure**
Do not breathe vapors. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.
- 6.2 Environmental Precautions**
PBT: not applicable
vPvB: not applicable
- 6.3 Methods and Material for Containment and Cleaning up**
Bind any escaping liquid with inert absorbent.
And dispose in accordance to local regulations for the disposal of 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**

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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.

7.3 Specific End Use(s)

Product for analytical use.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

14 mg TCEP

Chemical: tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)

CAS No.: 51805-45-9

Chemical: inorganic salts, declaration not necessary

CAS No.: -

13 mL FOL

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 Effect 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

7 mL FOB

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 Effect 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: chemicals/mixture until 1%

CAS No.: -

Chemical: 2-propanol

CAS No.: 67-63-0

DNEL: [inh] 500 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 140.9 mg/L

PNEC = Predicted No Effect Concentration

NIOSH: [TWA] 400 ppm / 980 mg/m³

NIOSH STEL: 500 ppm / 1225 mg/m³

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

OSHA: [TWA] 400 ppm / 980 mg/m³

Chemical: Tergitol 15-S-7

CAS No.: 84133-50-6

6 mL FOW2

Chemical: chemicals/mixture until 1%

CAS No.: -

13 mL FOE

Chemical: chemicals/mixture until 1%

CAS No.: -

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20 mL FOW1

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 Effect 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: *Tergitol 15-S-7*

CAS No.: 84133-50-6

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

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

120 µL Liquid Proteinase K

Chemical: *glycerole*

CAS No.: 56-81-5

DNEL: [inh] 56 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.885 mg/L

PNEC = Predicted No Effect Concentration

Chemical: *proteinase K, liquid*

CAS No.: 39450-01-6

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.

8.2.4 Skin Protection

Recommended 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

14 mg TCEP

a) State of aggregation:

solid (lyophilized)

b) Color:

colorless

c) Odor:

penetrative

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



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h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7
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:	data not available
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

13 mL FOL

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:	1.03 g/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

7 mL FOB

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:	21 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.2-7.8
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:	0.89 g/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

6 mL FOW2

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



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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/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

13 mL FOE

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	0 °C
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:	8-9
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/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

20 mL FOW1

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:	5.0-5.5
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

120 µL Liquid Proteinase K

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:	0-100 %
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available

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p) Specific Gravity: 1.1 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.

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 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.

14 mg TCEP

Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)* CAS No.: 51805-45-9
TSCA Inventory: LVE
LD50 orl rat: 3500 mg/kg
LD50 scu rat: > 3000 mg/kg

Chemical: *inorganic salts, declaration not necessary* CAS No.: -
TSCA Inventory: all listed

13 mL FOL

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

7 mL FOB

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



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Chemical: *2-propanol* CAS No.: 67-63-0
TSCA Inventory: listed California Prop. 65 List: not listed
ACGIH: 1230 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system
Symptoms: irritation eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis
Canada CEPA 1999: DSL yes
LD50 orl rat : 5045 mg/kg
LC_{Low} orl hmn : 3570 mg/kg
LC50 ihl rat : 25 mg/L/4H

Chemical: *Tergitol 15-S-7* CAS No.: 84133-50-6

6 mL FOW2

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

13 mL FOE

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

20 mL FOW1

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: *Tergitol 15-S-7* CAS No.: 84133-50-6

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

120 µL Liquid Proteinase K

Chemical: *glycerole* CAS No.: 56-81-5
TSCA Inventory: listed (1,2,3-Propanetriol)
Exposure Routes: inhalation, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, kidneys
Symptoms: irritation eyes, skin, respiratory system; headache, nausea, vomiting; kidney injury
LD50 orl rat : 12600 mg/kg

Chemical: *proteinase K, liquid* CAS No.: 39450-01-6

TSCA Inventory: listed (CAS 102925-54-2)

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.

11.2 Other Hazards

Possible endocrine disrupting effects

data not available

Other Information

no additional data available



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SECTION 12: Ecological Information

12.1 Toxicity

Following information is valid for pure chemicals.

14 mg TCEP

Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)*

CAS No.: 51805-45-9

Chemical: *inorganic salts, declaration not necessary*

CAS No.: -

13 mL FOL

Chemical: *guanidine hydrochloride*

CAS No.: 50-01-1

PNEC (fresh water): -

PNEC = Predicted No Effect 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

7 mL FOB

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

PNEC (fresh water): 42.4 µg/L

PNEC = Predicted No Effect 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: *chemicals/mixture until 1%*

CAS No.: -

Chemical: *2-propanol*

CAS No.: 67-63-0

PNEC (fresh water): 140.9 mg/L

PNEC = Predicted No Effect Concentration

LC50 fish/96h : 1400 mg/L

EC50 daphnia/48h : 13.3 g/L

IC50 scenedesmus quadricauda/72h : >1000 mg/L

EC10 pseudomonas putita/16h : EC50: 1050 mg/L

Partition Coefficient (o/w): 0,05

Chemical: *Tergitol 15-S-7*

CAS No.: 84133-50-6

LC50 fish/96h : 3,2-3,6 mg/L

EC50 daphnia/48h : 7,3 mg/L

EC10 pseudomonas putita/16h : EC50: >1000 mg/L

Partition Coefficient (o/w): 2,72

6 mL FOW2

Chemical: *chemicals/mixture until 1%*

CAS No.: -

13 mL FOE

Chemical: *chemicals/mixture until 1%*

CAS No.: -

20 mL FOW1

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

May cause long lasting harmful effects to aquatic life. 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 Effect 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

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Chemical: *Tergitol 15-S-7* CAS No.: 84133-50-6
 LC50 fish/96h : 3,2-3,6 mg/L
 EC50 daphnia/48h : 7,3 mg/L
 EC10 pseudomonas putida/16h : EC50: >1000 mg/L
 Partition Coefficient (o/w) : 2,72

Chemical: *ethanol* CAS No.: 64-17-5
 PNEC (fresh water) : 0.96 mg/L
 PNEC = Predicted No Effect 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 putida/16h : [EC5] 6500 mg/L
 Partition Coefficient (o/w) : -0,31

120 µL Liquid Proteinase K
 Chemical: *glycerole* CAS No.: 56-81-5
 PNEC (fresh water) : 0.885 mg/L
 PNEC = Predicted No Effect Concentration
 LC50 fish/96h : >5000 24h mg/L
 EC50 daphnia/48h : >10 24h g/L
 IC50 scenedesmus quadricauda/72h : IC5 7d >10 g/L
 EC10 pseudomonas putida/16h : EC5: >10 g/L
 Partition Coefficient (o/w) : -1,76

Chemical: *proteinase K, liquid* CAS No.: 39450-01-6

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).

13.1 Waste Treatment Methods

Normally it is possible to empty small amounts (diluted!) into drains.

SECTION 14: Transport Information

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

or

14.1. UN/NA: 1993 **14.2. Proper Shipping Name:** Flammable liquid, n.o.s. (2-propanol, ethanol mixture)
14.3. Hazard Class: 3 **14.4. Packing Group:** II

Transportation by Road

Classification code: F1

Limited Quantity: 1 L

Excepted Quantity: E 2

Tunnel restriction code: E

Special instructions: 640C



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Air Transportation

Limited Quantity: LQ 4

Excepted Quantity: E 2

PAX: 353

CAO: 364

max. weight PAX: 5 L

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

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 2.2.8.10 and 2.2.2.2 following changes were applied: - 6 composition data corrected - 8 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.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336	May cause drowsiness or dizziness.
H413	May cause long lasting harmful effects to aquatic life.

16.2.2 List of relevant P Phrases

P261sh	Avoid breathing dust/vapors.
P342+311	If experiencing respiratory symptoms: 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

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



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Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)
Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG
TRGS 907, German technical rules for listing substances and causes of sensitization, updated November 2011
Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)
Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)
Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progress (11th ATP)
Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)
TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)
Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG
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 oxygen demand
CSCL: Chemical Substance Control Law (Jp)
Dam: damage
DNEL: Derived No-Effect Level (for workers)
derm: dermal
dog: dog
EC10: Concentration causing a toxic effect in 10% of the test organisms
EC: European Community
EC-Nr: Substance number of the EC substance inventory
EmS: Guide to accident management measures on ships
EU: European Union
fish: fish (not specified)
GHS: Global Harmonized System of Classification and Labeling of Chemicals
gpg: guinea pig
ICAO: International Civil Aviation Organization
ihl: inhaled
IMDG: International Maritime Dangerous Goods Code
intrav: intravenous
ipt: intraperitoneal
ISHL: Industrial Safety and Health Law (Jp)
LC50: letale concentration 50%
LD50: letale dosis 50%



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