

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 1/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

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

1.1 Product Identifier / Product Name

REF	740969.10	
Product Name	NucleoSpin totalRNA FFPE XS (10)	
1 x 200 U rDNase		UFI: 8SGV-63EY-520U-3WWU
1 x 1 mL MKA		
1 x 13 mL RNase-free H ₂ O		
1 x 200 µL Liquid Proteinase K		UFI: TTWV-43C9-R202-NTGN
1 x 10 mL MLF		
1 x 7 mL DRB		
1 x 15 mL Paraffin Dissolver (blau)		UFI: FM7W-U31J-N20G-1QX0
1 x 13 mL MX		UFI: Y01V-43QP-G20R-A6PR
1 x 6 mL MW2		

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

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

1.4 Emergency Telephone Number

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

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

H225
H304
H319
H334
H335
H351

Hazard Classes/Categories

Flam. Liq. 2
Asp. Tox. 1
Eye Irrit. 2
Resp. Sens. 1
STOT SE 3
Carc. 2



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SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 2/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

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

200 µL Liquid Proteinase K



GHS08

Signal Word **DANGER**

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

15 mL Paraffin Dissolver (blau)



GHS08

Signal Word **DANGER**

Hazard Identification	Hazard Classes/Categories
H304	Asp. Tox. 1

13 mL RNase-free H₂O

Signal Word Do not need labelling as hazardous
-

No Hazard Class

10 mL MLF

Signal Word Do not need labelling as hazardous
-

No Hazard Class

200 U rDNase



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SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 3/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7



GHS08

Signal Word: DANGER

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

6 mL MW2

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

1 mL MKA

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

7 mL DRB

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 sensiblizing 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.

200 µL Liquid Proteinase K



GHS08

Signal Word: DANGER
 H334
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



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SDS acc. Hazard Communication Standard

REF: 740969.10	NucleoSpin totalRNA FFPE XS (10)	Page: 4/18
Printing Date: 04.04.2023	Date of Issue: 27.02.2023	Version: 2.2.10.7

P261sh, P342+311
 Avoid breathing dust/vapors.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

15 mL Paraffin Dissolver (blau)



GHS08

Signal Word: DANGER
 H304
 May be fatal if swallowed and enters airways.
 P301+310, P331
 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.Do NOT induce vomiting.

13 mL RNase-free H₂O

Do not need labelling as hazardous
 Signal Word: -

10 mL MLF

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.

6 mL MW2

Do not need labelling as hazardous
 Signal Word: -

1 mL MKA

Do not need labelling as hazardous
 Signal Word: -

7 mL DRB

Do not need labelling as hazardous
 Signal Word: -

Label elements of the complete product



GHS02



GHS07



GHS08

Signal Word: DANGER
 H304, H334, H351
 May be fatal if swallowed and enters airways.May cause allergy or asthma symptoms or breathing difficulties if inhaled.Suspected of causing cancer.
 P201, P261sh, P280sh, P301+310, P331
 Avoid breathing dust/vapors.Obtain special instructions before use.Wear protective gloves/eye protection.IF SWALLOWED: Immediately call a POISON CENTER/ doctor.Do NOT induce vomiting.

2.3 Other Hazards



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SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 5/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

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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.

Information pertaining to particular Risks to Human and possible Symptoms

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 cancer. May be fatal if swallowed and enters airways. The Paraffin Dissolver needs no labeling H350, because the aromates are reduced (<0.03%).
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

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

10 mL MLF

Substance name: *tris(hydroxymethyl)aminomethane*
CAS No.: 77-86-1

Substance rating: No criteria for classification or naming of chemical is not required.
Chemical Formula: C₄H₁₁NO₃
Synonyms (de): TRIS, Trometamol
REACH Reg. No.: 01-2119957659-16-0014
EC No.: 201-064-4
Concentration: 1 - <3 %
acc. GHS: The criteria for classification are not fulfilled.

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.

15 mL Paraffin Dissolver (blau)

Substance name: *paraffin dissolver*
CAS No.: 64742-46-7

Substance rating: H304, Asp. Tox. 1
Chemical Formula: C₁₅-C₂₀, isomere aliphates
Synonyms (de): KW-Fraktion C₁₅-C₂₀
REACH Reg. No.: 01-2119827000-58-XXXX
EC No.: 934-956-3
Concentration: 90 - <100 %
acc. GHS: H304, Asp. Tox. 1

Indice No.: 649-275-00-4

7 mL DRB



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10	NucleoSpin totalRNA FFPE XS (10)	Page: 6/18
Printing Date: 04.04.2023	Date of Issue: 27.02.2023	Version: 2.2.10.7

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: C₄H₈O₂
 Synonyms (de): Glycoethylether, Ethylendioxid
 REACH Reg. No.: 01-2119462837-26-0001
SVHC listed: listed (08/07/2021) Cand. Lst. REACH Art59(10)
 EC No.: 204-661-8 Index 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

200 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: C₃H₈O₃
 Synonyms (de): 1,2,3-Propantriol
 REACH Reg. No.: 01-2119471987-18-xxxx
 EC No.: 200-289-5 Index 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 Index No.: 647-014-00-9
 Concentration: 1 - <3 %
 acc. GHS: H334, Resp. Sens. 1

1 mL MKA

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

Substance rating: No criteria for classification or naming of chemical is not required.
 Chemical Formula: CH₃COOH/K/Na•H₂O
 Concentration: 45 - <60 %
 acc. GHS: The criteria for classification are not fulfilled.

13 mL RNase-free H₂O

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

Substance rating: No criteria for classification or naming of chemical is not required.
 Chemical Formula: H₂O
 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.



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 7/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

SECTION 4: First-Aid Measures

4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Take to a doctor, in a raised position if there are breathing difficulties.

4.1.1 After SKIN Contact

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.

CMR Effekte: Suspected of causing cancer.

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. Wear suitable protective gloves (see 8.2.2). 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. Not for organic solvents (see section 13).



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10	NucleoSpin totalRNA FFPE XS (10)	Page: 8/18
Printing Date: 04.04.2023	Date of Issue: 27.02.2023	Version: 2.2.10.7

6.4 Reference to other Sections

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): 2

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

7.3 Specific End Use(s)

Product for analytical use.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

200 U rDNase

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

10 mL MLF

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1

DNEL: [derm] 166.7 mg/kg bw/day; [inh] 117.5 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): no data mg/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

6 mL MW2

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

15 mL Paraffin Dissolver (blau)

Chemical: *paraffin dissolver* CAS No.: 64742-46-7

NIOSH STEL: 10 mg/m³

OSHA: 5 mg/m³

7 mL DRB

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 Effect 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

200 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



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10	NucleoSpin totalRNA FFPE XS (10)	Page: 9/18
Printing Date: 04.04.2023	Date of Issue: 27.02.2023	Version: 2.2.10.7

Chemical: <i>proteinase K, liquid</i>	CAS No.: 39450-01-6
1 mL MKA Chemical: <i>acetate buffer solution</i>	CAS No.: -
13 mL RNase-free H₂O Chemical: <i>water</i>	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.

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

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

10 mL MLF

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



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 10/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

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

15 mL Paraffin Dissolver (blau)

a) State of aggregation:	liquid
b) Color:	blue
c) Odor:	organic
d) Melting Point:	-18 pourpoint °C
e) Boiling Point:	245-330 °C
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	1-6 Vol%
h) Flash Point:	>115 °C
i) Autoignition Temperature:	>230 °C
j) Decomposition Temperature:	data not available
k) pH Value:	-
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	<0.001 %
n) Partition Coefficient (o/w) :	7-8.7
o) Vapor Pressure (68°F):	< 0.003 hPa
p) Specific Gravity:	0.82 g/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

7 mL DRB

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



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 11/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

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:	1.01 g/cm ³
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/cm ³
q) Relative Vapor Density (air=1) :	3.04
r) Particle Size:	data not available

200 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
p) Specific Gravity:	1.1 g/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

1 mL MKA

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:	5-6
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



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 12/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

p) Specific Gravity: 1.19 g/cm³
 q) Relative Vapor Density (air=1): data not available
 r) Particle Size: data not available

13 mL RNase-free H₂O

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.

SECTION 10: Stability and Reactivity

10.1 Reactivity

No further data available.

10.2 Chemical Stability

no known instability.

10.3 Possibility of Hazardous Reactions

No further data available.

10.4 Conditions to avoid

No more required.

10.5 Incompatible Materials

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 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.



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10	NucleoSpin totalRNA FFPE XS (10)	Page: 13/18
Printing Date: 04.04.2023	Date of Issue: 27.02.2023	Version: 2.2.10.7

10 mL MLF

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1
 TSCA Inventory: listed California Prop. 65 List: not listed
 Canada CEPA 1999: DSL yes
 LD50 orl rat : 5000 mg/kg

6 mL MW2

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

15 mL Paraffin Dissolver (blau)

Chemical: *paraffin dissolver* CAS No.: 64742-46-7
 TSCA Inventory: listed
 LD50 orl rat : > 5000 mg/kg

7 mL DRB

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

200 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.

1 mL MKA

Chemical: *acetate buffer solution* CAS No.: -
 TSCA Inventory: all listed

13 mL RNase-free H₂O

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



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 14/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

SECTION 12: Ecological Information

12.1 Toxicity

Following information is valid for pure chemicals.

200 U rDNase

Chemical: *rDNase*

CAS No.: 9003-98-9

10 mL MLF

Chemical: *tris(hydroxymethyl)aminomethane*

CAS No.: 77-86-1

PNEC (fresh water): no data mg/L

PNEC = Predicted No Effect Concentration

LC50 fish/96h: LD0 (4d): 1-10 g/L

EC50 pseudokirchneriella subcapitata/72h: 397; 48h: 473 mg/L

EC10 pseudomonas putida/16h: 1.3h g/L

Partition Coefficient (o/w): -1,56

6 mL MW2

Chemical: *chemicals/mixture until 1%*

CAS No.: -

15 mL Paraffin Dissolver (blau)

Chemical: *paraffin dissolver*

CAS No.: 64742-46-7

LC50 fish/96h: >1028 mg/L

Partition Coefficient (o/w): 7-8,7

7 mL DRB

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 Effect 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

200 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

1 mL MKA

Chemical: *acetate buffer solution*

CAS No.: -

13 mL RNase-free H₂O

Chemical: *water*

CAS No.: 7732-18-5

12.2 Persistence and Degradability

not necessary

12.3 Bioaccumulative Potential

not necessary



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 15/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

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

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). Or collect in solvent waste (RCRA Code D001, EU waste code number 07 07 04).

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/ $\Sigma \leq 500$ mL) = ADR/ IATA E2

or

14.1. UN/NA: 1993 **14.2. Proper Shipping Name:** Flammable liquid, n.o.s. (1,4-dioxane 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

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

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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10	NucleoSpin totalRNA FFPE XS (10)	Page: 16/18
Printing Date: 04.04.2023	Date of Issue: 27.02.2023	Version: 2.2.10.7

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 2.2.10.7 and 2.2.2.2 following changes were applied: - 8 composition data corrected - 5 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.
H304	May be fatal if swallowed and enters airways.
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.

16.2.2 List of relevant P Phrases

P201	Obtain special instructions before use.
P261sh	Avoid breathing dust/vapors.
P280sh	Wear protective gloves/eye protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331	Do NOT induce vomiting.

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

16.5 Further Information

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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10

NucleoSpin totalRNA FFPE XS (10)

Page: 17/18

Printing Date: 04.04.2023

Date of Issue: 27.02.2023

Version: 2.2.10.7

product to which the information refers. Accordingly MACHEREY-NAGEL GmbH & Co. KG will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

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%
- leuciscus idus: fisch, ide, orfe
- MAK: maximum workplace concentration
- Met: Metall
- mus: mouse
- Muta: mutagen
- NIOSH: National Institute for Occupational Safety and Health (US)
- NRD: Non-rapidly degradable
- onchorhynchus mykiss: fisch, rainbow trout
- orl: oral
- OSHA: Occupational Safety and Health Administration
- PAX: transport on passenger planes allowed
- PBT: persistent, bioaccumulating, toxic substance
- pH: pH value
- pimephales promelas: fisch, fathead minnow
- PNEC: Predicted No 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



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740969.10	NucleoSpin totalRNA FFPE XS (10)	Page: 18/18
Printing Date: 04.04.2023	Date of Issue: 27.02.2023	Version: 2.2.10.7

STOT: Specific Target Organ Toxicity
 SVHC: Substance of Very High Concern
 t/a: tons per year
 TCCA: Toxic Chemicals Control Act (S. Korea)
 Tox: toxic
 TSCA: The Toxic Substances Control Act (US)
 TWA: time weighted average
 TRGS: technical regulations (DE)
 vPvB: very persistent, very bioaccumulating substance

16.7 Training Advice

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



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