

# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740140.20 NucleoBond RNA Soil (20) Page: 1/17  
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### Section 1: Identification

#### 1.1 Product Identifier / Product Name

REF	740140.20
Product Name	NucleoBond RNA Soil (20)
-	1 x 70 mL E1
	1 x 10 mL E2
	1 x 125 mL E3
	1 x 180 mL E4
	1 x 6 mL E5
	1 x 250 mL EQU
	1 x 125 mL ERNA
	1 x 10 mL OPT
	80 x 1 Bead Tube Type A (ceramic beads)
	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.  
 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



GHS02

Signal Word WARNING

<b>Hazard Identification</b>	<b>Hazard Classes/Categories</b>
H226	Flam. Liq. 3

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

70 mL E1

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

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### 10 mL E2

Signal Word Do not need labelling as hazardous  
-

No Hazard Class

### 125 mL E3

Signal Word Do not need labelling as hazardous  
-

No Hazard Class

### 180 mL E4



GHS02  
Signal Word WARNING

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3

### 6 mL E5

Signal Word Do not need labelling as hazardous  
-

No Hazard Class

### 250 mL EQU

Signal Word Do not need labelling as hazardous  
-

No Hazard Class

### 125 mL ERNA



GHS02  
Signal Word WARNING

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3

### 10 mL OPT

Signal Word Do not need labelling as hazardous  
-

No Hazard Class

### 1 Bead Tube Type A (ceramic beads)

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 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.

### 70 mL E1

Do not need labelling as hazardous

Signal Word: -

### 10 mL E2

Do not need labelling as hazardous

Signal Word: -

### 125 mL E3

Do not need labelling as hazardous

Signal Word: -

### 180 mL E4



GHS02

Signal Word: WARNING

H226

Flammable liquid and vapor.

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

### 6 mL E5

Do not need labelling as hazardous

Signal Word: -

### 250 mL EQU

Do not need labelling as hazardous

Signal Word: -

### 125 mL ERNA



GHS02

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Signal Word: WARNING

### 10 mL OPT

Do not need labelling as hazardous  
Signal Word: -

### 1 Bead Tube Type A (ceramic beads)

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. Vapor 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. ---

### Information pertaining to particular Risks to Human and possible Symptoms

-

### 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

#### 70 mL E1

Chemical: *dodecyl sulfate, sodium salt* CAS No.: 151-21-3  
 Classification: H228, Flam. Sol. 1, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1, H332, Acute Tox. 4 inh., H335, STOT SE 3, H412, Aquatic Chronic 3  
 Chemical Formula: C<sub>12</sub>H<sub>25</sub>NaO<sub>4</sub>S  
 Synonyms: sodium lauryl sulfate, sulfuric acid monododecyl ester sodium salt  
 TSCA Inventory: listed  
 RTECS: WT1050000 MFCD: 00036175  
 EC No.: 205-788-1  
 Weight Percent: 1 - <2,5 %  
 acc. GHS: The criteria for classification are not fulfilled.

Chemical: *sodium chloride* CAS No.: 7647-14-5  
 Classification: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: NaCl  
 Synonyms: salt  
 TSCA Inventory: listed  
 RTECS: VZ4725000  
 EC No.: 231-598-3  
 Weight Percent: 1 - <5 %  
 acc. GHS: The criteria for classification are not fulfilled.

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1  
 Classification: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: C<sub>4</sub>H<sub>11</sub>NO<sub>3</sub>  
 Synonyms: Trometamol, 2-amino-2-(hydroxymethyl)-1,3-propanediol  
 TSCA Inventory: listed  
 RTECS: TY2900000 MFCD: 00004679  
 EC No.: 201-064-4  
 Weight Percent: 1 - <3 %  
 acc. GHS: The criteria for classification are not fulfilled.



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Chemical: *ethanol* (diluted < 20 %) CAS No.: 64-17-5d  
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)  
 Classification: 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: ethyl alcohol, methylated spirit  
 TSCA Inventory: listed  
 RTECS: KQ6300000 MFCB: 00003568  
 EC No.: 200-578-6 Indice No.: 603-002-00-5  
 Weight Percent: 5 - <20 %  
 acc. GHS: H226, Flam. Liq. 3

Chemical: *lithium chloride* CAS No.: 7447-41-8  
 Classification: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2  
 Chemical Formula: LiCl  
 TSCA Inventory: listed  
 RTECS: OJ5950000  
 EC No.: 231-212-3  
 Weight Percent: 1 - <10 %  
 acc. GHS: The criteria for classification are not fulfilled.

Chemical: *chemicals/mixture < 1%* 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.

### 10 mL OPT

Chemical: *acetate buffer solution* CAS No.: -  
 Classification: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: CH<sub>3</sub>COOH/K/Na•H<sub>2</sub>O  
 TSCA Inventory: all listed  
 Weight Percent: 15 - <25 %  
 acc. GHS: The criteria for classification are not fulfilled.

### 1 Bead Tube Type A (ceramic beads)

Chemical: *Ceramic particles* CAS No.: -  
 Classification: No criteria for classification or naming of chemical is not required.  
 TSCA Inventory: not applicable  
 Weight Percent: 95 - <100 %  
 acc. GHS: The criteria for classification are not fulfilled.

### 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 is not required.  
 Chemical Formula: H<sub>2</sub>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

## 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

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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.

### 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

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

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## 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. 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.

### 5.4 Additional Information

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## Section 6: Accidental Release Measures

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

Do not breathe vapors. Keep product away from sources of ignition - No smoking. Regular staff training is necessary.

### 6.2 Environmental Precautions

not necessary

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

Bind any escaping liquid with inert absorbent.  
Collect small amounts of leaked liquid and flush with water into sewer.

### 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.

### 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.

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### Section 8: Exposure Controls/Personal Protection

#### 8.1 Control Parameters

##### 70 mL E1

Chemical: *dodecyl sulfate, sodium salt* CAS No.: 151-21-3  
 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: *sodium chloride* CAS No.: 7647-14-5

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1  
 DNEL: [derm] 166.7 mg/kg bw/day; [inh] 117.5 mg/m<sup>3</sup>  
 DNEL = Derived No-Effect Level (for workers)  
 PNEC<sub>(fresh water)</sub>: no data mg/L  
 PNEC = Predicted No Effected 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

##### 10 mL E2

Chemical: *acetate buffer solution* CAS No.: -

##### 125 mL E3

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

##### 180 mL E4

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 Effected 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 Effected 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>

##### 6 mL E5

Chemical: *inorganic salts, declaration not necessary* CAS No.: -

##### 250 mL EQU

Chemical: *potassium chloride* CAS No.: 7447-40-7

##### 125 mL ERNA

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 Effected 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>

Chemical: *lithium chloride* CAS No.: 7447-41-8  
 DNEL: 73.2<sub>derm</sub> mg/kg bw/d; 10<sub>inh</sub> mg/m<sup>3</sup>  
 DNEL = Derived No-Effect Level (for workers)  
 PNEC<sub>(fresh water)</sub>: 1.2 mg/L  
 PNEC = Predicted No Effected Concentration





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Chemical: <i>chemicals/mixture &lt; 1%</i>	CAS No.: -
<b>10 mL OPT</b> Chemical: <i>acetate buffer solution</i>	CAS No.: -
<b>1 Bead Tube Type A (ceramic beads)</b> Chemical: <i>Ceramic particles</i>	CAS No.: -
<b>13 mL RNase-free H<sub>2</sub>O</b> Chemical: <i>water</i>	CAS No.: 7732-18-5

### 8.2 Exposure Controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.

#### 8.2.1 Respiratory Protection

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.

#### 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

#### 70 mL E1

a) Appearance: liquid	Color: colorless	b) Odor: odorless
c) Odor Threshold:	data not available	
d) pH:	6.5-7.5	
e) Melting Point:	data not available	
f) Boiling Point:	data not available	
g) Flash Point:	data not available	
h) Evaporation Rate <sub>(ether=1)</sub> :	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 <sub>(air=1)</sub> :	data not available	
m) Specific Gravity:	1.02 g/cm <sup>3</sup>	
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:	---	

#### 10 mL E2

a) Appearance: liquid	Color: colorless	b) Odor: acetic
c) Odor Threshold:	data not available	
d) pH:	5-6	
e) Melting Point:	data not available	
f) Boiling Point:	data not available	
g) Flash Point:	data not available	
h) Evaporation Rate <sub>(ether=1)</sub> :	data not available	

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- i) Flammability (solid, gas): data not available
- j) Explosive Limits: data not available
- k) Vapor Pressure (68°F): data not available
- l) Vapor Density<sub>(air=1)</sub> : data not available
- m) Specific Gravity: 1.19 g/cm<sup>3</sup>
- 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: ---

**125 mL E3**

- 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<sub>(ether=1)</sub> : 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<sub>(air=1)</sub> : data not available
- m) Specific Gravity: 1.0 g/cm<sup>3</sup>
- 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: ---

**180 mL E4**

- a) Appearance: liquid Color: colorless b) Odor: alcoholic
- c) Odor Threshold: data not available
- d) pH: 6.5-7.5
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: 35 °C
- h) Evaporation Rate<sub>(ether=1)</sub> : 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<sub>(air=1)</sub> : data not available
- m) Specific Gravity: 0.98 g/cm<sup>3</sup>
- 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: ---

**6 mL E5**

- a) Appearance: liquid Color: colorless b) Odor: odorless
- c) Odor Threshold: data not available
- d) pH: 7.5-8
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: data not available
- h) Evaporation Rate<sub>(ether=1)</sub> : 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<sub>(air=1)</sub> : data not available



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- m) Specific Gravity: 1.01 g/cm<sup>3</sup>
- 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: ---

### 250 mL EQU

- a) Appearance: liquid Color: colorless b) Odor: odorless
- c) Odor Threshold: data not available
- d) pH: 6-7
- 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: 1.05 g/cm<sup>3</sup>
- 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: ---

### 125 mL ERNA

- a) Appearance: liquid Color: colorless b) Odor: alcoholic
- c) Odor Threshold: data not available
- d) pH: 6.5-7.5
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: 36 °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<sup>3</sup>
- 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: ---

### 10 mL OPT

- a) Appearance: liquid Color: colorless b) Odor: acetic
- 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: data not available
- n) Soluble in Water: data not available
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available



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### 10.4 Conditions to avoid

Not necessary. But can form explosive gases/vapour with air. Use only in a well-ventilated working areas. ---

### 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.

#### 70 mL E1

Chemical:	<i>dodecyl sulfate, sodium salt</i>	CAS No.:	151-21-3
TSCA Inventory:	listed	California Prop. 65 List:	not listed
Canada CEPA 1999:	DSL yes		
LD50 <sub>orl rat</sub> :	1288 mg/kg		
LC50 <sub>inh rat</sub> :	3900 <sub>1h</sub> mg/m <sup>3</sup>		
LD50 <sub>drm rbt</sub> :	10 g/kg		

Chemical:	<i>sodium chloride</i>	CAS No.:	7647-14-5
TSCA Inventory:	listed		
LD50 <sub>orl rat</sub> :	3000 mg/kg		
LD50 <sub>drm rbt</sub> :	10 g/kg		

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

#### 10 mL E2

Chemical:	<i>acetate buffer solution</i>	CAS No.:	-
TSCA Inventory:	all listed		

#### 125 mL E3

Chemical:	<i>water</i>	CAS No.:	7732-18-5
TSCA Inventory:	listed		

#### 180 mL E4

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 <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 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 <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		

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### 6 mL E5

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

### 250 mL EQU

Chemical: *potassium chloride* CAS No.: 7447-40-7  
 TSCA Inventory: listed  
 LD50<sub>orl rat</sub>: 2600 mg/kg

### 125 mL ERNA

Chemical: *ethanol* CAS No.: 64-17-5d  
 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<sub>orl rat</sub>: 6200 mg/kg  
 LC<sub>LoWhl</sub> gpg: 21.9 g/m<sup>3</sup>  
 LC<sub>LoWorl</sub> hmh: 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

Chemical: *lithium chloride* CAS No.: 7447-41-8  
 TSCA Inventory: listed  
 LD50<sub>orl rat</sub>: 526 mg/kg

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

### 10 mL OPT

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

### 1 Bead Tube Type A (ceramic beads)

Chemical: *Ceramic particles* CAS No.: -  
 TSCA Inventory: not applicable

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

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

## Section 12: Ecological Information

### 12.1 Toxicity

Following information is valid for pure chemicals.

#### 70 mL E1

Chemical: *dodecyl sulfate, sodium salt* CAS No.: 151-21-3  
 LC50<sub>daphnia magna/48h</sub>: 6.3 mg/L  
 LC50<sub>fish/96h</sub>: 1.31-22.5 mg/L  
 Partition Coefficient (o-w): 1.6

Chemical: *sodium chloride* CAS No.: 7647-14-5

Chemical: *tris(hydroxymethyl)aminomethane* CAS No.: 77-86-1  
 PNEC (fresh water): no data mg/L  
 PNEC = Predicted No Effect Concentration  
 LC50<sub>fish/96h</sub>: LD0 (4d): 1-10 g/L  
 EC50<sub>pseudokirchneriella subcapitata/72h</sub>: 397;48h: 473 mg/L  
 EC10<sub>pseudomonas putida/16h</sub>: 13h g/L

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Partition Coefficient (o-w): -1.56

**10 mL E2**

Chemical: *acetate buffer solution*

CAS No.: -

**125 mL E3**

Chemical: *water*

CAS No.: 7732-18-5

**180 mL E4**

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 putita/16h</sub> : [10d] 200 mg/L  
Partition Coefficient (o-w): [pH 5.1] -1.11

Chemical: *ethanol*

CAS No.: 64-17-5d

PNEC(fresh water) : 0.96 mg/L  
PNEC = Predicted No Effect Concentration

LC50<sub>daphnia magna/48h</sub> : >100 g/L  
LC50<sub>pimephales promelas/96h</sub> : 13.4-15.1 g/L  
LC50<sub>leuciscus idus/96h</sub> : [48h] 8.14 g/L  
LC50<sub>fish/96h</sub> : 13 g/L  
EC50<sub>daphnia/48h</sub> : 9.3-14.2 g/L  
IC50<sub>scenedesmus quadricauda/72h</sub> : [7d] 5000 mg/L  
EC10<sub>pseudomonas putita/16h</sub> : [EC5] 6500 mg/L  
Partition Coefficient (o-w): -0.31

**6 mL E5**

Chemical: *inorganic salts, declaration not necessary*

CAS No.: -

**250 mL EQU**

Chemical: *potassium chloride*

CAS No.: 7447-40-7

**125 mL ERNA**

Chemical: *ethanol*

CAS No.: 64-17-5d

PNEC(fresh water) : 0.96 mg/L  
PNEC = Predicted No Effect Concentration

LC50<sub>daphnia magna/48h</sub> : >100 g/L  
LC50<sub>pimephales promelas/96h</sub> : 13.4-15.1 g/L  
LC50<sub>leuciscus idus/96h</sub> : [48h] 8.14 g/L  
LC50<sub>fish/96h</sub> : 13 g/L  
EC50<sub>daphnia/48h</sub> : 9.3-14.2 g/L  
IC50<sub>scenedesmus quadricauda/72h</sub> : [7d] 5000 mg/L  
EC10<sub>pseudomonas putita/16h</sub> : [EC5] 6500 mg/L  
Partition Coefficient (o-w): -0.31

Chemical: *lithium chloride*

CAS No.: 7447-41-8

PNEC(fresh water) : 1.2 mg/L  
PNEC = Predicted No Effect Concentration

LC50<sub>fish/96h</sub> : 158 mg/L  
EC50<sub>daphnia/48h</sub> : 249 mg/L  
EC50<sub>pseudokirchneriella subcapitata/72h</sub> : IC50/72h: 400 mg/L

Chemical: *chemicals/mixture < 1%*

CAS No.: -

**10 mL OPT**

Chemical: *acetate buffer solution*

CAS No.: -

**1 Bead Tube Type A (ceramic beads)**

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Chemical: *Ceramic particles*

CAS No.: -

13 mL RNase-free H<sub>2</sub>OChemical: *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 (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 - 14.4: No dangerous goods according to the Transport regulations (Ethanol: ADR SI144/ IATA A58)

### 14.5 Environmental Hazards

none, contains only small quantities of hazardous 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 &amp; 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 ---



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### 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.

##### 16.1.2 List of relevant P Phrases

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

#### 16.2 Training Advice

Multiple safety training of staffs about danger and protection by using hazards in working area.

#### 16.3 Recommended Restriction on Use

Only for Professional User.

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

#### 16.4 Further Information

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#### 16.5 Sources of Key Data

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

EU-Directive 1999/92/EC Minimum Requirements for Improving the Safety and Health Protection of Workers at Risk from potentially Explosive Atmospheres

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]