

# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740956.250  
Printing Date: 04.04.2023

NucleoSpin RNA Virus (250)  
Date of Issue: 03.03.2023

Page: 1/15  
Version: 2.2.6.10

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

#### 1.1 Product Identifier / Product Name

REF 740956.250  
Product Name NucleoSpin RNA Virus (250)

1 x 30 mL RE  
5 x 0.09-1.0 mg Carrier RNA  
1 x 30 mL RNase-free H<sub>2</sub>O  
5 x 35 mL RAV1  
1 x 50 mL RAV3  
1 x 150 mL RAW

UFI: ME7V-33GF-F20U-XTDK

#### 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](mailto:sds@mn-net.com) ([msds@mn-net.com](mailto: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

Signal Word

WARNING

##### Hazard Identification

H226  
H302  
H315  
H319  
H412

##### Hazard Classes/Categories

Flam. Liq. 3  
Acute Tox. 4 oral  
Skin Irrit. 2  
Eye Irrit. 2  
Aquatic Chronic 3

#### 2.1 Classification of the substance or mixture

0.09-1.0 mg Carrier RNA

Do not need labelling as hazardous



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Signal Word -

No Hazard Class

### 150 mL RAW



GHS02 GHS07

Signal Word WARNING

Hazard Identification	Hazard Classes/Categories
-----------------------	---------------------------

H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2

### 35 mL RAV1



GHS07

Signal Word WARNING

Hazard Identification	Hazard Classes/Categories
-----------------------	---------------------------

H302	Acute Tox. 4 oral
H412	Aquatic Chronic 3

### 30 mL RNase-free H<sub>2</sub>O

Signal Word Do not need labelling as hazardous

No Hazard Class -

### 50 mL RAV3

Signal Word Do not need labelling as hazardous

No Hazard Class -

### 30 mL RE

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.



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**0.09-1.0 mg Carrier RNA**

Do not need labelling as hazardous  
 Signal Word: -

**150 mL RAW**



GHS02 GHS07

Signal Word: WARNING  
 H226, H302, H315, H319  
 Flammable liquid and vapor. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.  
 P210, P264W, P280sh, P301+312, P330  
 Wash with water thoroughly after handling. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wear protective gloves/eye protection. Rinse mouth.

**35 mL RAW1**



GHS07

Signal Word: WARNING

**30 mL RNase-free H<sub>2</sub>O**

Do not need labelling as hazardous  
 Signal Word: -

**50 mL RAW3**

Do not need labelling as hazardous  
 Signal Word: -

**30 mL RE**

Do not need labelling as hazardous  
 Signal Word: -

**Label elements of the complete product**



GHS02 GHS07

Signal Word: WARNING  
 H226, H302, H315, H319  
 Flammable liquid and vapor. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.  
 P210, P264W, P280sh, P301+312, P330  
 Wash with water thoroughly after handling. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wear protective gloves/eye protection. Rinse mouth.

**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. Vapour forms explosive mixtures with air. 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.

**Information pertaining to particular Risks to the Environment**

**PBT:** not applicable  
**vPvB:** not applicable



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### Possible endocrine disrupting effects

This substance/mixture contains components considered to have endocrinedisrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

## SECTION 3: Composition/Information on Ingredients

### 3.1 Substances or 3.2 Mixtures

#### 150 mL RAW

Substance name:	<i>guanidine hydrochloride</i>		
CAS No.:	50-01-1		
Substance rating:	H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2		
Chemical Formula:	CH <sub>6</sub> ClN <sub>3</sub>		
Synonyms (de):	Guanidiniumchlorid		
REACH Reg. No.:	01-2119977063-35-0005		
EC No.:	200-002-3	Indice No.:	607-148-00-0
Concentration:	24 - <36 %		
acc. GHS:	H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2		
Substance name:	<i>ethanol</i>		
CAS No.:	64-17-5		
	(denatured with 1% 2-butanone)		
Substance rating:	H225, Flam. Liq. 2		
Chemical Formula:	C <sub>2</sub> H <sub>6</sub> O; C <sub>2</sub> H <sub>5</sub> OH		
Synonyms (de):	Äthylalkohol, vergällter Spiritus		
REACH Reg. No.:	01-2119457610-43-xxxx		
EC No.:	200-578-6	Indice No.:	603-002-00-5
Concentration:	35 - <55 %		
acc. GHS:	H226, Flam. Liq. 3		

#### 50 mL RAV3

Substance name:	<i>chemicals/mixture until 1%</i>		
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.		

#### 30 mL RE

Substance name:	<i>chemicals/mixture until 1%</i>		
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.		

#### 35 mL RAV1

Substance name:	<i>guanidinium thiocyanate</i>		
CAS No.:	593-84-0		
Substance rating:	H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1C, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3		
Chemical Formula:	C <sub>2</sub> H <sub>6</sub> N <sub>4</sub> S		
Synonyms (de):	Guanidiniumrhodanid		
REACH Reg. No.:	01-2120735072-65-0001		
EC No.:	209-812-1	Indice No.:	615-004-00-3
Concentration:	45 - <60 %		
acc. GHS:	H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3		



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Substance name: *Triton® X-100*  
 CAS No.: 9002-93-1

Substance rating: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1, H410, Aquatic Chronic 2  
 Chemical Formula: C<sub>33</sub>H<sub>60</sub>O<sub>10,5</sub>  
 Synonyms (de): Octylphenoxyethoxyethanol  
**SVHC listed: listed (19/12/2012) Cand. Lst. REACH Art59(10)+Annex XIV No. 42 (-2023)**  
 Concentration: 0,25 - <2,5 %  
 acc. GHS: H412, Aquatic Chronic 3

### 30 mL RNase-free H<sub>2</sub>O

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

Substance rating: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: H<sub>2</sub>O  
 REACH Reg. No.: exempt, Annex IV  
 EC No.: 231-791-2  
 Concentration: 90 - <100 %  
 acc. GHS: The criteria for classification are not fulfilled.

### 0.09-1.0 mg Carrier RNA

Substance name: *carrier RNA*  
 CAS No.: 26763-19-9

Substance rating: No criteria for classification or naming of chemical is not required.  
 Synonyms (de): Polyadenylic acid, K salt  
 Concentration: 90 - <100 %  
 acc. GHS: The criteria for classification are not fulfilled.

## 3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%. List of Hazard and Precaution phrases: see section 16.2.

## SECTION 4: First-Aid Measures

### 4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice.

#### 4.1.1 After SKIN Contact

Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.

#### 4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

#### 4.1.3 After INHALATION of Vapors

After inhalation of foam or vapor fresh air should be inhaled. Keep airways free.

#### 4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralize it. Contact medical advice for possible consequences.

### 4.2 Most important Symptoms and Effects, both acute and delayed

Causes serious eye irritation.

### 4.3 Indication of any immediate Medical Attention and Special Treatment needed

After SKIN CONTACT rinse with water for a long time. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive substance. Further treatment must to be carried out by an eye specialist. ---



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### 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

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. The substance/mixture is flammable. Product package burns like paper or plastic. Cool any undamaged containers in water, and remove from the danger zone if possible. Heating will lead to an increase in pressure, and a danger of bursting. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

#### 5.4 Additional Information

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

### SECTION 6: Accidental Release Measures

#### 6.1 Personal Precautions, Protective Equipment and Emergency Procedure

Do not breathe vapors. Wear suitable protective gloves (see 8.2.2). Wear eye protection. Keep product away from sources of ignition - No smoking. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

#### 6.2 Environmental Precautions

PBT: not applicable  
vPvB: not applicable

#### 6.3 Methods and Material for Containment and Cleaning up

Bind any escaping liquid with inert absorbent.

And dispose in accordance to local regulations for the disposal of hazards. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into sewer.

#### 6.4 Reference to other Sections

see information in section 5.4,7,8 and 13

### SECTION 7: Handling and Storage

#### 7.1 Precautions for Safe Handling

Handling in accordance with the test instruction, that comes with the product.

#### 7.2 Conditions for Safe Storage, including any Incompatibilities

The original product package allows a safe storage. Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 3

Water hazard class (DE): 3

##### 7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

#### 7.3 Specific End Use(s)

Product for analytical use.

### SECTION 8: Exposure Controls/Personal Protection

#### 8.1 Control Parameters

##### 150 mL RAW

Chemical: *guanidine hydrochloride*

CAS No.: 50-01-1

DNEL: [inh] 3.5 mg/m<sup>3</sup>

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): -



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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/m<sup>3</sup>  
 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/m<sup>3</sup>  
 [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/m<sup>3</sup>

### 50 mL RAV3

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

### 30 mL RE

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

### 35 mL RAV1

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
 DNEL: [inh] 1092 µg/m<sup>3</sup>  
 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: *Triton® X-100* CAS No.: 9002-93-1

### 30 mL RNase-free H<sub>2</sub>O

Chemical: *water* CAS No.: 7732-18-5

### 0.09-1.0 mg Carrier RNA

Chemical: *carrier RNA* CAS No.: 26763-19-9

## 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

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



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Do not release product into environment.

### SECTION 9: Physical and Chemical Properties

#### 9.1 Information on Basic Physical and Chemical Properties

##### 150 mL RAW

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	23 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	5-5.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	0.98 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

##### 50 mL RAV3

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

##### 30 mL RE

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	0 °C
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	8-9
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.0 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available



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### 35 mL RAV1

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:	7.0-7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.12 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 30 mL RNase-free H<sub>2</sub>O

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

### 0.09-1.0 mg Carrier RNA

a) State of aggregation:	solid (lyophilized)
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:	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



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### 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**

## 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

But avoid reactions with oxidizing agents. Can form very reactive substances with oxidizing agents. Possibility: &H:EUH031& No further data available.

### 10.4 Conditions to avoid

But formation of explosive gases/vapours with air is possible. Use only in well ventilated rooms. No more required.

### 10.5 Incompatible Materials

Avoid storage with oxidizing substances. ---

### 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.

#### 150 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 : 3181-7655 µg/m³/4H

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<sub>Low</sub> ihl gpg : 21,900 mg/L

LC<sub>Low</sub> orl hmn : 1400 mg/kg

LC50 ihl mus : 123,4 mg/L/4H

LC50 ihl rat : 115,9-133,8 mg/L/4H

LD50 orl mus : 3450 mg/kg

#### 50 mL RAV3

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

TSCA Inventory: all listed, <1%

#### 30 mL RE

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

TSCA Inventory: all listed, <1%



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### 35 mL RAV1

Chemical:	<i>guanidinium thiocyanate</i>	CAS No.:	593-84-0
TSCA Inventory:	listed	California Prop. 65 List:	not listed
Canada CEPA 1999:	DSL yes		
LD50 orl rat :	593 mg/kg		
LC50 ihl rat :	5,319 mg/L/4H		
Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.			
Chemical:	<i>Triton® X-100</i>	CAS No.:	9002-93-1
TSCA Inventory:	listed		
LD50 orl rat :	707-1800 mg/kg		

### 30 mL RNase-free H<sub>2</sub>O

Chemical:	<i>water</i>	CAS No.:	7732-18-5
TSCA Inventory:	listed		
LD50 orl rat :	> 90000 mg/kg		

### 0.09-1.0 mg Carrier RNA

Chemical:	<i>carrier RNA</i>	CAS No.:	26763-19-9
LD50 orl rat :	11250 mg/kg		
LD50 orl mus :	13791 mg/kg		
LD50 scu rat :	1493 mg/kg		

## 11.2 Other Hazards

### Possible endocrine disrupting effects

This substance/mixture contains components considered to have endocrinedisrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

### Other Information

no additional data available

## SECTION 12: Ecological Information

### 12.1 Toxicity

Following information is valid for pure chemicals.

#### 150 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: *ethanol*

PNEC (fresh water) :	0.96 mg/L	CAS No.:	64-17-5
PNEC = Predicted No Effected Concentration			
LC50 daphnia magna/48h :	>100 g/L		
LC50 pimephales promelas/96h :	13.4-15.1 g/L		
LC50 leuciscus idus/96h :	[48h] 8.14 g/L		
LC50 fish/96h :	13 g/L		
EC50 daphnia/48h :	9.3-14.2 g/L		
IC50 scenedesmus quadricauda/72h :	[7d] 5000 mg/L		
EC10 pseudomonas putita/16h :	[EC5] 6500 mg/L		
Partition Coefficient (o/w) :	-0,31		

#### 50 mL RAV3

Chemical:	<i>chemicals/mixture until 1%</i>	CAS No.:	-
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#### 30 mL RE

Chemical:	<i>chemicals/mixture until 1%</i>	CAS No.:	-
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### 35 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 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  
 Partition Coefficient (o/w): -1,11 pH 5.1

Chemical: *Triton® X-100* CAS No.: 9002-93-1  
 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).

### 30 mL RNase-free H<sub>2</sub>O

Chemical: *water* CAS No.: 7732-18-5

### 0.09-1.0 mg Carrier RNA

Chemical: *carrier RNA* CAS No.: 26763-19-9

## 12.2 Persistence and Degradability

not necessary

## 12.3 Bioaccumulative Potential

not necessary

## 12.4 Mobility in Soil

not necessary

## 12.5 Results of PBT and vPvB Assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

## 12.6 Endocrine disrupting properties

This substance/mixture contains components considered to have endocrinedisrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

## 12.7 Other Adverse Effects

no additional data available

## SECTION 13: Disposal Considerations

Do not collect in acidic waste. May form toxic gases.  
 Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (RCRA Code D002/D003, EU waste code number 16 05 06).

### 13.1 Waste Treatment Methods

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

## SECTION 14: Transport Information

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

Transportation by Road

Classification code: F1

Limited Quantity: 5 L

Excepted Quantity: E 1

Air Transportation

Limited Quantity: LQ 7

Excepted Quantity: E 1

PAX: 355

CAO: 366

Maritime Transport

Tunnel restriction code: D/E

Special instructions: 640E

max. weight PAX: 60 L

max. weight CAO: 220 L



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EmS: F-E, S-E 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 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](http://www.mn-net.com)

### 15.2 Chemical Safety Assessment

not necessary for these small amounts

## SECTION 16: Other Information

### 16.1 Changes compared to the last version

Between versions 2.2.6.10 and 2.2.2.2 following changes were applied: - 4 composition data corrected - 8 substance data corrected

### 16.2 List of Hazard and Precaution Phrases

#### 16.2.1 List of relevant H Phrases

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

#### 16.2.2 List of relevant P Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P264W	Wash with water thoroughly after handling.
P280sh	Wear protective gloves/eye protection.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.

### 16.3 Recommended Restriction on Use

Only for Professional User.

Look about employee restrictions for young people!

Look about employee restrictions for pregnant women and nursing women!

An individual package of this product or test kit has a moderate hazardous potential.

### 16.4 Sources of Key Data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021

Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres

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

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

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)



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Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progress (11th ATP)  
 Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)  
 Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)  
 TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019  
 Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)  
 Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG  
 Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)  
 Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)  
 Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)

**revisions/updates**

*Reason for revision:* 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary  
 2014-04 adjustment according Regulation 487/2013/EU  
 2016-03 adjustment according Regulation 1221/2015/EU  
 2017-08 adjustment according the Ordinance on Ethanol Denaturation 2016/1867/EU  
 2017-11 adjustment according the ECHA registration dossier  
 2022-11 adjustment according Regulation 878/2020/EU

### 16.5 Further Information

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### 16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive
COD:	chemical oxigen demand
C_SCL:	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)



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NRD: Non-rapidly degradable  
 onchorhynchus mykiss: fish, rainbow trout  
 orl: oral  
 OSHA: Occupational Safety and Health Administration  
 PAX: transport on passenger planes allowed  
 PBT: persistent, bioaccumulating, toxic substance  
 pH: pH value  
 pimephales promelas: fish, fathead minnow  
 PNEC: Predicted No Effect Concentration  
 PROC 15: Process category 'for laboratory use'  
 PRTR: Law for PRTR and Promotion of Chemical Management (Jp)  
 PVC: polyvinyl chloride  
 quail: bird, quail  
 rat: rat  
 rbt: rabbit  
 RD: rapidly degradable  
 RE: repeated  
 REACh: Registration, Evaluation, Authorisation and Restriction of Chemicals  
 REF: item number, reference number  
 Reg.No.: rRegistration number  
 Repr: harmful to reproduction  
 Resp: respiratory  
 scu: sub cutan  
 RIP: REACH Implementations Projects  
 SDS: safety data sheet  
 Sens: sensitisation  
 STEL: short term exposure limit  
 STOT: Specific Target Organ Toxicity  
 SVHC: Substance of Very High Concern  
 t/a: tons per year  
 TCCA: Toxic Chemicals Control Act (S. Korea)  
 Tox: toxic  
 TSCA: The Toxic Substances Control Act (US)  
 TWA: time weighted average  
 TRGS: technical regulations (DE)  
 vPvB: very persistent, very bioaccumulating substance

### 16.7 Training Advice

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

