

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50	NucleoSpin RNA XS (50)	Page: 1/17
Printing date: 12.05.2021	Date of issue: 12.04.2021	

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

1.1 Product identifier

REF 740902.50
 Product name NucleoSpin RNA XS (50)

REACH Registration number(s): see SECTION 3.1/3.2 or
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1 x 0.09-1.0 mg Carrier RNA
 1 x 10 mL MDB
 1 x 25 mL RA1
 1 x 15 mL RA2
 1 x 12 mL RA3
 1 x 80 U rDNase
 1 x 7 mL Reaction Buffer for rDNase
 3 x 14 mg TCEP
 1 x 13 mL RNase-free H₂O

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses
 Product for analytical use.
 Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0
 The exposure scenario is integrated into sections 1-16.

Uses advised against
 not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:
 MACHEREY-NAGEL GmbH & Co. KG
 Valenciener Str. 11, 52355 Düren, GERMANY
 Tel.: +49 2421 969 0

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

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.
 DE: Gemeinsames Giftinformationszentrum (GGIZ) 99089 Erfurt tel. +49 361 730 730

You find our current versions of SDS (22 languages) in Internet: <http://www.mn-net.com/SDS>

SECTION 2: Hazard identification

2.0 Classification of the complete product



Signal word	DANGER
Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H412	Aquatic Chronic 3

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 2/17

Printing date: 12.05.2021

Date of issue: 12.04.2021

2.1 Classification of the substance or mixture

0.09-1.0 mg Carrier RNA

Signal word Do not need labelling as hazardous
-
No hazard class

10 mL MDB



Signal word GHS02
WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3

25 mL RA1



Signal word GHS07
WARNING

Hazard identification	Hazard classes/categories
H302	Acute Tox. 4 oral
H412	Aquatic Chronic 3

15 mL RA2



Signal word GHS02 GHS07
WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H412	Aquatic Chronic 3

12 mL RA3

Signal word Do not need labelling as hazardous
-
No hazard class

80 U rDNase

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50
 Printing date: 12.05.2021

NucleoSpin RNA XS (50)
 Date of issue: 12.04.2021

Page: 3/17



GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H334	Resp. Sens. 1

7 mL Reaction Buffer for rDNase

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

13 mL RNase-free H₂O

Signal word Do not need labelling as hazardous
 -

No hazard class

2.2 Label elements

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2). This labelling exemption is NOT valid for sensiblizing substances.

0.09-1.0 mg Carrier RNA

Do not need labelling as hazardous
 Signal word: -

10 mL MDB



GHS02

Signal word: WARNING

25 mL RA1

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 4/17

Printing date: 12.05.2021

Date of issue: 12.04.2021



GHS07

Signal word: WARNING

H412

Harmful to aquatic life with long lasting effects.

15 mL RA2



GHS02



GHS07

Signal word: WARNING

H412

Harmful to aquatic life with long lasting effects.

12 mL RA3

Do not need labelling as hazardous

Signal word: -

80 U rDNase



GHS08

Signal word: DANGER

H334

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261sh, P342+311

Avoid breathing dust/vapours. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

7 mL Reaction Buffer for rDNase

Do not need labelling as hazardous

Signal word: -

14 mg TCEP



GHS07

Signal word: WARNING

13 mL RNase-free H₂O

Do not need labelling as hazardous

Signal word: -

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 5/17

Printing date: 12.05.2021

Date of issue: 12.04.2021

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

Kit contains small amounts of enzymes: May cause allergy or asthma symptoms or breathing difficulties if inhaled. -

Information pertaining to particular risks to the environment

Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

0.09-1.0 mg Carrier RNA

Chemical: *carrier RNA*

CAS No.: 26763-19-6

Classification: No criteria for classification or naming of chemical not required.

TSCA Inventory: listed (CAS 9001-99-4)

RTECS: -

MFCD:

00131937

KE No.: KE-30341

Concentration: 90 - <100 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

10 mL MDB

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3

Formula: $C_2 H_6 N_4 S$

Pseudonym: guanidine rhodanide

TSCA Inventory: listed

REACH Reg. No.: 01-2120735072-65-0001

EC No.: 209-812-1

Indice No.:

615-004-00-3

RTECS: XL1225000

MFCD:

00013027

KE No.: not listed

Concentration: 5 - <10 %

acc. CLP (GHS): The criteria for classification are not fulfilled.

Chemical: *ethanol* (diluted < 20 %)

CAS No.: 64-17-5d

(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)

Classification: H225, Flam. Liq. 2

Formula: $C_2 H_6 O$; $C_2 H_5 OH$

Pseudonym: ethyl alcohol, methylated spirit

TSCA Inventory: listed

REACH Reg. No.: 01-2119457610-43-xxxx

EC No.: 200-578-6

Indice No.:

603-002-00-5

RTECS: KQ6300000

MFCD:

00003568

KE No.: KE-13217

Concentration: 5 - <20 %

acc. CLP (GHS): H226, Flam. Liq. 3

25 mL RA1

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50 NucleoSpin RNA XS (50) Page: 6/17
 Printing date: 12.05.2021 Date of issue: 12.04.2021

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3
 Formula: C₂ H₆ N₄ S
 Pseudonym: guanidine rhodanide
 TSCA Inventory: listed
 REACH Reg. No.: 01-2120735072-65-0001
 EC No.: 209-812-1
 RTECS: XL1225000
 KE No.: not listed
 Concentration: 45 - <60 %
 acc. CLP (GHS): H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3
 Indice No.: 615-004-00-3
 MFCD: 00013027

15 mL RA2

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3
 Formula: C₂ H₆ N₄ S
 Pseudonym: guanidine rhodanide
 TSCA Inventory: listed
 REACH Reg. No.: 01-2120735072-65-0001
 EC No.: 209-812-1
 RTECS: XL1225000
 KE No.: not listed
 Concentration: 30 - <45 %
 acc. CLP (GHS): H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3
 Indice No.: 615-004-00-3
 MFCD: 00013027

Chemical: *ethanol* CAS No.: 64-17-5
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
 Classification: H225, Flam. Liq. 2
 Formula: C₂ H₆ O; C₂ H₅ OH
 Pseudonym: ethyl alcohol, methylated spirit
 TSCA Inventory: listed
 REACH Reg. No.: 01-2119457610-43-xxxx
 EC No.: 200-578-6
 RTECS: KQ6300000
 KE No.: KE-13217
 Concentration: 20 - <35 %
 acc. CLP (GHS): H226, Flam. Liq. 3
 Indice No.: 603-002-00-5
 MFCD: 00003568

12 mL RA3

Chemical: *chemicals/mixture < 1%* CAS No.: -
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <1%
 KE No.: listed
 Concentration: 0.1 - <1 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

80 U rDNase

Chemical: *rDNase* CAS No.: 9003-98-9
 Classification: H334, Resp. Sens. 1
 Formula: Enzyme Comm. No. 3.1.21.1, origin: cloned
 Pseudonym: Nuclease, deoxyribo-
 TSCA Inventory: listed
 EC No.: 232-667-0
 RTECS: RF0750000
 KE No.: KE-09612
 Concentration: 90 - <100 %
 acc. CLP (GHS): H334, Resp. Sens. 1

7 mL Reaction Buffer for rDNase



Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 7/17

Printing date: 12.05.2021

Date of issue: 12.04.2021

Chemical: *chemicals/mixture < 2%*
 Classification: No criteria for classification or naming of chemical not required.
 TSCA Inventory: all listed, <2%
 KE No.: listed
 Concentration: 1 - <2 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

CAS No.: -

14 mg TCEP

Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)*
 Classification: H315, Skin Irrit. 2, H319, Eye Irrit. 2
 Formula: C₉H₁₆ClO₆P
 Pseudonym: TCEP•HCl
 TSCA Inventory: LVE
 KE No.: not listed
 Concentration: 70 - <100 %
 acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

CAS No.: 51805-45-9

MFCD: 00145469

Chemical: *inorganic salts, declaration not necessary*
 Classification: No criteria for classification or naming of chemical not required.
 Pseudonym: not hazardous
 TSCA Inventory: all listed
 KE No.: listed
 Concentration: 25 - <50 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

CAS No.: -

13 mL RNase-free H₂O

Chemical: *water*
 Classification: No criteria for classification or naming of chemical not required.
 Formula: H₂O
 TSCA Inventory: listed
 REACH Reg. No.: exempt, Annex IV
 EC No.: 231-791-2
 RTECS: ZC0110000
 KE No.: KE-35400
 Concentration: 90 - <100 %
 acc. CLP (GHS): The criteria for classification are not fulfilled.

CAS No.: 7732-18-5

3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%.

List of H and P phrases: see section 16.1

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 vapours

After inhalation of foam or vapour 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

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. ---

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 8/17

Printing date: 12.05.2021

Date of issue: 12.04.2021

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: Firefighting measures

5.1 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.

5.2 Special hazards arising from the substance or mixture

WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible. ---

5.3 Advice for firefighters

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

5.4 Additional information

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. 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

not necessary, contains only small amounts of these substances

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

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 of MACHEREY-NAGEL allows a safe storage.

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

0.09-1.0 mg Carrier RNA

Chemical: *carrier RNA*

CAS No.: 26763-19-6

10 mL MDB

Chemical: *guanidinium thiocyanate*

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

CAS No.: 593-84-0

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50	NucleoSpin RNA XS (50)	Page: 9/17
Printing date: 12.05.2021	Date of issue: 12.04.2021	

OSHA: not listed

Chemical: *ethanol* CAS No.: 64-17-5d
 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
 TRGS 900 (DE): 200 ppm / 380 mg/m³
E/e respirable
 Short-term exposure factor: 4 (II), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 500 ppm / 960 mg/m³
 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

25 mL RA1

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

15 mL RA2

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: *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
 TRGS 900 (DE): 200 mL/m³ / 380 mg/m³
E/e respirable
 Short-term exposure factor: 4 (II), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded
 SUVA(CH) MAK value: 500 ppm / 960 mg/m³
 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: [TWA] 1000 ppm / 1900 mg/m³

12 mL RA3
 Chemical: *chemicals/mixture < 1%* CAS No.: -

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

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

14 mg TCEP
 Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)* CAS No.: 51805-45-9
 Chemical: *inorganic salts, declaration not necessary* CAS No.: -



Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50	NucleoSpin RNA XS (50)	Page: 10/17
Printing date: 12.05.2021	Date of issue: 12.04.2021	

13 mL RNase-free H₂O
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 protection filter, class A/AX. No additional recommendations.

8.2.2 Hand protection

Yes, gloves according EN 374 (permeation time >30 min - level 2), consist of PVC, natural latex, Neopren, or Nitril (f.ex. from Ansell or KCL). Use for short times chemical resistant latex gloves with code EN 374-3 level 1.

8.2.3 Eye protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection.

8.2.4 Skin protection

Recommended to avoid contamination with these hazards.

8.2.5 Personal hygiene

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

0.09-1.0 mg Carrier RNA
Appearance: solid (lyoph.)

Colour: colourless

Odor: odorless

10 mL MDB
Appearance: liquid
pH:
Flash point:
Specific gravity:

Colour: colourless
6.7-7.2
55 °C
1.01 g/cm³

Odor: alcoholic

25 mL RA1
Appearance: liquid
pH:
Specific gravity:

Colour: colourless
6.5-7.5
1.13 g/cm³

Odor: odorless

15 mL RA2
Appearance: liquid
pH:
Flash point:
Specific gravity:

Colour: colourless
7.0-7.5
28 °C
1.03 g/cm³

Odor: alcoholic

12 mL RA3
Appearance: liquid
pH:
Specific gravity:

Colour: colourless
7-8
1.00 g/cm³

Odor: odorless

80 U rDNase
Appearance: solid (lyoph.)

Colour: white

Odor: odorless

7 mL Reaction Buffer for rDNase
Appearance: liquid
pH:
Specific gravity:

Colour: colourless
6.5-7.5
1.01 g/cm³

Odor: odorless

14 mg TCEP
Appearance: solid (lyoph.)

Colour: colourless

Odor: penetrative

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50	NucleoSpin RNA XS (50)	Page: 11/17
Printing date: 12.05.2021	Date of issue: 12.04.2021	

pH:	6.5-7		
13 mL RNase-free H₂O			
Appearance: liquid	Colour: colourless		Odor: odorless
pH:	6-8		
Specific gravity:	1.0 g/cm ³		

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.
Relevant Properties of Substance Group

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

Note: Can form very reactive substances with oxidizing agents. Possible: Contact with acids liberates toxic gas. No further data available.

10.4 Conditions to avoid

Not necessary. ---

10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

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 substances. Quantitative data on the toxicity of this product are not available.

0.09-1.0 mg Carrier RNA

Chemical:	<i>carrier RNA</i>	CAS No.: 26763-19-6
TSCA Inventory:	listed (CAS 9001-99-4)	
Japan CSCL/PRTR:	not listed, Japan PDSCCL: not listed	
Japan ISHL:	not listed	
Korea Exist.Chem.Inventory:	KE-30341	

10 mL MDB

Chemical:	<i>guanidinium thiocyanate</i>	CAS No.: 593-84-0
TSCA Inventory:	listed	California Proposition 65 List: not listed
Australia NICNAS:	not listed	Canada CEPA 1999: DSL yes
Japan CSCL/PRTR:	not listed, Japan PDSCCL: not listed	
Japan ISHL:	not listed	
South Korea TCCA:	not listed	
Korea Exist.Chem.Inventory:	not listed	
LD50 _{orl rat} :	593 mg/kg	
LC50 _{drm rbt} :	>2000 mg/m ³	
LC50 _{ihl rat} :	[4h] 5.319 mg/L	
LD50 _{ipr mus} :	300 mg/kg	

Chemical:	<i>ethanol</i>	CAS No.: 64-17-5d
TSCA Inventory:	listed	California Proposition 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	

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50 NucleoSpin RNA XS (50) Page: 12/17
 Printing date: 12.05.2021 Date of issue: 12.04.2021

Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%/\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217
 LD50_{orl rat}: 6200 mg/kg
 LC_{LoWi}hl gpg: 21.9 g/m³
 LC_{LoWo}rl hmn: 1400 mg/kg
 LC50_{ihl mouse}: [4h] 39 g/m³
 LC50_{ihl rat}: [10h] 20 g/m³
 LD50_{drm rbt}: 20 000 mg/kg
 LD50_{oral mouse}: 3450 mg/kg
 TRGS 905 (DE): K5, M5, R_F C

25 mL RA1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 TSCA Inventory: listed California Proposition 65 List: not listed
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: not listed
 LD50_{orl rat}: 593 mg/kg
 LC50_{drm rbt}: >2000 mg/m³
 LC50_{ihl rat}: [4h] 5.319 mg/L
 LD50_{ipr mus}: 300 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

15 mL RA2

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 TSCA Inventory: listed California Proposition 65 List: not listed
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: not listed
 LD50_{orl rat}: 593 mg/kg
 LC50_{drm rbt}: >2000 mg/m³
 LC50_{ihl rat}: [4h] 5.319 mg/L
 LD50_{ipr mus}: 300 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

Chemical: *ethanol* CAS No.: 64-17-5
 TSCA Inventory: listed California Proposition 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
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: listed $\geq 0,1\%/\geq 0,1\%$, Article 57-2 (SDS required)
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-13217
 LD50_{orl rat}: 6200 mg/kg
 LC_{LoWi}hl gpg: 21.9 g/m³
 LC_{LoWo}rl hmn: 1400 mg/kg
 LC50_{ihl mouse}: [4h] 39 g/m³
 LC50_{ihl rat}: [10h] 20 g/m³
 LD50_{drm rbt}: 20 000 mg/kg
 LD50_{oral mouse}: 3450 mg/kg
 TRGS 905 (DE): K5, M5, R_F C

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50 NucleoSpin RNA XS (50) Page: 13/17
 Printing date: 12.05.2021 Date of issue: 12.04.2021

12 mL RA3

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

80 U rDNase

Chemical: *rDNase* CAS No.: 9003-98-9
 TSCA Inventory: listed
 Japan CSCL/PRTR: not listed
 Japan ISHL: not listed
 Korea Exist.Chem.Inventory: KE-09612
 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.

7 mL Reaction Buffer for rDNase

Chemical: *chemicals/mixture < 2%* CAS No.: -
 TSCA Inventory: all listed, <2%
 Korea Exist.Chem.Inventory: listed

14 mg TCEP

Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)* CAS No.: 51805-45-9
 TSCA Inventory: LVE
 Korea Exist.Chem.Inventory: not listed
 LD50_{oral rat}: 3500 mg/kg
 LD50_{intraperitoneal rat}: 1024 mg/kg
 LD50_{scu rat}: >3000 mg/kg

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

13 mL RNase-free H₂O

Chemical: *water* CAS No.: 7732-18-5
 TSCA Inventory: listed
 Korea Exist.Chem.Inventory: KE-35400

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

0.09-1.0 mg Carrier RNA

Chemical: *carrier RNA* CAS No.: 26763-19-6

10 mL MDB

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 putida/16h}: [10d] 200 mg/L
 Water hazard class (DE): 3
 Dispersion coefficient_(octanol-water): [pH 5.1] -1.11
 Storage class (VCI): 12

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50 NucleoSpin RNA XS (50) Page: 14/17
 Printing date: 12.05.2021 Date of issue: 12.04.2021

Chemical: *ethanol* CAS No.: 64-17-5d
 PNEC(fresh water) : 0.96 mg/L
 PNEC = Predicted No Effected Concentration
 LC50daphnia magna/48h : >100 g/L
 LC50pimephales promelas/96h : 13.4-15.1 g/L
 LC50leuciscus idus/96h : [48h] 8.14 g/L
 LC50fish/96h : 13 g/L
 EC50daphnia/48h : 9.3-14.2 g/L
 IC50scenedesmus quadricauda/72h : [7d] 5000 mg/L
 EC10pseudomonas putita/16h : [EC5] 6500 mg/L
 Water hazard class (DE): 1 WGK No.: 0096
 Dispersion coefficient(octanol-water) : -0.31
 Storage class (VCI): 3

25 mL RA1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 PNEC(fresh water) : 42.4 µg/L
 PNEC = Predicted No Effected Concentration
 LC50fish/96h : [4d] 89.1 mg/L
 EC50daphnia/48h : 42.4 mg/L
 IC50scenedesmus quadricauda/72h : 130 mg/L
 EC10pseudomonas putita/16h : [10d] 200 mg/L
 Water hazard class (DE): 3
 Dispersion coefficient(octanol-water) : [pH 5.1] -1.11
 Storage class (VCI): 12

15 mL RA2

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 PNEC(fresh water) : 42.4 µg/L
 PNEC = Predicted No Effected Concentration
 LC50fish/96h : [4d] 89.1 mg/L
 EC50daphnia/48h : 42.4 mg/L
 IC50scenedesmus quadricauda/72h : 130 mg/L
 EC10pseudomonas putita/16h : [10d] 200 mg/L
 Water hazard class (DE): 3
 Dispersion coefficient(octanol-water) : [pH 5.1] -1.11
 Storage class (VCI): 12

Chemical: *ethanol* CAS No.: 64-17-5
 PNEC(fresh water) : 0.96 mg/L
 PNEC = Predicted No Effected Concentration
 LC50daphnia magna/48h : >100 mg/L
 LC50pimephales promelas/96h : 13400 - 15100 mg/L
 LC50leuciscus idus/96h : [48h] 8140 mg/L
 LC50fish/96h : 13 g/L
 EC50daphnia/48h : 9.3-14.2 g/L
 IC50scenedesmus quadricauda/72h : [7d] 5000 mg/L
 EC10pseudomonas putita/16h : [EC5] 6500 mg/L
 Water hazard class (DE): 1 WGK No.: 0096
 Dispersion coefficient(octanol-water) : -0.31
 Storage class (VCI): 3

12 mL RA3

Chemical: *chemicals/mixture < 1%* CAS No.: -
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

80 U rDNase

Chemical: *rDNase* CAS No.: 9003-98-9
 Water hazard class (DE): 1 WGK No.: n.n.
 Storage class (VCI): 13



Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 15/17

Printing date: 12.05.2021

Date of issue: 12.04.2021

7 mL Reaction Buffer for rDNase

Chemical: *chemicals/mixture < 2%*
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

CAS No.: -

14 mg TCEP

Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)*
 Storage class (VCI): 12-13

CAS No.: 51805-45-9

Chemical: *inorganic salts, declaration not necessary*
 Water hazard class (DE): 1
 Storage class (VCI): 12-13

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

12.4 Mobility in soil

not necessary

12.5 Results of PBT and vPvB assessment

no data available

12.6 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 (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 1993 class 3 III, **Excepted Quantities** (≤ 30 mL/ $\Sigma \leq 1$ L) = ADR/ IATA E1

or

14.1 UN number: 1993 **14.2 UN proper shipping name:** Flammable liquid, n.o.s. (ethanol mixture)

14.3 Class: 3 **14.4 Packing group:** III

Road transport

Classification code: F1

Limited Quantity: 5 L

Excepted Quantity: E 1

Air transport

PAX: 355

CAO: 366

Maritime transport

EmS: F-E, S-E

Tunnel restriction code: E

Special instructions: 640E

max. weight PAX: 60 L

max. weight CAO: 220 L

Storage category: A

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 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 16/17

Printing date: 12.05.2021

Date of issue: 12.04.2021

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
 TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011
 MN Leaflet/User manual, also see www.mn-net.com
 Look for your country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412	Harmful to aquatic life with long lasting effects.

16.1.2 List of relevant P phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261sh	Avoid breathing dust/vapours.
P264W	Wash with water thoroughly after handling.
P273	Avoid release to the environment.
P280sh	Wear protective gloves/eye protection.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P330	Rinse mouth.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

16.2 Training advice

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.

16.3 Recommended restriction on use

Only for professional user.
 Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!
 Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!
 An individual package of this product or test kit has a moderate hazardous potential.

16.4 Further information

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16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS
 Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress
 Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
 Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
 TRGS 900, German engineering rules governing limits in air at work, updated 03/2019
 SUVA .CH, Limits in air at work 2009, revised on 01.2009
 TRGS 907, German engineering rules governing listing of substances and causes of sensitizations, updated November 2011
 KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU

2017-08 Adaptation of new ethanol denaturation 2016/1867/EU

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Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 740902.50

NucleoSpin RNA XS (50)

Page: 17/17

Printing date: 12.05.2021

Date of issue: 12.04.2021

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