

# Safety Data Sheet

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

Edition: 04

SPEEDTOOLS TOTAL

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Date Updated:29/04/2021

RNA EXTRACTION KIT

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

### 1.1 Product identifier

REF 21.211 - 21.212  
Product name SPEEDTOOLS TOTAL RNA EXTRACTION KIT

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 25 mL DBR  
1 x 25 mL LYSIS BUFFER LR  
1 x 12 mL WASH BUFFER WR2  
1 x 13 mL WASH BUFFER WR1  
1 x 1000 U rDNase (Iyo)  
1 x 7 mL Buffer for rDNase  
1 x 13 mL RNase-free H<sub>2</sub>O

### 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

Biotoools, B & M Labs, S.A  
Valle de Tobalina – 52 – Nave 39  
28021 Madrid  
SPAIN

Tel: +34 91 710 00 74  
Fax: +34 91 505 31 18

### 1.4 Emergency telephone number

Please contact Biotoools distributor in your country. Spain only: 91 562 04 20

## SECTION 2: Hazard identification

### 2.0 Classification of the complete product



GHS02 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H334	Resp. Sens. 1
H412	Aquatic Chronic 3

### 2.1 Classification of the substance or mixture

25 mL DBR

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GHS02

Signal word

WARNING

**Hazard identification**

**Hazard classes/categories**

H226

Flam. Liq. 3

**25 mL LR**



GHS07

Signal word

WARNING

**Hazard identification**

**Hazard classes/categories**

H302

Acute Tox. 4 oral

H412

Aquatic Chronic 3

**12 mL WR2**

Signal word

Do not need labelling as hazardous

No hazard class

-

**13 mL WR1**



GHS02



GHS07

Signal word

WARNING

**Hazard identification**

**Hazard classes/categories**

H226

Flam. Liq. 3

H302

Acute Tox. 4 oral

**1000 U rDNase (Iyo)**



GHS08

Signal word

DANGER

**Hazard identification**

**Hazard classes/categories**

H334

Resp. Sens. 1

**7 mL Buffer for rDNase**

Do not need labelling as hazardous

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Signal word -

No hazard class

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

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.

### 25 mL DBR



GHS02

Signal word:

### WARNING 25 mL LR



GHS07

Signal word: WARNING

H412

Harmful to aquatic life with long lasting effects.

### 12 mL WR2

Do not need labelling as hazardous

Signal word: -

### 13 mL WR1



GHS02



GHS07

Signal word: WARNING

### 1000 U rDNase (lyo)



GHS08

Signal word: DANGER

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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 Buffer for rDNase

Do not need labelling as hazardous  
Signal word: -

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

Do not need labelling as hazardous  
Signal word: -

## 2.3 Other hazards

### Possible hazards from physicochemical properties

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

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances or 3.2 Mixtures

#### 25 mL DBR

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		
Formula:	C <sub>2</sub> H <sub>6</sub> N <sub>4</sub> 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:	<i>ethanol</i> (diluted < 20 %) (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)	CAS No.:	64-17-5d
Classification:	H225, Flam. Liq. 2		
Formula:	C <sub>2</sub> H <sub>6</sub> O; C <sub>2</sub> H <sub>5</sub> 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 LR

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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<sub>2</sub>H<sub>6</sub>N<sub>4</sub>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: 45 - <60 %  
 acc. CLP (GHS): H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3

## 12 mL WR2

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.

## 13 mL WR1

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1  
 Classification: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2  
 Formula: CH<sub>6</sub>ClN<sub>3</sub>  
 Pseudonym: guanidinium chloride  
 TSCA Inventory: listed  
 REACH Reg. No.: 01-2119977063-35-0005  
 EC No.: 200-002-3 Indice No.: 607-148-00-0  
 RTECS: MF4300000 MFCD: 00013026  
 KE No.: KE-18111  
 Concentration: 24 - <36 %  
 acc. CLP (GHS): H302, Acute Tox. 4 oral

Chemical: *ethanol* CAS No.: 64-17-5  
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)  
 Classification: H225, Flam. Liq. 2  
 Formula: C<sub>2</sub>H<sub>6</sub>O; C<sub>2</sub>H<sub>5</sub>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: 20 - <35 %  
 acc. CLP (GHS): H226, Flam. Liq. 3

## 1000 U rDNase (lyo)

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 Buffer for rDNase

Chemical: *chemicals/mixture < 2%* CAS No.: -  
 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.

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

Chemical: *water*

CAS No.: 7732-18-5

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

Formula: H<sub>2</sub>O

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.

### 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. ---

### 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

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## 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

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product. Use only in well-ventilated working areas.

### 7.2 Conditions for safe storage, including any incompatibilities

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

#### 25 mL DBR

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0

DNEL: [inh] 1092 µg/m<sup>3</sup>

DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: 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.: 64-17-5d

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m<sup>3</sup>

DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 ppm / 380 mg/m<sup>3</sup>

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/m<sup>3</sup>

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>

#### 25 mL LR

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0

DNEL: [inh] 1092 µg/m<sup>3</sup>

DNEL = Derived No-Effect Level (for workers)

PNEC<sub>(fresh water)</sub>: 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

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OSHA: not listed

## 12 mL WR2

Chemical: *chemicals/mixture < 1%*

CAS No.: -

## 13 mL WR1

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<sub>(fresh water)</sub> :

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<sub>(fresh water)</sub> : 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m<sup>3</sup> / 380 mg/m<sup>3</sup>  
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/m<sup>3</sup>

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: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>

## 1000 U rDNase (Iyo)

Chemical: *rDNase*

CAS No.: 9003-98-9

## 7 mL Buffer for rDNase

Chemical: *chemicals/mixture < 2%*

CAS No.: -

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

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.



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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### 25 mL DBR

Appearance: liquid	Colour: colourless	Odor: alcoholic
pH:	6.7-7.2	
Flash point:	55 °C	
Specific gravity:	1.01 g/cm <sup>3</sup>	

#### 25 mL LR

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	6.5-7.5	
Specific gravity:	1.13 g/cm <sup>3</sup>	

#### 12 mL WR2

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	7-8	
Specific gravity:	1.00 g/cm <sup>3</sup>	

#### 13 mL WR1

Appearance: liquid	Colour: colourless	Odor: alcoholic
pH:	6.5-7.5	
Flash point:	28 °C	

#### 1000 U rDNase (lyo)

Appearance: solid (lyoph.)	Colour: white	Odor: odorless
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#### 7 mL Buffer for rDNase

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	6.5-7.5	
Specific gravity:	1.01 g/cm <sup>3</sup>	

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

Appearance: liquid	Colour: colourless	Odor: odorless
pH:	6-8	
Specific gravity:	1.0 g/cm <sup>3</sup>	

### 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

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## 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.

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## 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.

#### 25 mL DBR

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 PDSCL:		not listed
Japan ISHL:	not listed		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	not listed		
LD50 <sub>orl rat</sub> :	593 mg/kg		
LC50 <sub>drm rbt</sub> :	>2000 mg/m <sup>3</sup>		
LC50 <sub>ihl rat</sub> :	[4h] 5.319 mg/L		
LD50 <sub>ipr mus</sub> :	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		
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 ≥0,1%/≥0,1%, Article 57-2 (SDS required)		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	KE-13217		
LD50 <sub>orl rat</sub> :	6200 mg/kg		
LC <sub>LoWihl</sub> gpg :	21.9 g/m <sup>3</sup>		
LC <sub>Loworl</sub> hmn :	1400 mg/kg		
LC50 <sub>ihl mouse</sub> :	[4h] 39 g/m <sup>3</sup>		
LC50 <sub>ihl rat</sub> :	[10h] 20 g/m <sup>3</sup>		
LD50 <sub>drm rbt</sub> :	20 000 mg/kg		
LD50 <sub>oral mouse</sub> :	3450 mg/kg		
TRGS 905 (DE):	K5, M5, R <sub>F</sub> C		

#### 25 mL LR

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 PDSCL:		not listed
Japan ISHL:	not listed		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	not listed		
LD50 <sub>orl rat</sub> :	593 mg/kg		
LC50 <sub>drm rbt</sub> :	>2000 mg/m <sup>3</sup>		
LC50 <sub>ihl rat</sub> :	[4h] 5.319 mg/L		
LD50 <sub>ipr mus</sub> :	300 mg/kg		

Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

#### 12 mL WR2

Chemical:	<i>chemicals/mixture &lt; 1%</i>	CAS No.:	-
TSCA Inventory:	all listed, <1%		
Korea Exist.Chem.Inventory:	listed		

#### 13 mL WR1

Chemical:	<i>guanidine hydrochloride</i>	CAS No.:	50-01-1
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		

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South Korea TCCA: not listed  
Korea Exist.Chem.Inventory: KE-18111  
LD50<sub>orl rat</sub>: 475-907 mg/kg  
LC50<sub>ihl rat</sub>: [4h] 3181-7655 µg/m<sup>3</sup>  
LD50<sub>drm rbt</sub>: 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 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 ≥0,1%/≥0,1%, Article 57-2 (SDS required)  
South Korea TCCA: not listed  
Korea Exist.Chem.Inventory: KE-13217  
LD50<sub>orl rat</sub>: 6200 mg/kg  
LC<sub>LoWhl</sub> gpg: 21.9 g/m<sup>3</sup>  
LC<sub>LoWorl</sub> hmn: 1400 mg/kg  
LC50<sub>ihl mouse</sub>: [4h] 39 g/m<sup>3</sup>  
LC50<sub>ihl rat</sub>: [10h] 20 g/m<sup>3</sup>  
LD50<sub>drm rbt</sub>: 20 000 mg/kg  
LD50<sub>oral mouse</sub>: 3450 mg/kg  
TRGS 905 (DE): K5, M5, R<sub>F</sub> C

## 1000 U rDNase (Iyo)

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 Buffer for rDNase

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

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

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.

#### 25 mL DBR

Chemical: *guanidinium thiocyanate* CAS No.: 593-84-0  
PNEC(fresh water): 42.4 µg/L  
PNEC = Predicted No Effect Concentration  
LC50<sub>fish/96h</sub>: [4d] 89.1 mg/L  
EC50<sub>daphnia/48h</sub>: 42.4 mg/L  
IC50<sub>scenedesmus quadricauda/72h</sub>: 130 mg/L  
EC10<sub>pseudomonas putida/16h</sub>: [10d] 200 mg/L  
Water hazard class (DE): 3

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Dispersion coefficient(octanol-water) : [pH 5.1] -1.11  
Storage class (VCI): 12

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 LR

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

## 12 mL WR2

Chemical: *chemicals/mixture < 1%*

CAS No.: -

Water hazard class (DE): 1  
Storage class (VCI): 12-13

## 13 mL WR1

Chemical: *guanidine hydrochloride*

CAS No.: 50-01-1

PNEC(fresh water) : -  
PNEC = Predicted No Effected Concentration  
LC50leuciscus idus/96h : 1759 mg/L  
LC50fish/96h : [4d] 690-1850; [48h] 1758-2420 mg/L  
EC50daphnia/48h : 70.2 mg/L  
EC10pseudomonas putita/16h : [72h] 11.8-33.5 mg/L  
Water hazard class (DE): 1 WGK No.: 0788  
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

## 1000 U rDNase (Iyo)

Chemical: *rDNase*

CAS No.: 9003-98-9

Water hazard class (DE): 1 WGK No.: n.n.  
Storage class (VCI): 13

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## 7 mL Buffer for rDNase

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

CAS No.: -

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

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** ( $\leq 30$  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

Tunnel restriction code: E

Special instructions: 640E

#### Air transport

PAX: 355

max. weight PAX: 60 L

CAO: 366

max. weight CAO: 220 L

#### Maritime transport

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 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

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](http://www.mn-net.com)

Look for your country-specific regulations.

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## 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.
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.
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

BIOTOOLS B&M LABS S.A. 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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### 16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS

Regulation 487/2013/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress

Regulation 669/2018/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress

Regulation 1480/2018/EU, 4<sup>th</sup> 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 Adaption of new ethanol denaturation 2016/1867/EU

2017-11 Adaption of ECHA Registration dossier