

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643 NucleoSpin 8 Virus (12x8) Page: 1/15
 Printing Date: 27.02.2020 Date of Issue: 05.11.2019

Section 1: Identification

1.1 Product Identifier / Product Name

REF 740643
 Product Name NucleoSpin 8 Virus (12x8)
 -
 2 x 0.09-1.0 mg Carrier RNA
 1 x 8 mL PB
 1 x 25-60 mg Proteinase K (lyo)
 2 x 40 mL RAV1
 1 x 50 mL RAV3
 1 x 75 mL RAW
 1 x 30 mL RE
 1 x 30 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.
 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
 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY
 Tel.: +49 2421 969 0 E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency Telephone Number

For Chemical Emergency
 Spill, Leak, Fire, Exposure, or Accident
 Call CHEMTREC Day or Night (CCN685047)
 Within USA and Canada: **1-800-424-9300**
 Outside USA and Canada: **+1 703-527-3887** (collect calls accepted)

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

Section 2: Hazard(s) 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

2.1 Classification of the Substance(s) or Mixture(s)

0.09-1.0 mg Carrier RNA

Do not need labelling as hazardous

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643	NucleoSpin 8 Virus (12x8)	Page: 2/15
Printing Date: 27.02.2020	Date of Issue: 05.11.2019	

Signal Word -
No Hazard Class

8 mL PB

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

25-60 mg Proteinase K (Iyo)



GHS07 GHS08

Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1

40 mL RAV1



GHS07

Signal Word WARNING

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

50 mL RAV3

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

75 mL RAW



GHS02 GHS07

Signal Word WARNING

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral

30 mL RE

Do not need labelling as hazardous

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 3/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

Signal Word -

No Hazard Class

30 mL RNase-free H₂O

Do not need labelling as hazardous

Signal Word -

No Hazard Class

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.

0.09-1.0 mg Carrier RNA

Do not need labelling as hazardous

Signal Word: -

8 mL PB

Do not need labelling as hazardous

Signal Word: -

25-60 mg Proteinase K (Iyo)



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.

40 mL RAV1



GHS07

Signal Word: WARNING

50 mL RAV3

Do not need labelling as hazardous

Signal Word: -

75 mL RAW



GHS02 GHS07

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643	NucleoSpin 8 Virus (12x8)	Page: 4/15
Printing Date: 27.02.2020	Date of Issue: 05.11.2019	

Signal Word: WARNING

30 mL RE

Do not need labelling as hazardous
Signal Word: -

30 mL RNase-free H₂O

Do not need labelling as hazardous
Signal Word: -

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. ---

Information pertaining to particular Risks to Human and possible Symptoms

Cause after oral intake, 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

Other Hazards

Section 3: Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

0.09-1.0 mg Carrier RNA

Chemical:	<i>carrier RNA</i>	CAS No.:	26763-19-6
Classification:	No criteria for classification or naming of chemical is not required.		
TSCA Inventory:	listed (CAS 9001-99-4)		
RTECS:	-	MFCD:	00131937
Weight Percent:	90 - <100 %		
acc. GHS:	The criteria for classification are not fulfilled.		

8 mL PB

Chemical:	<i>glycerole</i>	CAS No.:	56-81-5
Classification:	No criteria for classification or naming of chemical is not required.		
Chemical Formula:	C ₃ H ₈ O ₃		
Synonyms:	glycerin, 1,2,3-propanetriol		
TSCA Inventory:	listed (1,2,3-Propanetriol)		
RTECS:	MA8050000	MFCD:	00004722
EC No.:	200-289-5	Indice No.:	n/a
Weight Percent:	10 - <50 %		
acc. GHS:	The criteria for classification are not fulfilled.		

25-60 mg Proteinase K (Iyo)

Chemical:	<i>proteinase K (origin: tritirachium album)</i>	CAS No.:	39450-01-6
Classification:	H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1		
Chemical Formula:	Enzyme Comm. No. 3.4.21.64, origin: tritirachium album		
TSCA Inventory:	listed (CAS 102925-54-2)		
RTECS:	-	MFCD:	00132129
EC No.:	254-457-8	Indice No.:	647-014-00-9
Weight Percent:	90 - <100 %		
acc. GHS:	H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1		

40 mL RAV1

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643	NucleoSpin 8 Virus (12x8)	Page: 5/15
Printing Date: 27.02.2020	Date of Issue: 05.11.2019	

Chemical: <i>guanidinium thiocyanate</i>	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	
Chemical Formula: C ₂ H ₆ N ₄ S	
Synonyms: guanidine rhodanide	
TSCA Inventory: listed	
RTECS: XL1225000	MFCD: 00013027
EC No.: 209-812-1	Indice No.: 615-004-00-3
Weight Percent: 45 - <60 %	
acc. GHS: H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3	

50 mL RAV3

Chemical: <i>chemicals/mixture < 1%</i>	CAS No.: -
Classification: No criteria for classification or naming of chemical is not required.	
TSCA Inventory: all listed, <1%	
Weight Percent: 0,1 - <1 %	
acc. GHS: The criteria for classification are not fulfilled.	

75 mL RAW

Chemical: <i>guanidine hydrochloride</i>	CAS No.: 50-01-1
Classification: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2	
Chemical Formula: CH ₆ ClN ₃	
Synonyms: guanidinium chloride	
TSCA Inventory: listed	
RTECS: MF4300000	MFCD: 00013026
EC No.: 200-002-3	Indice No.: 607-148-00-0
Weight Percent: 24 - <36 %	
acc. GHS: H302, Acute Tox. 4 oral	

Chemical: <i>ethanol</i> (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)	CAS No.: 64-17-5
Classification: H225, Flam. Liq. 2	
Chemical Formula: C ₂ H ₆ O; C ₂ H ₅ OH	
Synonyms: ethyl alcohol, methylated spirit	
TSCA Inventory: listed	
RTECS: KQ6300000	MFCD: 00003568
EC No.: 200-578-6	Indice No.: 603-002-00-5
Weight Percent: 35 - <55 %	
acc. GHS: H226, Flam. Liq. 3	

30 mL RE

Chemical: <i>chemicals/mixture < 1%</i>	CAS No.: -
Classification: No criteria for classification or naming of chemical is not required.	
TSCA Inventory: all listed, <1%	
Weight Percent: 0,1 - <1 %	
acc. GHS: The criteria for classification are not fulfilled.	

30 mL RNase-free H₂O

Chemical: <i>water</i>	CAS No.: 7732-18-5
Classification: No criteria for classification or naming of chemical is not required.	
Chemical Formula: H ₂ O	
TSCA Inventory: listed	
RTECS: ZC0110000	
EC No.: 231-791-2	
Weight Percent: 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 16.1

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 6/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

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

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. ---

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

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 WATER FOG, WATER SPRAY, alcohol-resistant FOAM, DRY CHEMICAL, CARBON DIOXIDE can be used.

5.2 Special Hazards arising from the Substance or Mixture

WARNING: Flammable. May form 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

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 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

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 7/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

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 Conditions for Safe Storage, including any Incompatibilities

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

8 mL PB

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

25-60 mg Proteinase K (Iyo)

Chemical: *proteinase K (origin: tritirachium album)*

CAS No.: 39450-01-6

40 mL RAV1

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

50 mL RAV3

Chemical: *chemicals/mixture < 1%*

CAS No.: -

75 mL RAW

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

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: [TWA] 1000 ppm / 1900 mg/m³

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643	NucleoSpin 8 Virus (12x8)	Page: 8/15
Printing Date: 27.02.2020	Date of Issue: 05.11.2019	

30 mL RE

Chemical: *chemicals/mixture < 1%*

CAS No.: -

30 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 vapor/dust respirator, class A/AX. No additional recommendations.

8.2.2 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.

Section 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

0.09-1.0 mg Carrier RNA

a) Appearance: solid (lyoph.)	Color: colorless	b) Odor: odorless
c) Odor Threshold:	data not available	
d) pH:	data not available	
e) Melting Point:	data not available	
f) Boiling Point:	data not available	
g) Flash Point:	data not available	
h) Evaporation Rate _(ether=1) :	data not available	
i) Flammability (solid, gas):	data not available	
j) Explosive Limits:	data not available	
k) Vapor Pressure (68°F):	data not available	
l) Vapor Density _(air=1) :	data not available	
m) Specific Gravity:	data not available	
n) Soluble in Water:	data not available	
o) Partition Coefficient (o-w):	data not available	
p) Autoignition Temperature:	data not available	
q) Decomposition temperature:	data not available	
r) Viscosity:	data not available	
s) Explosive properties:	data not available	
t) Oxidizing properties:	---	

8 mL PB

a) Appearance: liquid	Color: colorless	b) Odor: alcoholic
c) Odor Threshold:	data not available	
d) pH:	data not available	
e) Melting Point:	data not available	
f) Boiling Point:	data not available	
g) Flash Point:	data not available	
h) Evaporation Rate _(ether=1) :	data not available	
i) Flammability (solid, gas):	data not available	
j) Explosive Limits:	data not available	
k) Vapor Pressure (68°F):	data not available	
l) Vapor Density _(air=1) :	data not available	
m) Specific Gravity:	1.11 g/cm ³	
n) Soluble in Water:	data not available	
o) Partition Coefficient (o-w):	data not available	
p) Autoignition Temperature:	data not available	



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 9/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

25-60 mg Proteinase K (Iyo)

- a) Appearance: solid (lyoph.) Color: slightly grey b) Odor: odorless
- c) Odor Threshold: data not available
- d) pH: data not available
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: data not available
- h) Evaporation Rate_(ether=1): data not available
- i) Flammability (solid, gas): data not available
- j) Explosive Limits: data not available
- k) Vapor Pressure (68°F): data not available
- l) Vapor Density_(air=1): data not available
- m) Specific Gravity: data not available
- n) Soluble in Water: data not available
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

40 mL RAV1

- a) Appearance: liquid Color: colorless b) Odor: odorless
- c) Odor Threshold: data not available
- d) pH: 7.0-7.5
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: data not available
- h) Evaporation Rate_(ether=1): data not available
- i) Flammability (solid, gas): data not available
- j) Explosive Limits: data not available
- k) Vapor Pressure (68°F): data not available
- l) Vapor Density_(air=1): data not available
- m) Specific Gravity: 1.12 g/cm³
- n) Soluble in Water: data not available
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

50 mL RAV3

- a) Appearance: liquid Color: colorless b) Odor: odorless
- c) Odor Threshold: data not available
- d) pH: 7-8
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: data not available
- h) Evaporation Rate_(ether=1): data not available
- i) Flammability (solid, gas): data not available
- j) Explosive Limits: data not available
- k) Vapor Pressure (68°F): data not available
- l) Vapor Density_(air=1): data not available
- m) Specific Gravity: 1.00 g/cm³
- n) Soluble in Water: data not available
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 10/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

75 mL RAW

a)	Appearance: liquid	Color: colorless	b) Odor: alcoholic
c)	Odor Threshold:	data not available	
d)	pH:	5-5.5	
e)	Melting Point:	data not available	
f)	Boiling Point:	data not available	
g)	Flash Point:	23 °C	
h)	Evaporation Rate _(ether=1) :	data not available	
i)	Flammability (solid, gas):	data not available	
j)	Explosive Limits:	data not available	
k)	Vapor Pressure (68°F):	data not available	
l)	Vapor Density _(air=1) :	data not available	
m)	Specific Gravity:	0.98 g/cm ³	
n)	Soluble in Water:	data not available	
o)	Partition Coefficient (o-w):	data not available	
p)	Autoignition Temperature:	data not available	
q)	Decomposition temperature:	data not available	
r)	Viscosity:	data not available	
s)	Explosive properties:	data not available	
t)	Oxidizing properties:	---	

30 mL RE

a)	Appearance: liquid	Color: colorless	b) Odor: odorless
c)	Odor Threshold:	data not available	
d)	pH:	8-9	
e)	Melting Point:	data not available	
f)	Boiling Point:	data not available	
g)	Flash Point:	data not available	
h)	Evaporation Rate _(ether=1) :	data not available	
i)	Flammability (solid, gas):	data not available	
j)	Explosive Limits:	data not available	
k)	Vapor Pressure (68°F):	data not available	
l)	Vapor Density _(air=1) :	data not available	
m)	Specific Gravity:	1.0 g/cm ³	
n)	Soluble in Water:	data not available	
o)	Partition Coefficient (o-w):	data not available	
p)	Autoignition Temperature:	data not available	
q)	Decomposition temperature:	data not available	
r)	Viscosity:	data not available	
s)	Explosive properties:	data not available	
t)	Oxidizing properties:	---	

30 mL RNase-free H₂O

a)	Appearance: liquid	Color: colorless	b) Odor: odorless
c)	Odor Threshold:	data not available	
d)	pH:	6-8	
e)	Melting Point:	data not available	
f)	Boiling Point:	data not available	
g)	Flash Point:	data not available	
h)	Evaporation Rate _(ether=1) :	data not available	
i)	Flammability (solid, gas):	data not available	
j)	Explosive Limits:	data not available	
k)	Vapor Pressure (68°F):	data not available	
l)	Vapor Density _(air=1) :	data not available	
m)	Specific Gravity:	1.0 g/cm ³	
n)	Soluble in Water:	data not available	
o)	Partition Coefficient (o-w):	data not available	
p)	Autoignition Temperature:	data not available	
q)	Decomposition temperature:	data not available	
r)	Viscosity:	data not available	
s)	Explosive properties:	data not available	
t)	Oxidizing properties:	---	

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 11/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

9.2 Other Information

Data for the other parameters of the mixtures are not available.

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

Can form very reactive substances with oxidizing agents. Possibility: 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 chemicals. Quantitative data on the toxicity of this product are not available.

0.09-1.0 mg Carrier RNA

Chemical: *carrier RNA* CAS No.: 26763-19-6
 TSCA Inventory: listed (CAS 9001-99-4)

8 mL PB

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}: 12.6 g/kg
 LD50_{drm rbt}: >18.7 g/kg

25-60 mg Proteinase K (Iyo)

Chemical: *proteinase K (origin: tritirachium album)* 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.

40 mL RAV1

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_{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.

50 mL RAV3

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

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 12/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

75 mL RAW

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}: [4h] 3181-7655 µg/m³
 LD50_{drm rbt}: 2000 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 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_{Lowihl gpg}: 21.9 g/m³
 LC_{Loworl 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

30 mL RE

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

30 mL RNase-free H₂O

Chemical: *water* CAS No.: 7732-18-5
 TSCA Inventory: listed

Section 12: Ecological Information

12.1 Toxicity

Following information is valid for pure chemicals.

0.09-1.0 mg Carrier RNA

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

8 mL PB

Chemical: *glycerole* CAS No.: 56-81-5
 PNEC (fresh water): 0.885 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{fish/96h}: >5000_{24h} mg/L
 EC50_{daphnia/48h}: >10_{24h} g/L
 IC50_{scenedesmus quadricauda/72h}: IC50_{7d} >10 g/L
 EC10_{pseudomonas putita/16h}: EC5: >10 g/L
 Partition Coefficient (o-w): -1.76

25-60 mg Proteinase K (Iyo)

Chemical: *proteinase K (origin: tritirachium album)* CAS No.: 39450-01-6

40 mL RAV1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0
 Harmful to aquatic life with long lasting effects. Avoid contact of chemical/mixture to environment.
 Environmental hazards must not be labelled with P phrases until 125 mL (EU-CLP 1272/2008 Annex I - 1.5.2).
 PNEC (fresh water): 42.4 µg/L
 PNEC = Predicted No Effected Concentration
 LC50_{fish/96h}: [4d] 89.1 mg/L
 EC50_{daphnia/48h}: 42.4 mg/L
 IC50_{scenedesmus quadricauda/72h}: 130 mg/L
 EC10_{pseudomonas putita/16h}: [10d] 200 mg/L
 Partition Coefficient (o-w): [pH 5.1] -1.11

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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643 NucleoSpin 8 Virus (12x8) Page: 13/15
 Printing Date: 27.02.2020 Date of Issue: 05.11.2019

50 mL RAV3		
Chemical:	<i>chemicals/mixture < 1%</i>	CAS No.: -
75 mL RAW		
Chemical:	<i>guanidine hydrochloride</i>	CAS No.: 50-01-1
PNEC (fresh water) :	-	
PNEC = Predicted No Effected Concentration		
LC50 _{leuciscus idus/96h} :	1759 mg/L	
LC50 _{fish/96h} :	[4d] 690-1850; [48h] 1758-2420 mg/L	
EC50 _{daphnia/48h} :	70.2 mg/L	
EC10 _{pseudomonas putita/16h} :	[72h] 11.8-33.5 mg/L	
Chemical:	<i>ethanol</i>	CAS No.: 64-17-5
PNEC (fresh water) :	0.96 mg/L	
PNEC = Predicted No Effected Concentration		
LC50 _{daphnia magna/48h} :	>100 mg/L	
LC50 _{pimephales promelas/96h} :	13400 - 15100 mg/L	
LC50 _{leuciscus idus/96h} :	[48h] 8140 mg/L	
LC50 _{fish/96h} :	13 g/L	
EC50 _{daphnia/48h} :	9.3-14.2 g/L	
IC50 _{scenedesmus quadricauda/72h} :	[7d] 5000 mg/L	
EC10 _{pseudomonas putita/16h} :	[EC5] 6500 mg/L	
Partition Coefficient (o-w):	-0.31	
30 mL RE		
Chemical:	<i>chemicals/mixture < 1%</i>	CAS No.: -
30 mL RNase-free H₂O		
Chemical:	<i>water</i>	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 (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

14.1. UN/NA:	1993	14.2. Proper Shipping Name:	Flammable liquid, n.o.s. (ethanol mixture)
14.3. Hazard Class:	3	14.4. Packing Group:	III
<i>Transportation by Road</i>			
Classification code:	F1	Tunnel restriction code:	E
Limited Quantity:	5 L	Special instructions:	640E
Excepted Quantity:	E 1		
<i>Air Transportation</i>			
PAX:	355	max. weight PAX:	60 L
CAO:	366	max. weight CAO:	220 L
<i>Maritime Transport</i>			
EmS:	F-E, S-E	Storage Category:	A



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 14/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

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

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 List of Hazard and Precaution Phrases

16.1.1 List of relevant H Phrases

H226	Flammable liquid and vapor.
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/vapors.
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!

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 Further Information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 740643

NucleoSpin 8 Virus (12x8)

Page: 15/15

Printing Date: 27.02.2020

Date of Issue: 05.11.2019

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.

16.5 Sources of Key Data

GHS: EU Regulation 1272/2008/EC on Classification, Labelling and Packaging of Substances and Mixtures, amending and repealing EU Directives 67/548/EEC and 1999/45/EC, and amending EU Regulation 1907/2006/EC

SDS: EU Regulation 453/2010/EU REACH - Requirements for the Compilation of Safety Data Sheets
KÜHN, BIRETT (German), Data Sheets of Hazardous Substances

Revisions/Updates

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

You find our current Versions of SDS in Internet:

<http://www.mn-net.com/SDS> [U.S. English]