

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Date of issue: 04.01.2018

Version 1.0

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Catalogue No. 9Q04GX
Product name GenElute™ UltraMag Cell-Free DNA Kit

Lysis/ Binding Buffer

REACH Registration Number This product is a mixture. REACH Registration Number see section 3.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Biochemical research/analysis
For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Responsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number Please contact the regional company representation in your country.

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4, Oral, H302

Acute toxicity, Category 4, Inhalation, H332

Acute toxicity, Category 4, Dermal, H312

Skin corrosion, Category 1B, H314

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 2, H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

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according to Regulation (EC) No. 1907/2006

Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

2.2 Label elements

Labelling.(REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

EUH032 Contact with acids liberates very toxic gas.

Precautionary statements

Prevention

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

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Catalogue No. 9Q04GX
Product name GenElute™ UltraMag Cell-Free DNA Kit
Lysis/ Binding Buffer

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution of inorganic and organic compounds.

3.1 Substance

Not applicable

3.2 Mixture

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
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guanidinium, thiocyanate (1:1) ($\geq 50\%$ - $< 80\%$)		
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593-84-0	*)	
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Acute toxicity, Category 4, H302

Acute toxicity, Category 4, H332

Acute toxicity, Category 4, H312

Skin corrosion, Category 1B, H314

Chronic aquatic toxicity, Category 3, H412

Triton-X-100 ($\geq 20\%$ - $< 25\%$)		
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9002-93-1	*)	
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Acute toxicity, Category 4, H302

Skin irritation, Category 2, H315

Serious eye damage, Category 1, H318

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Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

M-Factor: 10

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

Risk of blindness!

Irritation and corrosion, Cough, Shortness of breath, Nausea, Vomiting, Dermatitis, Convulsions, ataxia (impaired locomotor coordination), collapse, Coma

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

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Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Mixture with combustible ingredients.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature see product label.

The data applies to the entire pack.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: filter ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

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Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	clear colourless
Odour	No strong odour known.
Odour Threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	No information available.
Relative density	No information available.
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.

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Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Explosive properties	Not classified as explosive.
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Oxidizing properties	none
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9.2 Other data

none

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

Sensitivity to light

10.3 Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with:

Acids

10.4 Conditions to avoid

Strong heating (decomposition).

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity

Acute toxicity estimate: 725,65 mg/kg

Calculation method

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach., Nausea, Vomiting, Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity

Acute toxicity estimate: 2,76 mg/l; 4 h ; dust/mist

Calculation method

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute dermal toxicity

Acute toxicity estimate : 1.897 mg/kg

Calculation method

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Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Skin irritation

Mixture causes burns.

Eye irritation

Mixture causes serious eye damage. Risk of blindness!

Sensitisation

This information is not available.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

Systemic effects:

ataxia (impaired locomotor coordination), Convulsions, collapse, Coma

Cannot be excluded: impaired function of:

thyroid

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Components

guanidinium, thiocyanate (1:1)

Acute oral toxicity

LD50 Rat: 593 mg/kg

OECD Test Guideline 401

Acute inhalation toxicity

Acute toxicity estimate: 1,6 mg/l; dust/mist

Expert judgement

Acute dermal toxicity

Acute toxicity estimate : 1.100,1 mg/kg

Expert judgement

Skin irritation

Rabbit

Result: Corrosive

OECD Test Guideline 404

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Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Triton-X-100

Acute oral toxicity

LD50 Rat: 1.900 - 5.000 mg/kg (External MSDS) The value is given in analogy to the following substances:

Acute dermal toxicity

LD50 Rabbit: > 3.000 mg/kg (External MSDS) The value is given in analogy to the following substances:

Skin irritation

Rabbit

Result: irritating

OECD Test Guideline 404

The value is given in analogy to the following substances:

Sensitisation

Sensitisation test: human

Result: negative

(External MSDS) The value is given in analogy to the following substances:

Germ cell mutagenicity

Genotoxicity in vitro

Mutagenicity (mammal cell test):

Mouse lymphoma test

Result: negative

(Lit.)

SECTION 12. Ecological information

Mixture

12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Discharge into the environment must be avoided.

Components

guanidinium, thiocyanate (1:1)

No information available.

Triton-X-100

Toxicity to fish

semi-static test LC50 *Leuciscus idus* (Golden orfe): 0,26 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203 The value is given in analogy to the following substances:

Toxicity to daphnia and other aquatic invertebrates

static test EC50 *Daphnia magna* (Water flea): 0,011 mg/l; 48 h (ECOTOX Database) The value is given in analogy to the following substances:

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Lysis/ Binding Buffer

Toxicity to algae

static test EC50 *Pseudokirchneriella subcapitata* (green algae): 1,9 mg/l; 96 h (ECHA) The value is given in analogy to the following substances:

Toxicity to fish (Chronic toxicity)

flow-through test *Danio rerio* (zebra fish): 0,012 mg/l

Analytical monitoring: yes

OECD Test Guideline 210 The value is given in analogy to the following substances:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC *Daphnia magna* (Water flea): 0,03 mg/l; 21 d

Analytical monitoring: yes

OECD Test Guideline 202 The value is given in analogy to the following substances:

Biodegradability

22 %; 28 d; aerobic

OECD Test Guideline 301C

The value is given in analogy to the following substances:

Not readily biodegradable.

M-Factor

10

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number UN 1760

14.2 Proper shipping name CORROSIVE LIQUID, N.O.S.(GUANIDINIUM THIOCYANATE, POLYETHYLENE GLYCOL P-(1,1,3,3-TETRAMETHYLBUTYL)-PHENYL ETHER)

14.3 Class 8

14.4 Packing group II

14.5 Environmentally hazardous yes

14.6 Special precautions for user yes

Tunnel restriction code E

Inland waterway transport (ADN)

Not relevant

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according to Regulation (EC) No. 1907/2006

Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Air transport (IATA)

14.1 UN number	UN 1760
14.2 Proper shipping name	CORROSIVE LIQUID, N.O.S.(GUANIDINIUM THIOCYANATE, POLYETHYLENE GLYCOL P-(1,1,3,3-TETRAMETHYLBUTYL)-PHENYL ETHER)
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 1760
14.2 Proper shipping name	CORROSIVE LIQUID, N.O.S.(GUANIDINIUM THIOCYANATE, POLYETHYLENE GLYCOL P-(1,1,3,3-TETRAMETHYLBUTYL)-PHENYL ETHER)
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes
EmS	F-A S-B

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard	96/82/EC
Legislation	Dangerous for the environment
	9a
	Quantity 1: 100 t
	Quantity 2: 200 t

SEVESO III
ENVIRONMENTAL HAZARDS
E1
Quantity 1: 100 t
Quantity 2: 200 t

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
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Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Regulation (EC) No 1005/2009 on substances that
deplete the ozone layer

not regulated

Regulation (EC) No 850/2004 of the European
Parliament and of the Council of 29 April 2004 on
persistent organic pollutants and amending
Directive 79/117/EEC

not regulated

Substances of very high concern (SVHC)

This product does contain substances of
very high concern according to Regulation
(EC) No 1907/2006 (REACH), Article 59
above the respective regulatory
concentration limit of > 0.1 % (w/w).

Contains: Triton-X-100

National legislation

Storage class 8A

The data applies to the entire pack.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

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according to Regulation (EC) No. 1907/2006

Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

EUH032 Contact with acids liberates very toxic gas.

Precautionary statements

Prevention

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Millipore Ref.

CFMAG-250ML

Regional representation

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Lysis/ Binding Buffer

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Date of issue: 04.01.2018

Version 1.0

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Catalogue No. 9Q04GX
Product name GenElute™ UltraMag Cell-Free DNA Kit

Wash Buffer

REACH Registration Number This product is a mixture. REACH Registration Number see section 3.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Biochemical research/analysis
For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number Please contact the regional company representation in your country.

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4, Oral, H302

Acute toxicity, Category 4, Inhalation, H332

Acute toxicity, Category 4, Dermal, H312

Skin corrosion, Category 1B, H314

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 2, H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Wash Buffer

2.2 Label elements

Labelling.(REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

EUH032 Contact with acids liberates very toxic gas.

Precautionary statements

Prevention

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 9Q04GX
Product name GenElute™ UltraMag Cell-Free DNA Kit
Wash Buffer

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Contains: guanidinium, thiocyanate (1:1)

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution of inorganic and organic compounds.

3.1 Substance

Not applicable

3.2 Mixture

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No. Registration number Classification

guanidinium, thiocyanate (1:1) ($\geq 50\%$ - $< 80\%$)

593-84-0 *)

Acute toxicity, Category 4, H302

Acute toxicity, Category 4, H332

Acute toxicity, Category 4, H312

Skin corrosion, Category 1B, H314

Chronic aquatic toxicity, Category 3, H412

Triton-X-100 ($\geq 20\%$ - $< 25\%$)

9002-93-1 *)

Acute toxicity, Category 4, H302

Skin irritation, Category 2, H315

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Wash Buffer

Serious eye damage, Category 1, H318

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

M-Factor: 10

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

Risk of blindness!

Irritation and corrosion, Cough, Shortness of breath, Nausea, Vomiting, Dermatitis, Convulsions, ataxia (impaired locomotor coordination), collapse, Coma

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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according to Regulation (EC) No. 1907/2006

Catalogue No.	9Q04GX
Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Wash Buffer

5.2 Special hazards arising from the substance or mixture

Mixture with combustible ingredients.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature see product label.

The data applies to the entire pack.

7.3 Specific end use(s)

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Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: filter ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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Environmental exposure controls

Do not let product enter drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	clear colourless
Odour	No strong odour known.
Odour Threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	No information available.
Relative density	No information available.
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.

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Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

none

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

Sensitivity to light

10.3 Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with:

Acids

10.4 Conditions to avoid

Strong heating (decomposition).

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity

Acute toxicity estimate: 725,65 mg/kg

Calculation method

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach., Nausea, Vomiting, Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity

Acute toxicity estimate: 2,76 mg/l; 4 h ; dust/mist

Calculation method

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

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Product name	GenElute™ UltraMag Cell-Free DNA Kit
	Wash Buffer

Acute dermal toxicity

Acute toxicity estimate : 1.897 mg/kg

Calculation method

Skin irritation

Mixture causes burns.

Eye irritation

Mixture causes serious eye damage. Risk of blindness!

Sensitisation

This information is not available.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

Systemic effects:

ataxia (impaired locomotor coordination), Convulsions, collapse, Coma

Cannot be excluded: impaired function of:

thyroid

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Components

guanidinium, thiocyanate (1:1)

Acute oral toxicity

LD50 Rat: 593 mg/kg

OECD Test Guideline 401

Acute inhalation toxicity

Acute toxicity estimate: 1,6 mg/l; dust/mist

Expert judgement

Acute dermal toxicity

Acute toxicity estimate : 1.100,1 mg/kg

Expert judgement

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Product name GenElute™ UltraMag Cell-Free DNA Kit
Wash Buffer

Skin irritation
Rabbit
Result: Corrosive
OECD Test Guideline 404

Triton-X-100

Acute oral toxicity
LD50 Rat: 1.900 - 5.000 mg/kg (External MSDS) The value is given in analogy to the following substances:

Acute dermal toxicity
LD50 Rabbit: > 3.000 mg/kg (External MSDS) The value is given in analogy to the following substances:

Skin irritation
Rabbit
Result: irritating
OECD Test Guideline 404
The value is given in analogy to the following substances:

Sensitisation
Sensitisation test: human
Result: negative
(External MSDS) The value is given in analogy to the following substances:

Germ cell mutagenicity
Genotoxicity in vitro
Mutagenicity (mammal cell test):
Mouse lymphoma test
Result: negative
(Lit.)

SECTION 12. Ecological information

Mixture

12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Discharge into the environment must be avoided.

Components

guanidinium, thiocyanate (1:1)
No information available.

Triton-X-100

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Toxicity to fish

semi-static test LC50 *Leuciscus idus* (Golden orfe): 0,26 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203 The value is given in analogy to the following substances:

Toxicity to daphnia and other aquatic invertebrates

static test EC50 *Daphnia magna* (Water flea): 0,011 mg/l; 48 h (ECOTOX Database) The value is given in analogy to the following substances:

Toxicity to algae

static test EC50 *Pseudokirchneriella subcapitata* (green algae): 1,9 mg/l; 96 h (ECHA) The value is given in analogy to the following substances:

Toxicity to fish (Chronic toxicity)

flow-through test *Danio rerio* (zebra fish): 0,012 mg/l

Analytical monitoring: yes

OECD Test Guideline 210 The value is given in analogy to the following substances:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC *Daphnia magna* (Water flea): 0,03 mg/l; 21 d

Analytical monitoring: yes

OECD Test Guideline 202 The value is given in analogy to the following substances:

Biodegradability

22 %; 28 d; aerobic

OECD Test Guideline 301C

The value is given in analogy to the following substances:

Not readily biodegradable.

M-Factor

10

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SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 1760
14.2 Proper shipping name	CORROSIVE LIQUID, N.O.S.(GUANIDINIUM THIOCYANATE, POLYETHYLENE GLYCOL P-(1,1,3,3-TETRAMETHYLBUTYL)-PHENYL ETHER)
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 1760
14.2 Proper shipping name	CORROSIVE LIQUID, N.O.S.(GUANIDINIUM THIOCYANATE, POLYETHYLENE GLYCOL P-(1,1,3,3-TETRAMETHYLBUTYL)-PHENYL ETHER)
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 1760
14.2 Proper shipping name	CORROSIVE LIQUID, N.O.S.(GUANIDINIUM THIOCYANATE, POLYETHYLENE GLYCOL P-(1,1,3,3-TETRAMETHYLBUTYL)-PHENYL ETHER)
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes

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Product name	GenElute™ UltraMag Cell-Free DNA Kit
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EmS

F-A S-B

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard	96/82/EC
Legislation	Dangerous for the environment
	9a
	Quantity 1: 100 t
	Quantity 2: 200 t

SEVESO III
ENVIRONMENTAL HAZARDS
E1
Quantity 1: 100 t
Quantity 2: 200 t

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	not regulated
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Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	not regulated
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Substances of very high concern (SVHC)	This product does contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 59 above the respective regulatory concentration limit of > 0.1 % (w/w).
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Contains: Triton-X-100

National legislation

Storage class	8A
The data applies to the entire pack.	

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SAFETY DATA SHEET

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	Wash Buffer

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.
EUH032 Contact with acids liberates very toxic gas.

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Precautionary statements

Prevention

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Contains: guanidinium, thiocyanate (1:1)

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Millipore Ref.

CFMAG-250ML

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.