

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 1/19

Printing Date: 04.04.2023

Date of Issue: 17.01.2023

Version: 2.2.5.10

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

1.1 Product Identifier / Product Name

REF	744300.4	
Product Name	NucleoMag 96 Tissue (4x96)	
1 x 125 mL MB6		
1 x 15 mL PB		
1 x 12 mL B-Beads		
1 x 180 mL MB2		UFI: UP9V-83ES-E20Q-4PJ8
1 x 100 mL T1		
1 x 300 mL MB3		UFI: 8X9V-S3GY-C206-3Q9F
1 x 300 mL MB4		UFI: H0AV-936C-N20Q-S1VH
1 x 500 mL MB5		
4 x 75 mg Proteinase K (lyo)		UFI: S0KV-C3D9-420Q-9T2H

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

2.1 Classification of the substance or mixture



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 2/19

Printing Date: 04.04.2023

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75 mg Proteinase K (Iyo)



GHS07

GHS08

Signal Word

DANGER

Hazard Identification

Hazard Classes/Categories

H315

Skin Irrit. 2

H319

Eye Irrit. 2

H334

Resp. Sens. 1

15 mL PB

Signal Word

Do not need labelling as hazardous

No Hazard Class

-

180 mL MB2



GHS02

GHS07

Signal Word

WARNING

Hazard Identification

Hazard Classes/Categories

H226

Flam. Liq. 3

H302

Acute Tox. 4 oral

300 mL MB3



GHS02

GHS07

Signal Word

WARNING

Hazard Identification

Hazard Classes/Categories

H226

Flam. Liq. 3

H302

Acute Tox. 4 oral

300 mL MB4



GHS02

GHS07

Signal Word

WARNING

Hazard Identification

Hazard Classes/Categories

H226

Flam. Liq. 3

H302

Acute Tox. 4 oral



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 3/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

125 mL MB6

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

500 mL MB5

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

100 mL T1

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

12 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 sensiblizing substances.

75 mg Proteinase K (Iyo)



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.

15 mL PB

Do not need labelling as hazardous
Signal Word: -

180 mL MB2



Signal Word: WARNING
H226, H302
Flammable liquid and vapor.Harmful if swallowed.
P210, P264W, P301+312, P330



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 4/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

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. Rinse mouth.

300 mL MB3



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

300 mL MB4



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

125 mL MB6

Do not need labelling as hazardous
 Signal Word: -

500 mL MB5

Do not need labelling as hazardous
 Signal Word: -

100 mL T1

Do not need labelling as hazardous
 Signal Word: -

12 mL B-Beads

Do not need labelling as hazardous
 Signal Word: -

Label elements of the complete product



Signal Word: DANGER
 H226, H302, H334
 Flammable liquid and vapor. Harmful if swallowed. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 P210, P261sh, P264W, P301+312, P330, P342+311
 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. Rinse mouth. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

2.3 Other Hazards



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SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 6/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

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.

12 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.

180 mL MB2

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

Substance rating: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral
 Chemical Formula: NaClO₄
 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

Substance name: *ethanol*
 CAS No.: 64-17-5
 (denatured with 1% 2-butanone)

Substance rating: H225, Flam. Liq. 2
 Chemical Formula: C₂H₆O; C₂H₅OH
 Synonyms (de): Äthylalkohol, vergällter Spiritus
 REACH Reg. No.: 01-2119457610-43-xxxx
 EC No.: 200-578-6
 Concentration: 35 - <55 %
 acc. GHS: H226, Flam. Liq. 3

Indice No.: 603-002-00-5

300 mL MB3

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

Substance rating: H271, Ox. Sol. 1, H302, Acute Tox. 4 oral
 Chemical Formula: NaClO₄
 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

Substance name: *ethanol*
 CAS No.: 64-17-5
 (denatured with 1% 2-butanone)

Substance rating: H225, Flam. Liq. 2
 Chemical Formula: C₂H₆O; C₂H₅OH
 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

300 mL MB4



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SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 7/19

Printing Date: 04.04.2023

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Substance name:	<i>sodium perchlorate</i>		
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	Indice No.:	017-010-00-6
Concentration:	15 - <40 %		
acc. GHS:	H302, Acute Tox. 4 oral		
Substance name:	<i>ethanol</i>		
CAS No.:	64-17-5		
	(denatured with 1% 2-butanone)		
Substance rating:	H225, Flam. Liq. 2		
Chemical Formula:	C ₂ H ₆ O; C ₂ H ₅ OH		
Synonyms (de):	Äthylalkohol, vergällter Spiritus		
REACH Reg. No.:	01-2119457610-43-xxxx		
EC No.:	200-578-6	Indice No.:	603-002-00-5
Concentration:	20 - <35 %		
acc. GHS:	H226, Flam. Liq. 3		

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 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

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

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

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



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REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 8/19

Printing Date: 04.04.2023

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Version: 2.2.5.10

5.2 Special Hazards arising from the Substance or Mixture

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

5.3 Advice for Firefighters

No, for listed product. The substance/mixture is flammable. Product package burns like paper or plastic. Cool any undamaged containers in water, and remove from the danger zone if possible. Heating will lead to an increase in pressure, and a danger of bursting. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

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

5.4 Additional Information

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

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedure

Do not breathe vapors. Wear suitable protective gloves (see 8.2.2). 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 allows a safe storage. Storage class (German chemical industry): see chapter 12.1

Storage class (VCI): 3

Water hazard class (DE): 1

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

7.3 Specific End Use(s)

Product for analytical use.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

75 mg Proteinase K (Iyo)

Chemical: *proteinase K*

CAS No.: 39450-01-6

125 mL MB6

Chemical: *chemicals/mixture until 1%*

CAS No.: -

500 mL MB5

Chemical: *chemicals/mixture until 1%*

CAS No.: -

15 mL PB



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 9/19

Printing Date: 04.04.2023

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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

100 mL T1

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

12 mL B-Beads

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

180 mL MB2

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 MB3

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 MB4

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



Safety Data Sheet

SDS acc. Hazard Communication Standard

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NucleoMag 96 Tissue (4x96)

Page: 10/19

Printing Date: 04.04.2023

Date of Issue: 17.01.2023

Version: 2.2.5.10

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

75 mg Proteinase K (Iyo)

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

125 mL MB6

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



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 11/19

Printing Date: 04.04.2023

Date of Issue: 17.01.2023

Version: 2.2.5.10

r) Particle Size: data not available

500 mL MB5

a) State of aggregation: liquid
 b) Color: colorless
 c) Odor: odorless
 d) Melting Point: 0 °C
 e) Boiling Point: data not available
 f) Flammability: data not available
 g) Explosive Limits (lower / upper): data not available
 h) Flash Point: data not available
 i) Autoignition Temperature: data not available
 j) Decomposition Temperature: data not available
 k) pH Value: 8-9
 l) Kinematic Viscosity: data not available
 m) Soluble in Water: data not available
 n) Partition Coefficient (o/w) : data not available
 o) Vapor Pressure (68°F): data not available
 p) Specific Gravity: 1.0 g/cm³
 q) Relative Vapor Density (air=1) : data not available
 r) Particle Size: data not available

15 mL PB

a) State of aggregation: liquid
 b) Color: colorless
 c) Odor: alcoholic
 d) Melting Point: data not available
 e) Boiling Point: data not available
 f) Flammability: data not available
 g) Explosive Limits (lower / upper): data not available
 h) Flash Point: data not available
 i) Autoignition Temperature: data not available
 j) Decomposition Temperature: data not available
 k) pH Value: data not available
 l) Kinematic Viscosity: data not available
 m) Soluble in Water: data not available
 n) Partition Coefficient (o/w) : data not available
 o) Vapor Pressure (68°F): data not available
 p) Specific Gravity: 1.11 g/cm³
 q) Relative Vapor Density (air=1) : data not available
 r) Particle Size: data not available

100 mL T1

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: 7.5-8.5
 l) Kinematic Viscosity: data not available
 m) Soluble in Water: data not available
 n) Partition Coefficient (o/w) : data not available
 o) Vapor Pressure (68°F): data not available
 p) Specific Gravity: 1.02 g/cm³
 q) Relative Vapor Density (air=1) : data not available
 r) Particle Size: data not available



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 12/19

Printing Date: 04.04.2023

Date of Issue: 17.01.2023

Version: 2.2.5.10

12 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
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	data not available
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

180 mL MB2

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	24 °C
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	5-6
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.08 g/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

300 mL MB3

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 (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.06 g/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

300 mL MB4

a) State of aggregation:	liquid
b) Color:	colorless
c) Odor:	alcoholic
d) Melting Point:	data not available



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 13/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

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 (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.06 g/cm ³
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

9.2 Further Information

No data is available for the other parameters for the mixtures, since no registration and no chemical safety report is required.
Properties relevant to substance groups

SECTION 10: Stability and Reactivity

10.1 Reactivity

No further data available.

10.2 Chemical Stability

no known instability.

10.3 Possibility of Hazardous Reactions

But avoid reactions with oxidizing agents. 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.

75 mg Proteinase K (Iyo)

Chemical: *proteinase K* 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.

125 mL MB6

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

TSCA Inventory: all listed, <1%

500 mL MB5

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

TSCA Inventory: all listed, <1%



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 14/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

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 : 12600 mg/kg

100 mL T1

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

12 mL B-Beads

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

180 mL MB2

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 MB3

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 MB4

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.



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 15/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

Chemical:	<i>ethanol</i>	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	

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.

75 mg Proteinase K (Iyo)

Chemical: *proteinase K* CAS No.: 39450-01-6

125 mL MB6

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

500 mL MB5

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

15 mL PB

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

PNEC (fresh water) : 0.885 mg/L
PNEC = Predicted No Effect 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

100 mL T1

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

12 mL B-Beads

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

180 mL MB2

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

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

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

LC50 daphnia magna/48h : >100 g/L

LC50 pimephales promelas/96h : 13.4-15.1 g/L

LC50 leuciscus idus/96h : [48h] 8.14 g/L

LC50 fish/96h : 13 g/L

EC50 daphnia/48h : 9.3-14.2 g/L



Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 16/19

Printing Date: 04.04.2023

Date of Issue: 17.01.2023

Version: 2.2.5.10

IC50 *scenedesmus quadricauda*/72h : [7d] 5000 mg/L
 EC10 *pseudomonas putita*/16h : [EC5] 6500 mg/L
 Partition Coefficient (o/w) : -0,31

300 mL MB3

Chemical: *sodium perchlorate*

CAS No.: 7601-89-0

Chemical: *ethanol*

CAS No.: 64-17-5

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

LC50 *daphnia magna*/48h : >100 g/L
 LC50 *pimephales promelas*/96h : 13.4-15.1 g/L
 LC50 *leuciscus idus*/96h : [48h] 8.14 g/L
 LC50 fish/96h : 13 g/L
 EC50 *daphnia*/48h : 9.3-14.2 g/L
 IC50 *scenedesmus quadricauda*/72h : [7d] 5000 mg/L
 EC10 *pseudomonas putita*/16h : [EC5] 6500 mg/L
 Partition Coefficient (o/w) : -0,31

300 mL MB4

Chemical: *sodium perchlorate*

CAS No.: 7601-89-0

Chemical: *ethanol*

CAS No.: 64-17-5

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

LC50 *daphnia magna*/48h : >100 g/L
 LC50 *pimephales promelas*/96h : 13.4-15.1 g/L
 LC50 *leuciscus idus*/96h : [48h] 8.14 g/L
 LC50 fish/96h : 13 g/L
 EC50 *daphnia*/48h : 9.3-14.2 g/L
 IC50 *scenedesmus quadricauda*/72h : [7d] 5000 mg/L
 EC10 *pseudomonas putita*/16h : [EC5] 6500 mg/L
 Partition Coefficient (o/w) : -0,31

12.2 Persistence and Degradability

not necessary

12.3 Bioaccumulative Potential

not necessary

12.4 Mobility in Soil

not necessary

12.5 Results of PBT and vPvB Assessment

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

12.6 Endocrine disrupting properties

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

12.7 Other Adverse Effects

no additional data available

SECTION 13: Disposal Considerations

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.



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4

NucleoMag 96 Tissue (4x96)

Page: 17/19

Printing Date: 04.04.2023

Date of Issue: 17.01.2023

Version: 2.2.5.10

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 Tunnel restriction code: D/E
 Excepted Quantity: E 1 Special instructions: 640E
Air Transportation
 Limited Quantity: LQ 7
 Excepted Quantity: E 1
 PAX: 355 max. weight PAX: 60 L
 CAO: 366 max. weight CAO: 220 L
Maritime Transport
 EmS: F-E, S-E Storage Category: A

14.5 Environmental Hazards

none, contains only small quantities of hazardous substances

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 2.2.5.10 and 2.2.2.2 following changes were applied: - 3 composition data corrected - 8 substance data corrected

16.2 List of Hazard and Precaution Phrases

16.2.1 List of relevant H Phrases

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

16.2.2 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.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 18/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

P342+311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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)

revisions/updates

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

16.5 Further Information

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16.6 Legend / Abbreviations

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



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Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 744300.4	NucleoMag 96 Tissue (4x96)	Page: 19/19
Printing Date: 04.04.2023	Date of Issue: 17.01.2023	Version: 2.2.5.10

EU:	European Union
fish:	fish (not specified)
GHS:	Global Harmonized System of Classification and Labeling of Chemicals
gpg:	guinea pig
ICAO:	International Civil Aviation Organization
ihl:	inhaled
IMDG:	International Maritime Dangerous Goods Code
intrav:	intravenous
ipt:	intraperitoneal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	letale concentration 50%
LD50:	letale dosis 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	fish, rainbow trout
orl:	oral
OSHA:	Occupational Safety and Health Administration
PAX:	transport on passenger planes allowed
PBT:	persistent, bioaccumulating, toxic substance
pH:	pH value
pimephales promelas:	fish, fathead minnow
PNEC:	Predicted No Effect Concentration
PROC 15:	Process category 'for laboratory use'
PRTR:	Law for PRTR and Promotion of Chemical Management (Jp)
PVC:	polyvinyl chloride
quail:	bird, quail
rat:	rat
rbt:	rabbit
RD:	rapidly degradable
RE:	repeated
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
REF:	item number, reference number
Reg.No.:	rRegistration number
Repr:	harmful to reproduction
Resp:	respiratory
scu:	sub cutan
RIP:	REACH Implementations Projects
SDS:	safety data sheet
Sens:	sensitisation
STEL:	short term exposure limit
STOT:	Specific Target Organ Toxicity
SVHC:	Substance of Very High Concern
t/a:	tons per year
TCCA:	Toxic Chemicals Control Act (S. Korea)
Tox:	toxic
TSCA:	The Toxic Substances Control Act (US)
TWA:	time weighted average
TRGS:	technical regulations (DE)
vPvB:	very persistent, very bioaccumulating substance

16.7 Training Advice

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



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