

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744210.4

NucleoMag Pathogen (4x96)

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Printing Date: 01.10.2019

Date of Issue: 24.07.2019

Section 1: Identification

1.1 Product Identifier / Product Name

REF	744210.4
Product Name	NucleoMag Pathogen (4x96)
-	1 x 10 mL B-Beads
	4 x 500 µL Carrier RNA Buffer
	4 x 0.09-1.0 mg Carrier RNA
	3 x 110 mL NPB2
	1 x 125 mL NPE5
	1 x 100 mL NPL1
	1 x 300 mL NPW3
	1 x 300 mL NPW4
	1 x 15 mL PB
	3 x 75 mg Proteinase K (lyo)

1.2 Relevant identified Uses of the Substance or Mixture and Uses advised against

Relevant identified uses
 Product for Analytical Use.
 The Exposure scenario is integrated into sections 1-16.
Uses advised against
 not described

1.3 Details of the Supplier and of the Safety Data Sheet

Manufactured by:
 MACHEREY-NAGEL GmbH & Co. KG
 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY
 Tel.: +49 2421 969 0

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

1.4 Emergency Telephone Number

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

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

Section 2: Hazard(s) Identification

2.0 Classification of the complete Product



Signal Word DANGER

Hazard Identification	Hazard Classes/Categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H334	Resp. Sens. 1
H412	Aquatic Chronic 3

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

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10 mL B-Beads

Signal Word

Do not need labelling as hazardous

No Hazard Class

500 µL Carrier RNA Buffer



Signal Word

GHS07

WARNING

Hazard Identification

Hazard Classes/Categories

H302
H412

Acute Tox. 4 oral
Aquatic Chronic 3

0.09-1.0 mg Carrier RNA

Signal Word

Do not need labelling as hazardous

No Hazard Class

110 mL NPB2



Signal Word

GHS02

GHS07

WARNING

Hazard Identification

Hazard Classes/Categories

H226
H302

Flam. Liq. 3
Acute Tox. 4 oral

125 mL NPE5

Signal Word

Do not need labelling as hazardous

No Hazard Class

100 mL NPL1



Signal Word

GHS07

WARNING

Hazard Identification

Hazard Classes/Categories

H302
H319

Acute Tox. 4 oral
Eye Irrit. 2

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300 mL NPW3



GHS02 GHS07

Signal Word

WARNING

Hazard Identification

Hazard Classes/Categories

H226
H302

Flam. Liq. 3
Acute Tox. 4 oral

300 mL NPW4



GHS02 GHS07

Signal Word

WARNING

Hazard Identification

Hazard Classes/Categories

H226
H302

Flam. Liq. 3
Acute Tox. 4 oral

15 mL PB

Signal Word

Do not need labelling as hazardous
-

No Hazard Class

75 mg Proteinase K (Iyo)



GHS07 GHS08

Signal Word

DANGER

Hazard Identification

Hazard Classes/Categories

H315
H319
H334

Skin Irrit. 2
Eye Irrit. 2
Resp. Sens. 1

2.2 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

According to the implementation of GHS immediate packages only must be labelled with product identifier(s), GHS symbol(s), signal word, manufacturer name and phone number (OSHA's interpretation of HCS 2012).

Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2) / **until 100 mL** (Canada WHMIS 2015). This labelling exemption does not apply to U.S.A. This labelling exemption is NOT valid for sensibilizing substances.

10 mL B-Beads

Do not need labelling as hazardous
Signal Word: -

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500 µL Carrier RNA Buffer



GHS07

Signal Word: WARNING

0.09-1.0 mg Carrier RNA

Do not need labelling as hazardous

Signal Word: -

110 mL NPB2



GHS02



GHS07

Signal Word: WARNING

125 mL NPE5

Do not need labelling as hazardous

Signal Word: -

100 mL NPL1



GHS07

Signal Word: WARNING

300 mL NPW3



GHS02



GHS07

Signal Word: WARNING

H226, H302

Flammable liquid and vapor. Harmful if swallowed.

P210, P264W, P301+312, P330

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wash with water thoroughly after handling. IF

SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

300 mL NPW4



GHS02



GHS07

Signal Word: WARNING

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H226, H302
Flammable liquid and vapor. Harmful if swallowed.

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

15 mL PB

Do not need labelling as hazardous
Signal Word: -

75 mg Proteinase K (lyo)



GHS07 GHS08

Signal Word: DANGER

H334
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261sh, P342+311
Avoid breathing dust/vapors. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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. 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

Cause after oral intake, impairments of health when ingested in small quantities. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Kit contains small amounts of enzymes, which may cause sensitization by direct and repeated contact. -

Information pertaining to particular Risks to the Environment

PBT: not applicable

vPvB: not applicable

Other Hazards

Section 3: Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

10 mL B-Beads

Chemical: *magnetic particles, suspended in water*

CAS No.: -

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

TSCA Inventory: listed (CAS 1309-38-2)

Weight Percent: 1 - <15 %

acc. GHS: The criteria for classification are not fulfilled.

500 µL Carrier RNA Buffer

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

Chemical Formula: C₂ H₆ N₄ S

Synonyms: guanidine rhodanide

TSCA Inventory: listed

RTECS: XL1225000

MFCD: 00013027

EC No.: 209-812-1

Indice No.: 615-004-00-3

Weight Percent: 30 - <45 %

acc. GHS: H302, Acute Tox. 4 oral, H412, Aquatic Chronic 3

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0.09-1.0 mg Carrier RNA

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

110 mL NPB2

Chemical: *ethanol* CAS No.: 64-17-5
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
 Classification: H225, Flam. Liq. 2
 Chemical Formula: C₂ H₆ O; C₂ H₅ OH
 Synonyms: ethyl alcohol, methylated spirit
 TSCA Inventory: listed
 RTECS: KQ6300000 MFCD: 00003568
 EC No.: 200-578-6 Indice No.: 603-002-00-5
 Weight Percent: 35 - <55 %
 acc. GHS: H226, Flam. Liq. 3

Chemical: *sodium perchlorate* CAS No.: 7601-89-0
 Classification: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral
 Chemical Formula: NaClO₄
 TSCA Inventory: listed
 RTECS: SC9800000 MFCD: -
 EC No.: 231-511-9 Indice No.: 017-010-00-6
 Weight Percent: 15 - <40 %
 acc. GHS: H302, Acute Tox. 4 oral

125 mL NPE5

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.

100 mL NPL1

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
 Classification: H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2
 Chemical Formula: CH₆ ClN₃
 Synonyms: guanidinium chloride
 TSCA Inventory: listed
 RTECS: MF4300000 MFCD: 00013026
 EC No.: 200-002-3 Indice No.: 607-148-00-0
 Weight Percent: 36 - <50 %
 acc. GHS: H302, Acute Tox. 4 oral, H319, Eye Irrit. 2

Chemical: *polyoxyethylene sorbitan monolaurate (Tween® 20)* CAS No.: 9005-64-5
 Classification: No criteria for classification or naming of chemical is not required.
 Chemical Formula: C₅₈ H₁₁₄ O₂₆
 Synonyms: Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivs.
 TSCA Inventory: listed
 RTECS: TR7400000 MFCD: 00165986
 Weight Percent: 10 - <20 %
 acc. GHS: The criteria for classification are not fulfilled.

300 mL NPW3

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Chemical: *ethanol* CAS No.: 64-17-5
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
 Classification: H225, Flam. Liq. 2
 Chemical Formula: C₂H₆O; C₂H₅OH
 Synonyms: ethyl alcohol, methylated spirit
 TSCA Inventory: listed
 RTECS: KQ6300000 MFCD: 00003568
 EC No.: 200-578-6 Indice No.: 603-002-00-5
 Weight Percent: 20 - <35 %
 acc. GHS: H226, Flam. Liq. 3

Chemical: *sodium perchlorate* CAS No.: 7601-89-0
 Classification: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral
 Chemical Formula: NaClO₄
 TSCA Inventory: listed
 RTECS: SC9800000 MFCD: -
 EC No.: 231-511-9 Indice No.: 017-010-00-6
 Weight Percent: 15 - <40 %
 acc. GHS: H302, Acute Tox. 4 oral

300 mL NPW4

Chemical: *ethanol* CAS No.: 64-17-5
 (denatured with 1%IPA/1%MEK, acc.2016/1867/EU)
 Classification: H225, Flam. Liq. 2
 Chemical Formula: C₂H₆O; C₂H₅OH
 Synonyms: ethyl alcohol, methylated spirit
 TSCA Inventory: listed
 RTECS: KQ6300000 MFCD: 00003568
 EC No.: 200-578-6 Indice No.: 603-002-00-5
 Weight Percent: 20 - <35 %
 acc. GHS: H226, Flam. Liq. 3

Chemical: *sodium perchlorate* CAS No.: 7601-89-0
 Classification: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral
 Chemical Formula: NaClO₄
 TSCA Inventory: listed
 RTECS: SC9800000 MFCD: -
 EC No.: 231-511-9 Indice No.: 017-010-00-6
 Weight Percent: 15 - <40 %
 acc. GHS: H302, Acute Tox. 4 oral

15 mL PB

Chemical: *glycerole* CAS No.: 56-81-5
 Classification: No criteria for classification or naming of chemical is not required.
 Chemical Formula: C₃H₈O₃
 Synonyms: glycerin, 1,2,3-propanetriol
 TSCA Inventory: listed (1,2,3-Propanetriol)
 RTECS: MA8050000 MFCD: 00004722
 EC No.: 200-289-5 Indice No.: n/a
 Weight Percent: 10 - <50 %
 acc. GHS: The criteria for classification are not fulfilled.

75 mg Proteinase K (Iyo)

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

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

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Section 4: First-Aid Measures

4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Take to a doctor, in a raised position if there are breathing difficulties.

4.1.1 After SKIN Contact

Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.

4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open with eye washing bottle, eye douche or running water (protect intact eye).

4.1.3 After INHALATION of Vapors

After inhalation of foam or vapor fresh air should be inhaled. Keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function.

4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested.

4.2 Most important Symptoms and Effects, both acute and delayed

Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled. ---

4.3 Indication of any immediate Medical Attention and Special Treatment needed

Inform patient respectively further measures and the possibility of long-term damages. ---

Section 5: Fire-Fighting Measures

5.1 Extinguishable Media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like WATER FOG, WATER SPRAY, alcohol-resistant FOAM, DRY CHEMICAL, CARBON DIOXIDE can be used.

5.2 Special Hazards arising from the Substance or Mixture

WARNING: Flammable. May form explosive vapor-air mixtures. Formation of hazardous and caustic vapor-air mixtures possible. ---

5.3 Advice for Firefighters

No, for listed product. 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 vapors 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). 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

not necessary, contains only small amounts of these substances

6.3 Methods and Material for Containment and Cleaning up

Bind any escaping liquid with inert absorbent.

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

6.4 Reference to other Sections

see information in section 5.4 ---

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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

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (VCI): 3

Water hazard class (DE): 3

7.2.1 Conditions for Safe Storage, including any Incompatibilities

Keep original product packages tightly closed during handling and storage.

7.3 Specific End Use(s)

Product for analytical use.

Section 8: Exposure Controls/Personal Protection

8.1 Control Parameters

10 mL B-Beads

Chemical: *magnetic particles, suspended in water*

CAS No.: -

500 µL Carrier RNA Buffer

Chemical: *guanidinium thiocyanate*

CAS No.: 593-84-0

DNEL: [inh] 1092 µg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 42.4 µg/L

PNEC = Predicted No Effect Concentration

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

0.09-1.0 mg Carrier RNA

Chemical: *carrier RNA*

CAS No.: 26763-19-6

110 mL NPB2

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *sodium perchlorate*

CAS No.: 7601-89-0

DNEL: [derm] 2.16 mg/kg bw/day; [inh] 0.28 mg/m³

DNEL = Derived No-Effect Level (for workers)

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

125 mL NPE5

Chemical: *chemicals/mixture < 1%*

CAS No.: -

100 mL NPL1

Chemical: *guanidine hydrochloride*

CAS No.: 50-01-1

DNEL: [inh] 3.5 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): -

PNEC = Predicted No Effect Concentration

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

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Chemical: *polyoxyethylene sorbitan monolaurate (Tween® 20)* CAS No.: 9005-64-5

300 mL NPW3

Chemical: *ethanol* CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *sodium perchlorate* CAS No.: 7601-89-0

DNEL: [derm] 2.16 mg/kg bw/day; [inh] 0.28 mg/m³

DNEL = Derived No-Effect Level (for workers)

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

300 mL NPW4

Chemical: *ethanol* CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

NIOSH: [TWA] 1000 ppm / 1900 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1000 ppm / 1900 mg/m³

Chemical: *sodium perchlorate* CAS No.: 7601-89-0

DNEL: [derm] 2.16 mg/kg bw/day; [inh] 0.28 mg/m³

DNEL = Derived No-Effect Level (for workers)

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

15 mL PB

Chemical: *glycerole* CAS No.: 56-81-5

DNEL: [inh] 56 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 0.885 mg/L

PNEC = Predicted No Effect Concentration

75 mg Proteinase K (Iyo)

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

8.2 Exposure Controls

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

8.2.1 Respiratory Protection

Use for open access of these substances for example a vapor/dust respirator, class A/AX. No additional recommendations.

8.2.2 Hand Protection

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

8.2.3 Eye/Face Protection

Yes, Splash Goggles.

8.2.4 Skin Protection

Recommended to avoid contamination with these hazards.

8.2.5 Hygiene Measures

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

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Section 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

10 mL B-Beads

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

500 µL Carrier RNA Buffer

a)	Appearance: liquid	Color: colorless	b) Odor: fusty, mouldy
c)	Odor Threshold:	data not available	
d)	pH:	5.5-6	
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:	1.08 g/cm ³	
n)	Soluble in Water:	data not available	
o)	Partition Coefficient (o-w):	data not available	
p)	Autoignition Temperature:	data not available	
q)	Decomposition temperature:	data not available	
r)	Viscosity:	data not available	
s)	Explosive properties:	data not available	
t)	Oxidizing properties:	---	

0.09-1.0 mg Carrier RNA

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

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110 mL NPB2

a)	Appearance: liquid	Color: colorless	b) Odor: alcoholic
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:	24 °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:	data not available	
n)	Soluble in Water:	data not available	
o)	Partition Coefficient (o-w):	data not available	
p)	Autoignition Temperature:	data not available	
q)	Decomposition temperature:	data not available	
r)	Viscosity:	data not available	
s)	Explosive properties:	data not available	
t)	Oxidizing properties:	---	

125 mL NPE5

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

100 mL NPL1

a)	Appearance: liquid	Color: slightly yellow	b) Odor: odorless
c)	Odor Threshold:	data not available	
d)	pH:	3.5-4	
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:	1.15 g/cm ³	
n)	Soluble in Water:	data not available	
o)	Partition Coefficient (o-w):	data not available	
p)	Autoignition Temperature:	data not available	
q)	Decomposition temperature:	data not available	
r)	Viscosity:	data not available	
s)	Explosive properties:	data not available	
t)	Oxidizing properties:	---	

300 mL NPW3

a)	Appearance: liquid	Color: colorless	b) Odor: alcoholic
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- c) Odor Threshold: data not available
- d) pH: 4.5-5.5
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: 26 °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: 1.06 g/cm³
- n) Soluble in Water: data not available
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

300 mL NPW4

- a) Appearance: liquid Color: colorless b) Odor: alcoholic
- c) Odor Threshold: data not available
- d) pH: 4.5-5.5
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: 26 °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: 1.06 g/cm³
- n) Soluble in Water: data not available
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

15 mL PB

- a) Appearance: liquid Color: colorless b) Odor: alcoholic
- c) Odor Threshold: data not available
- d) pH: data not available
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: data not available
- h) Evaporation Rate_(ether=1): data not available
- i) Flammability (solid, gas): data not available
- j) Explosive Limits: data not available
- k) Vapor Pressure (68°F): data not available
- l) Vapor Density_(air=1): data not available
- m) Specific Gravity: 1.11 g/cm³
- n) Soluble in Water: data not available
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

75 mg Proteinase K (Iyo)

- a) Appearance: solid (lyoph.) Color: slightly grey b) Odor: odorless
- c) Odor Threshold: data not available
- d) pH: data not available
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: data not available

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h)	Evaporation Rate _(ether=1) :	data not available
i)	Flammability (solid, gas):	data not available
j)	Explosive Limits:	data not available
k)	Vapor Pressure (68°F):	data not available
l)	Vapor Density _(air=1) :	data not available
m)	Specific Gravity:	data not available
n)	Soluble in Water:	data not available
o)	Partition Coefficient (o-w):	data not available
p)	Autoignition Temperature:	data not available
q)	Decomposition temperature:	data not available
r)	Viscosity:	data not available
s)	Explosive properties:	data not available
t)	Oxidizing properties:	---

9.2 Other Information

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

Relevant Properties of Substance Group

Section 10: Stability and Reactivity

10.1 Reactivity

No further data available.

10.2 Chemical Stability

No known instability.

10.3 Possibility of Hazardous Reactions

But avoid reactions with oxidizing agents. Can form very reactive substances with oxidizing agents. Possibility: Contact with acids liberates toxic gas. No further data available.

10.4 Conditions to avoid

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

10.5 Incompatible Materials

Avoid contact with strong acids or alkalines. 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.

10 mL B-Beads

Chemical:	<i>magnetic particles, suspended in water</i>	CAS No.: -
TSCA Inventory:	listed (CAS 1309-38-2)	

500 µL Carrier RNA Buffer

Chemical:	<i>guanidinium thiocyanate</i>	CAS No.: 593-84-0
TSCA Inventory:	listed	California Prop. 65 List: not listed
Canada CEPA 1999:	DSL yes	
LD ₅₀ _{oral rat} :	593 mg/kg	
LC ₅₀ _{drum rbt} :	>2000 mg/m ³	
LC ₅₀ _{ihl rat} :	[4h] 5.319 mg/L	
LD ₅₀ _{ipr mus} :	300 mg/kg	

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

0.09-1.0 mg Carrier RNA

Chemical:	<i>carrier RNA</i>	CAS No.: 26763-19-6
TSCA Inventory:	listed (CAS 9001-99-4)	

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110 mL NPB2

Chemical: *ethanol* CAS No.: 64-17-5
 TSCA Inventory: listed California Prop. 65 List: not listed
 ACGIH: 1000 ppm
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
 Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
 Canada CEPA 1999: DSL yes
 LD50_{orl rat}: 6200 mg/kg
 LC_{LoWihl} gpg: 21.9 g/m³
 LC_{LoWorl} hmn: 1400 mg/kg
 LC50_{ihl mouse}: [4h] 39 g/m³
 LC50_{ihl rat}: [10h] 20 g/m³
 LD50_{drm rbt}: 20 000 mg/kg
 LD50_{oral mouse}: 3450 mg/kg

Chemical: *sodium perchlorate* CAS No.: 7601-89-0
 TSCA Inventory: listed California Prop. 65 List: not listed
 Canada CEPA 1999: DSL Yes
 LD50_{orl rat}: 2100 mg/kg
 LD50_{ipr mus}: 551 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

125 mL NPE5

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

100 mL NPL1

Chemical: *guanidine hydrochloride* CAS No.: 50-01-1
 TSCA Inventory: listed California Prop. 65 List: not listed
 Canada CEPA 1999: DSL yes
 LD50_{orl rat}: 475-907 mg/kg
 LC50_{ihl rat}: [4h] 3181-7655 µg/m³
 LD50_{drm rbt}: 2000 mg/kg

Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.
 Chemical: *polyoxyethylene sorbitan monolaurate (Tween® 20)* CAS No.: 9005-64-5
 TSCA Inventory: listed

300 mL NPW3

Chemical: *ethanol* CAS No.: 64-17-5
 TSCA Inventory: listed California Prop. 65 List: not listed
 ACGIH: 1000 ppm
 Exposure Routes: inhalation, ingestion, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
 Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic
 Canada CEPA 1999: DSL yes
 LD50_{orl rat}: 6200 mg/kg
 LC_{LoWihl} gpg: 21.9 g/m³
 LC_{LoWorl} hmn: 1400 mg/kg
 LC50_{ihl mouse}: [4h] 39 g/m³
 LC50_{ihl rat}: [10h] 20 g/m³
 LD50_{drm rbt}: 20 000 mg/kg
 LD50_{oral mouse}: 3450 mg/kg

Chemical: *sodium perchlorate* CAS No.: 7601-89-0
 TSCA Inventory: listed California Prop. 65 List: not listed
 Canada CEPA 1999: DSL Yes
 LD50_{orl rat}: 2100 mg/kg
 LD50_{ipr mus}: 551 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

300 mL NPW4

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

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Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
 Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
 liver damage; anemia; reproductive, teratogenic
 Canada CEPA 1999: DSL yes
 LD50_{orl rat}: 6200 mg/kg
 LC_{LoWihl} gpg: 21.9 g/m³
 LC_{LoWorl} hmn: 1400 mg/kg
 LC50_{ihl mouse}: [4h] 39 g/m³
 LC50_{ihl rat}: [10h] 20 g/m³
 LD50_{drm rbt}: 20 000 mg/kg
 LD50_{oral mouse}: 3450 mg/kg

Chemical: *sodium perchlorate* CAS No.: 7601-89-0
 TSCA Inventory: listed California Prop. 65 List: not listed
 Canada CEPA 1999: DSL Yes
 LD50_{orl rat}: 2100 mg/kg
 LD50_{ipr mus}: 551 mg/kg
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

15 mL PB

Chemical: *glycerole* CAS No.: 56-81-5
 TSCA Inventory: listed (1,2,3-Propanetriol)
 Exposure Routes: inhalation, skin and/or eye contact
 Target Organs: Eyes, skin, respiratory system, kidneys
 Symptoms: irritation eyes, skin, respiratory system; headache, nausea, vomiting; kidney injury
 LD50_{orl rat}: 12.6 g/kg
 LD50_{drm rbt}: >18.7 g/kg

75 mg Proteinase K (Iyo)

Chemical: *proteinase K (origin: tritirachium album)* CAS No.: 39450-01-6
 TSCA Inventory: listed (CAS 102925-54-2)
 Acute Effects: Cause after impairments of health when ingested in small quantities.
 Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Section 12: Ecological Information

12.1 Toxicity

Following information is valid for pure chemicals.

10 mL B-Beads

Chemical: *magnetic particles, suspended in water* CAS No.: -

500 µL Carrier RNA Buffer

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

0.09-1.0 mg Carrier RNA

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

110 mL NPB2

Chemical: *ethanol* CAS No.: 64-17-5
 PNEC_(fresh water): 0.96 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{daphnia magna/48h}: >100 mg/L
 LC50_{pimephales promelas/96h}: 13400 - 15100 mg/L
 LC50_{leuciscus idus/96h}: [48h] 8140 mg/L
 LC50_{fish/96h}: 13 g/L

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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

Chemical: *sodium perchlorate* CAS No.: 7601-89-0

125 mL NPE5

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

100 mL NPL1

Chemical: *guanidine hydrochloride* 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: *polyoxyethylene sorbitan monolaurate (Tween® 20)* CAS No.: 9005-64-5

300 mL NPW3

Chemical: *ethanol* CAS No.: 64-17-5

PNEC_(fresh water) : 0.96 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{daphnia magna/48h} : >100 mg/L
 LC50_{pimephales promelas/96h} : 13400 - 15100 mg/L
 LC50_{leuciscus idus/96h} : [48h] 8140 mg/L
 LC50_{fish/96h} : 13 g/L
 EC50_{daphnia/48h} : 9.3-14.2 g/L
 IC50_{scenedesmus quadricauda/72h} : [7d] 5000 mg/L
 EC10_{pseudomonas putita/16h} : [EC5] 6500 mg/L
 Partition Coefficient (o-w): -0.31

Chemical: *sodium perchlorate* CAS No.: 7601-89-0

300 mL NPW4

Chemical: *ethanol* CAS No.: 64-17-5

PNEC_(fresh water) : 0.96 mg/L
 PNEC = Predicted No Effected Concentration
 LC50_{daphnia magna/48h} : >100 mg/L
 LC50_{pimephales promelas/96h} : 13400 - 15100 mg/L
 LC50_{leuciscus idus/96h} : [48h] 8140 mg/L
 LC50_{fish/96h} : 13 g/L
 EC50_{daphnia/48h} : 9.3-14.2 g/L
 IC50_{scenedesmus quadricauda/72h} : [7d] 5000 mg/L
 EC10_{pseudomonas putita/16h} : [EC5] 6500 mg/L
 Partition Coefficient (o-w): -0.31

Chemical: *sodium perchlorate* CAS No.: 7601-89-0

15 mL PB

Chemical: *glycerole* CAS No.: 56-81-5

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

75 mg Proteinase K (Iyo)

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

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12.2 Persistence and Degradability

not necessary

12.3 Bioaccumulative Potential

not necessary

12.4 Mobility in Soil

not necessary

12.5 Results of PBT and vPvB Assessment

no data available

12.6 Other Adverse Effects

no additional data available

Section 13: Disposal Considerations

Do not collect in acidic waste. May form toxic gases.

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (RCRA Code D002/D003, EU waste code number 16 05 06).

13.1 Waste Treatment Methods

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

Section 14: Transport Information

14.1. UN/NA: 1993 14.2. Proper Shipping Name: Flammable liquid, n.o.s. (ethanol mixture)

14.3. Hazard Class: 3 14.4. Packing Group: III

Transportation by Road

Classification code: F1

Limited Quantity: 5 L

Excepted Quantity: E 1

Air Transportation

PAX: 355

CAO: 366

Maritime Transport

EmS: F-E, S-E

Tunnel restriction code: E

Special instructions: 640E

max. weight PAX: 60 L

max. weight CAO: 220 L

Storage Category: A

14.5 Environmental Hazards

none, contains only small quantities of hazardous substances, contains only small amounts of these substances

14.6 Special Precautions for User

not necessary

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

not applicable

Section 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

U.S. Federal Regulations

OSHA "A Guide to The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"

<https://www.osha.gov/dsg/hazcom/ghs.html>

29 CFR 1910.1200 Hazard communication.

NIOSH Pocket Guide to Chemical Hazards

NIOSH Workplace Safety & Health Topics

TSCA Inventory

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

Canada

Canada CEPA 1999 - Domestic Substances List (DSL), List of Toxic Substances (Schedule 1)

MN Leaflet/User manual, also see www.mn-net.com

15.2 Chemical Safety Assessment

not necessary for these small amounts ---

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

16.1.2 List of relevant P Phrases

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

16.2 Training Advice

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

16.3 Recommended Restriction on Use

Only for Professional User.
 Look about employee restrictions for young people!
 Look about employee restrictions for pregnant women and nursing women!
 An individual package of this product or test kit has a moderate hazardous potential.

16.4 Further Information

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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]

