

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744352.4

NucleoMag RNA Blood (4x96)

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Printing Date: 06.02.2024

Date of Issue: 05.02.2024

Version: 2.15.3.1

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

1.1 Product Identifier / Product Name

REF 744352.4
Product Name NucleoMag RNA Blood (4x96)

1 x 60 mL RNase-free H₂O
4 x 1.8 mL B-Beads
1 x 7 mL Liquid Proteinase K
3 x 60 mL Reaction Buffer for rDNase
1 x 200 mL MRB1
1 x 300 mL MRB2
1 x 125 mL MRB2
12 x Size D rDNase

UFI: TTWV-43C9-R202-NTGN

UFI: JRCV-E309-S20K-0VHT

UFI: H0AV-936C-N20Q-S1VH

UFI: H0AV-936C-N20Q-S1VH

UFI: 8SGV-63EY-520U-3WWU

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

Relevant identified uses

Product for analytical use.

Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0

The exposure scenario is integrated into sections 1-16.

Uses advised against

not described

1.3 Details of the Supplier and of the Safety Data Sheet

Manufactured by:

MACHEREY-NAGEL GmbH & Co. KG
Valenciennner Str. 11, 52355 Düren, Germany
Phone: +49 2421 969 0

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

1.4 Emergency Telephone Number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.

USA: American Association Of Poison Control Centers

Rockville, MD 20857. tel. 1-800-222-1222, <<https://www.poisonhelp.org>>

DE: Gemeinsames Giftinformationszentrum (GGIZ)

99089 Erfurt tel. +49 361 730 730

<<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet:

<<http://www.mn-net.com/SDS>>

SECTION 2: Hazard(s) Identification

2.0 Classification of the complete Product



GHS02



GHS07



GHS08

Signal Word

DANGER

Hazard Identification

H225

H302

H319

H334

H336

Hazard Classes/Categories

Flam. Liq. 2

Acute Tox. 4 oral

Eye Irrit. 2

Resp. Sens. 1

resp. irrit. STOT SE 3

2.1 Classification of the substance or mixture

7 mL Liquid Proteinase K

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GHS08

Signal Word

DANGER

Hazard Identification

H334

Hazard Classes/Categories

Resp. Sens. 1

125 mL MRB2



GHS02



GHS07

Signal Word

WARNING

Hazard Identification

H226

H302

Hazard Classes/Categories

Flam. Liq. 3

Acute Tox. 4 oral

300 mL MRB2



GHS02



GHS07

Signal Word

WARNING

Hazard Identification

H226

H302

Hazard Classes/Categories

Flam. Liq. 3

Acute Tox. 4 oral

200 mL MRB1



GHS02



GHS07

Signal Word

DANGER

Hazard Identification

H225

H319

H336

Hazard Classes/Categories

Flam. Liq. 2

Eye Irrit. 2

resp. irrit. STOT SE 3

60 mL RNase-free H₂O

Signal Word

Do not need labelling as hazardous

-

No Hazard Class

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Size D rDNase



GHS08

Signal Word

DANGER

Hazard Identification

Hazard Classes/Categories

H334

Resp. Sens. 1

60 mL Reaction Buffer for rDNase

Signal Word

Do not need labelling as hazardous

-

No Hazard Class

1.8 mL B-Beads

Signal Word

Do not need labelling as hazardous

-

No Hazard Class

List of H phrases: see section 16.2

2.2

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

According the implementation of GHS immediate packages only must be labelled with product identifier(s), GHS symbol(s), signal word, manufacturer name and phone number (OSHA's interpretation of HCS 2012). Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2) / **until 100 mL** (Canada WHMIS 2015). This labelling exemption does not apply to U.S.A. This labelling exemption is NOT valid for sensilizing substances.

7 mL Liquid Proteinase K



GHS08

Signal Word: DANGER

H334

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

P261sh, P284, P342+311, P501

Avoid breathing dust/vapors.[In case of inadequate ventilation] wear respiratory protection.If experiencing respiratory symptoms: Call a POISON CENTER/doctor.Dispose of contents/container to regulated waste treatment.

125 mL MRB2



GHS02



GHS07

Signal Word: WARNING

300 mL MRB2



GHS02



GHS07

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Signal Word: WARNING

H226, H302

Flammable liquid and vapor. Harmful if swallowed.

P210, P233, P241, P242, P243, P264W, P270, P280, P301+312, P303+361+353, P330, P403+235, P501

Wash with water thoroughly after handling. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take precautionary measures against static discharge. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Rinse mouth. Store in a well-ventilated place. Keep cool. Dispose of contents/container to regulated waste treatment.

200 mL MRB1



GHS02



GHS07

Signal Word: DANGER

H225, H319, H336

Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.

P210, P241, P242, P243, P261, P264, P271, P280sh, P303+361+353, P305+351+338, P312, P337+313, P403+235, P405, P501

Avoid breathing dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take precautionary measures against static discharge. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container to regulated waste treatment.

60 mL RNase-free H₂O

Do not need labelling as hazardous

Signal Word: -

Size D rDNase



GHS08

Signal Word: DANGER

H334

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

P261sh, P284, P342+311, P501

Avoid breathing dust/vapors. [In case of inadequate ventilation] wear respiratory protection. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. Dispose of contents/container to regulated waste treatment.

60 mL Reaction Buffer for rDNase

Do not need labelling as hazardous

Signal Word: -

1.8 mL B-Beads

Do not need labelling as hazardous

Signal Word: -

Label elements of the complete product



GHS02



GHS07



GHS08

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Signal Word: DANGER

H225, H302, H319, H334, H336

Highly flammable liquid and vapor. Harmful if swallowed. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause drowsiness or dizziness.

P210, P241, P242, P243, P261sh, P264W, P270, P271, P280sh, P284, P301+312, P303+361+353, P305+351+338, P330, P337+313, P342+311, P403+235, P405, P501

Avoid breathing dust/vapors. Wash with water thoroughly after handling. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take precautionary measures against static discharge. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection. [In case of inadequate ventilation] wear respiratory protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse mouth. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container to regulated waste treatment.

2.3 Other Hazards

Possible Hazards from physicochemical Properties

In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. Vapour forms explosive mixtures with air.

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. May cause drowsiness or dizziness.

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

Possible endocrine disrupting effects

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

SECTION 3: Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

7 mL Liquid Proteinase K

Substance name: *proteinase K, liquid*

CAS No.: 39450-01-6

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2, H334, Resp. Sens. 1

Chemical Formula: Enzyme Comm. No. 3.4.21.64, origin: tritirachium album

Synonyms (de): Endopeptidase K

EC No.: 254-457-8

Indice No.: 647-014-00-9

Concentration: 1 - <3 %

acc. GHS: H334, Resp. Sens. 1

Substance name: *glycerole*

CAS No.: 56-81-5

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

Chemical Formula: C₃H₈O₃

Synonyms (de): 1,2,3-Propantriol

REACH Reg. No.: 01-2119471987-18-xxxx

EC No.: 200-289-5

Indice No.: n/a

Concentration: 10 - <50 %

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

125 mL MRB2



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Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone)
Substance rating: H225, Flam. Liq. 2
Chemical Formula: C_2H_6O ; C_2H_5OH
Synonyms (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 20 - <35 %
acc. GHS: H226, Flam. Liq. 3

Indice No.: 603-002-00-5

Substance name: *sodium perchlorate*
CAS No.: 7601-89-0

Substance rating: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral
Chemical Formula: $NaClO_4$
Synonyms (de): Perchlorat (fest)
REACH Reg. No.: 01-2119540521-50-xxxx
EC No.: 231-511-9
Concentration: 15 - <40 %
acc. GHS: H302, Acute Tox. 4 oral

Indice No.: 017-010-00-6

300 mL MRB2

Substance name: *ethanol*
CAS No.: 64-17-5
(denatured with 1% 2-butanone)
Substance rating: H225, Flam. Liq. 2
Chemical Formula: C_2H_6O ; C_2H_5OH
Synonyms (de): Äthylalkohol, vergällter Spiritus
REACH Reg. No.: 01-2119457610-43-xxxx
EC No.: 200-578-6
Concentration: 20 - <35 %
acc. GHS: H226, Flam. Liq. 3

Indice No.: 603-002-00-5

Substance name: *sodium perchlorate*
CAS No.: 7601-89-0

Substance rating: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral
Chemical Formula: $NaClO_4$
Synonyms (de): Perchlorat (fest)
REACH Reg. No.: 01-2119540521-50-xxxx
EC No.: 231-511-9
Concentration: 15 - <40 %
acc. GHS: H302, Acute Tox. 4 oral

Indice No.: 017-010-00-6

200 mL MRB1

Substance name: *2-propanol*
CAS No.: 67-63-0

Substance rating: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, resp. irrit. STOT SE 3
Chemical Formula: C_3H_8O
Synonyms (de): Isopropanol, IPA, Propan-2-ol
REACH Reg. No.: 01-2119457558-25-XXXX
EC No.: 200-661-7
Concentration: 95 - <100 %
acc. GHS: H225, Flam. Liq. 2, H319, Eye Irrit. 2, H336, resp. irrit. STOT SE 3

Indice No.: 603-117-00-0

60 mL RNase-free H₂O



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

Substance rating: No criteria for classification or naming of chemical is not required.
Chemical Formula: H₂O
REACH Reg. No.: exempt, Annex IV
EC No.: 231-791-2
Concentration: 90 - <100 %
acc. GHS: The criteria for classification are not fulfilled.

Size D rDNase

Substance name: *rDNase*
CAS No.: 9003-98-9

Substance rating: H334, Resp. Sens. 1
Chemical Formula: Enzyme Comm. No. 3.1.21.1, origin: cloned
Synonyms (de): Deoxyribonucleodepolymerase
EC No.: 232-667-0
Concentration: 90 - <100 %
acc. GHS: H334, Resp. Sens. 1

60 mL Reaction Buffer for rDNase

Substance name: *chemicals/mixture until 2%*
CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.
Concentration: 1 - <2 %
acc. GHS: The criteria for classification are not fulfilled.

1.8 mL B-Beads

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

Substance rating: No criteria for classification or naming of chemical is not required.
Synonyms (de): magnetic beads
Concentration: 1 - <15 %
acc. GHS: The criteria for classification are not fulfilled.

3.3 Remarks

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

SECTION 4: First-Aid Measures

4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. 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 for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

4.1.3 After INHALATION of Vapors

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



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4.2 Most important Symptoms and Effects, both acute and delayed

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Chronic effects: Repeated contact, even in small amounts, can lead to sensitization.
Causes serious eye irritation.

4.3 Indication of any immediate Medical Attention and Special Treatment needed

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

SECTION 5: Fire-Fighting Measures

5.1 Extinguishable Media

5.1.1 Suitable extinguishing media

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

5.1.2 Unsuitable extinguishing media

data not available

5.2 Special Hazards arising from the Substance or Mixture

DANGER: Highly flammable. Forms 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 highly flammable. Product package burns like paper or plastic. Cool any undamaged containers in water, and remove from the danger zone if possible. Heating will lead to an increase in pressure, and a danger of bursting. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.
For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

5.4 Additional Information

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

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedure

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

6.2 Environmental Precautions

PBT: not applicable
vPvB: not applicable

6.3 Methods and Material for Containment and Cleaning up

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

6.4 Reference to other Sections

see information in section 5.4,7,8 and 13

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

Handling in accordance with the test instruction, that comes with the product. 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. Classification into storage class A (Flammable). Storage class (German chemical industry): see chapter 12.1

Storage class (VCI):

3

Water hazard class (DE):

1

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7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage, and store in a well-ventilated place at max. 77°F (25 °C), away or preferably separate from substances with which a hazardous reaction could take place. Use inbreakable container for transport of glass bottles.

7.3 Specific End Use(s)

Product for analytical use.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

200 mL MRB1

Chemical: 2-propanol

CAS No.: 67-63-0

DNEL: [inh] 500 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 140.9 mg/L

PNEC = Predicted No Effect Concentration

NIOSH: [TWA] 400 ppm / 980 mg/m³

NIOSH STEL: 500 ppm / 1225 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] 400 ppm / 980 mg/m³

Size D rDNase

Chemical: rDNase

CAS No.: 9003-98-9

7 mL Liquid Proteinase K

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

Chemical: proteinase K, liquid

CAS No.: 39450-01-6

60 mL Reaction Buffer for rDNase

Chemical: chemicals/mixture until 2%

CAS No.: -

1.8 mL B-Beads

Chemical: magnetic particles, suspended in water

CAS No.: -

125 mL MRB2

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

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: 1000 ppm / 1900 mg/m³

300 mL MRB2

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

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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: 1000 ppm / 1900 mg/m³

60 mL RNase-free H₂O

Chemical: *water*

CAS No.: 7732-18-5

8.2 Exposure Controls

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

8.2.1 Respiratory Protection

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

8.2.2 Skin protection / Hand protection

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

8.2.3 Eye / Face Protection

Yes, Splash Goggles.

8.2.4 Skin Protection

Recommended to avoid contamination with these hazards.

8.2.5 Hygiene Measures

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

8.2.6 Thermal hazards

data not available

8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

SECTION 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

200 mL MRB1

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	-90 °C
e) Boiling Point:	82 °C
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	2-12.7 Vol%
h) Flash Point:	12 °C
i) Autoignition Temperature:	425 °C
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	0-100 %
n) Partition Coefficient (K _{o/w}):	data not available
o) Vapor Pressure (68°F):	43 hPa
p) Specific Gravity:	0.78 g/cm ³
q) Relative Vapor Density (air=1):	2.08
r) Particle Size:	data not available

Size D rDNase

a) State of aggregation:	solid (lyophilized)
b) Color:	white
c) Odor:	odorless
d) Melting Point:	data not available



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e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient ($K_{o/w}$):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density (air=1):	data not available
r) Particle Size:	data not available

7 mL Liquid Proteinase K

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	7-8
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	0-100 %
n) Partition Coefficient ($K_{o/w}$):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.1 g/cm ³
q) Relative Vapor Density (air=1):	data not available
r) Particle Size:	data not available

60 mL Reaction Buffer for rDNase

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient ($K_{o/w}$):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.01 g/cm ³
q) Relative Vapor Density (air=1):	data not available
r) Particle Size:	data not available

1.8 mL B-Beads

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available



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i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient ($K_{o/w}$):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density ($\text{air}=1$):	data not available
r) Particle Size:	data not available

125 mL MRB2

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	83,6 °C
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	26 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	4.5-5.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient ($K_{o/w}$):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.06 g/cm³
q) Relative Vapor Density ($\text{air}=1$):	data not available
r) Particle Size:	data not available

300 mL MRB2

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	83,6 °C
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	26 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	4.5-5.5
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient ($K_{o/w}$):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.06 g/cm³
q) Relative Vapor Density ($\text{air}=1$):	data not available
r) Particle Size:	data not available

60 mL RNase-free H₂O

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	odorless
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6-8
l) Kinematic Viscosity:	data not available



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m) Soluble in Water:	data not available
n) Partition Coefficient ($K_{o/w}$):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.0 g/cm ³
q) Relative Vapor Density (air=1):	data not available
r) Particle Size:	data not available

9.2 Further Information

9.2.1 Information on physical hazard classes

data not available

9.2.2 Other safety-related parameters

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.

□ □

Substances are highly volatile and form flammable gas-air mixtures.

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. No further data available.

10.4 Conditions to avoid

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

10.5 Incompatible Materials

Avoid storage with oxidizing substances. ---

10.6 Hazardous Decomposition Products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

Following information is valid for pure chemicals. Quantitative data on the toxicity of this product are not available.

200 mL MRB1

Chemical:	2-propanol	CAS No.: 67-63-0
TSCA Inventory:	listed	California Prop. 65 List: not listed
ACGIH:	1230 ppm	
Exposure Routes:	inhalation, ingestion, skin and/or eye contact	
Target Organs:	Eyes, skin, respiratory system	
Symptoms:	irritation eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis	
Canada CEPA 1999:	DSL yes	
LD50 orl rat :	5045 mg/kg	
LC ₅₀ Low orl hmn :	3570 mg/kg	
LC50 ihl rat :	25 mg/L/4H	

Size D rDNase

Chemical:	rDNase	CAS No.: 9003-98-9
TSCA Inventory:	listed	
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.	



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7 mL Liquid Proteinase K

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 : 12600 mg/kg

Chemical: *proteinase K, liquid* 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.

60 mL Reaction Buffer for rDNase

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

1.8 mL B-Beads

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

125 mL MRB2

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
Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.
Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Prop. 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
liver damage; anemia; reproductive, teratogenic
Canada CEPA 1999: DSL yes
LD50 orl rat : 6200 mg/kg
LC_{Low} ihl gpg : 21,900 mg/L
LC_{Low} orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

300 mL MRB2

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
Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.
Chemical: *ethanol* CAS No.: 64-17-5
TSCA Inventory: listed California Prop. 65 List: not listed
ACGIH: 1000 ppm
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Target Organs: Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system
Symptoms: irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;
liver damage; anemia; reproductive, teratogenic
Canada CEPA 1999: DSL yes
LD50 orl rat : 6200 mg/kg
LC_{Low} ihl gpg : 21,900 mg/L
LC_{Low} orl hmn : 1400 mg/kg
LC50 ihl mus : 123,4 mg/L/4H
LC50 ihl rat : 115,9-133,8 mg/L/4H
LD50 orl mus : 3450 mg/kg

60 mL RNase-free H₂O



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Chemical: *water*
TSCA Inventory: listed
LD50 orl rat : > 90000 mg/kg

CAS No.: 7732-18-5

11.2 Other Hazards

Possible endocrine disrupting effects

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

Other Information

no additional data available

SECTION 12: Ecological Information

12.1 Toxicity

Following information is valid for pure chemicals.

200 mL MRB1

Substance name: *2-propanol* CAS-Nr.: 67-63-0
PNEC (fresh water): 140.9 mg/L
PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected
LC50 fish/96h: 1400 mg/L
EC50 daphnia/48h: 13.3 g/L
IC50 scenedesmus quadricauda/72h: >1000 mg/L
EC10 pseudomonas putita/16h: EC5: 1050 mg/L
Water hazard class (DE): 1 WGK No.: 0135
Storage class (VCI): 3

Size D rDNase

Substance name: *rDNase* CAS-Nr.: 9003-98-9
Water hazard class (DE): 1 WGK No.: n.n.
Storage class (VCI): 13

7 mL Liquid Proteinase K

Substance name: *glycerole* CAS-Nr.: 56-81-5
PNEC (fresh water): 0.885 mg/L
PNEC = Predicted No Effected Concentration = concentration at which no effect on the environment is expected
LC50 fish/96h: >5000 24h mg/L
EC50 daphnia/48h: >10 24h g/L
IC50 scenedesmus quadricauda/72h: IC5 7d >10 g/L
EC10 pseudomonas putita/16h: EC5: >10 g/L
Water hazard class (DE): 0
Storage class (VCI): 10

Substance name: *proteinase K, liquid* CAS-Nr.: 39450-01-6
Water hazard class (DE): 1
Storage class (VCI): 13

60 mL Reaction Buffer for rDNase

Substance name: *chemicals/mixture until 2%* CAS-Nr.: -
Water hazard class (DE): 1
Storage class (VCI): 12-13

1.8 mL B-Beads

Substance name: *magnetic particles, suspended in water* CAS-Nr.: -
Storage class (VCI): 12

125 mL MRB2

Substance name: *sodium perchlorate* CAS-Nr.: 7601-89-0
Water hazard class (DE): 1 WGK No.: 0382
Storage class (VCI): 12

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Substance name: *ethanol* CAS-Nr.: 64-17-5
PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
LC50 daphnia magna/48h: >100 g/L
LC50 pimephales promelas/96h: 13.4-15.1 g/L
LC50 leuciscus idus/96h: [48h] 8.14 g/L
LC50 fish/96h: 13 g/L
EC50 daphnia/48h: 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h: [7d] 5000 mg/L
EC10 pseudomonas putida/16h: [EC5] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Storage class (VCI): 3

300 mL MRB2

Substance name: *sodium perchlorate* CAS-Nr.: 7601-89-0
Water hazard class (DE): 1 WGK No.: 0382
Storage class (VCI): 12

Substance name: *ethanol* CAS-Nr.: 64-17-5
PNEC (fresh water): 0.96 mg/L
PNEC = Predicted No Effect Concentration = concentration at which no effect on the environment is expected
LC50 daphnia magna/48h: >100 g/L
LC50 pimephales promelas/96h: 13.4-15.1 g/L
LC50 leuciscus idus/96h: [48h] 8.14 g/L
LC50 fish/96h: 13 g/L
EC50 daphnia/48h: 9.3-14.2 g/L
IC50 scenedesmus quadricauda/72h: [7d] 5000 mg/L
EC10 pseudomonas putida/16h: [EC5] 6500 mg/L
Water hazard class (DE): 1 WGK No.: 0096
Storage class (VCI): 3

60 mL RNase-free H₂O

Substance name: *water* CAS-Nr.: 7732-18-5

12.2 Persistence and Degradability

12.3 Bioaccumulative Potential

200 mL MRB1

Substance name: *2-propanol* CAS-Nr.: 67-63-0
Partition Coefficient (K_{o/w}): 0,05

7 mL Liquid Proteinase K

Substance name: *glycerole* CAS-Nr.: 56-81-5
Partition Coefficient (K_{o/w}): -1,76
Substance name: *ethanol* CAS-Nr.: 64-17-5
Partition Coefficient (K_{o/w}): -0,31
Substance name: *ethanol* CAS-Nr.: 64-17-5
Partition Coefficient (K_{o/w}): -0,31

12.4 Mobility in Soil

12.5 Results of PBT and vPvB Assessment

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

12.6 Endocrine disrupting properties

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

12.7 Other Adverse Effects

no additional data available



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SECTION 13: Disposal Considerations

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. (2-propanol, ethanol mixture)

14.3. Hazard Class: 3

14.4. Packing Group: II

Transportation by Road

Classification code: F1

Limited Quantity: 1 L

Excepted Quantity: E 2

Tunnel restriction code: E

Special instructions: 640C

Air transport IATA DGR

Limited Quantity: PAX: 353

CAO: 364

max. quantity PAX: 5 L

max. quantity CAO: 60 L

Excepted Quantity: E 2

Maritime transport IMDG

EmS: F-E, S-E

Staukategorie: B

14.5 Environmental Hazards

none, contains only small quantities of hazardous substances

14.6 Special Precautions for User

not necessary

14.7 Carriage of bulk cargo by sea in accordance with IMO instruments

Not applicable.

SECTION 15: Regulatory Information

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

U.S. Federal Regulations

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

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

29 CFR 1910.1200 Hazard communication.

NIOSH Pocket Guide to Chemical Hazards

NIOSH Workplace Safety & Health Topics

TSCA Inventory

U.S. State Regulations

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

Canada

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

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

15.2 Chemical Safety Assessment

not necessary for these small amounts

SECTION 16: Other Information

16.1 Changes compared to the last version

Between versions 2.15.3.1 and 2.2.2.2 following changes were applied: - 13 product component data corrected - 1 composition data corrected

16.2 List of Hazard and Precaution Phrases



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16.2.1 List of relevant H Phrases

H	Between versions 2.15.3.1 and 2.2.2.2 following changes were applied: - 13 product component data corrected - 1 composition data corrected
H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336	May cause drowsiness or dizziness.

16.2.2 List of relevant P Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take precautionary measures against static discharge.
P261sh	Avoid breathing dust/vapors.
P264W	Wash with water thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280sh	Wear protective gloves/eye protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.
P337+313	If eye irritation persists: Get medical advice/attention.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P403+235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to regulated waste treatment.

16.3 Recommended Restriction on Use

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

16.4 Sources of Key Data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021
Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres
SUVA .CH, limit values in the air at work 2009, revised on 01/2009
Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)
Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG
TRGS 907, German technical rules for listing substances and causes of sensitization, updated November 2011 Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)
Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)
Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)
Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)
Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)
TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019
Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)
Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG
Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)
Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)
Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)
Regulation 692/2022/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (18th ATP)

revisions/updates

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



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744352.4

NucleoMag RNA Blood (4x96)

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Printing Date: 06.02.2024

Date of Issue: 05.02.2024

Version: 2.15.3.1

16.5 Further Information

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16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive
COD:	chemical oxygen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage
DNEL:	Derived No-Effect Level (for workers)
derm:	dermal
dog:	dog
EC10:	Concentration causing a toxic effect in 10% of the test organisms
EC:	European Community
EC-Nr:	Substance number of the EC substance inventory
EmS:	Guide to accident management measures on ships
EU:	European Union
fish:	fish (not specified)
GHS:	Global Harmonized System of Classification and Labeling of Chemicals
gpg:	guinea pig
ICAO:	International Civil Aviation Organization
ihl:	inhaled
IMDG:	International Maritime Dangerous Goods Code
intrav:	intravenous
ipt:	intraperitoneal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	lethal concentration 50%
LD50:	lethal dose 50%
leuciscus idus:	fish, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	fish, rainbow trout
orl:	oral
OSHA:	Occupational Safety and Health Administration
PAX:	transport on passenger planes allowed
PBT:	persistent, bioaccumulating, toxic substance
pH:	pH value
pimephales promelas:	fish, fathead minnow
PNEC:	Predicted No Effect Concentration
PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	rRegistration number



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Repr: harmful to reproduction
 Resp: respiratory
 scu: sub cutan
 RIP: REACH Implementations Projects
 SDS: safety data sheet
 Sens: sensitisation
 STEL: short term exposure limit
 STOT: Specific Target Organ Toxicity
 SVHC: Substance of Very High Concern
 t/a: tons per year
 TCCA: Toxic Chemicals Control Act (S. Korea)
 Tox: toxic
 TSCA: The Toxic Substances Control Act (US)
 TWA: time weighted average
 TRGS: technical regulations (DE)
 vPvB: very persistent, very bioaccumulating substance

16.7 Training Advice

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