

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 29.01.2018

Version 15.1

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No. 114897
Product name Chloride Test Method: photometric 2.5 - 250 mg/l Cl⁻ Spectroquant®

CI-1

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 Reagent for 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)**

Corrosive to metals, Category 1, H290

Skin irritation, Category 2, H315

Eye irritation, Category 2, H319

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

2.2 Label elements**Labelling.(REGULATION (EC) No 1272/2008)***Hazard pictograms*

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Signal word

Warning

Hazard statements

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements

Response

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.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Warning

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature

Aqueous solution

3.1 Substance

Not applicable

3.2 Mixture

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

Chemical name (Concentration)

CAS-No.	Registration number	Classification
iron(III) nitrate ($\geq 1\%$ - $< 3\%$)		
10421-48-4	01-2119978293-27-XXXX	Oxidizing solid, Category 3, H272 Skin irritation, Category 2, H315 Eye irritation, Category 2, H319

nitric acid ($\geq 1\%$ - $< 5\%$)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

7697-37-2	01-2119487297-23-XXXX	Oxidizing liquid, Category 2, H272 Corrosive to metals, Category 1, H290 Skin corrosion, Category 1A, H314
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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

After inhalation: fresh air.

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

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

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.
irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

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SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:
nitrogen oxides

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. Chemisorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

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SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

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

Requirements for storage areas and containers

No metal containers.

Storage conditions

Tightly closed in a well-ventilated place. Accesible only for authorised persons.

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.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

nitric acid (7697-37-2)

Worker DNEL, longterm	Local effects	inhalation	1,3 mg/m ³
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nitric acid (7697-37-2)

PNEC no data available

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

Safety glasses

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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

Acid-resistant protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: filter E-(P2)

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.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	light yellow
Odour	weak
Odour Threshold	No information available.
pH	at 20 °C acidic
Melting point	No information available.
Boiling point	No information available.

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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	ca. 1,03 g/cm ³ at 20 °C
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.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Corrosion	May be corrosive to metals.
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SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with:

Metals, metal alloys

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Release of: nitrous gases, Hydrogen

increased reactivity with:

oxidisable substances, organic solvent, Alkali metals, Alkaline earth metals, Ammonia, alkalines, acids

Violent reactions possible with:

The generally known reaction partners of water.

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

metal alloys

Metals

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

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity

Symptoms: Possible symptoms: mucosal irritations

Acute dermal toxicity

This information is not available.

Skin irritation

Mixture causes skin irritation.

Eye irritation

Mixture causes serious eye irritation.

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.

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Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Components

iron(III) nitrate

Acute oral toxicity

LD50 Rat: 3.250 mg/kg (RTECS) The value is given in analogy to the following substances:

nitric acid

Skin irritation

Rabbit

Result: Causes severe burns.

(IUCLID)

Eye irritation

Rabbit

Result: Causes burns.

(IUCLID)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

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.

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12.6 Other adverse effects

Additional ecological information

Biological effects:

Harmful effect due to pH shift.

Hazard for drinking water supplies.

Discharge into the environment must be avoided.

Components

iron(III) nitrate

Toxicity to fish

LC50 *Leuciscus idus* (Golden orfe): 10 - 20 mg/l(Hommel)

Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Partition coefficient: n-octanol/water

Not applicable for inorganic substances

nitric acid

Toxicity to fish

LC50 *Gambusia affinis* (Mosquito fish): 72 mg/l; 96 h (IUCLID)

Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Partition coefficient: n-octanol/water

log Pow: -2,3

OECD Test Guideline 107

Bioaccumulation is not expected.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Henry constant

2482 Pa·m³/mol

Method: (calculated)

(Lit.) Distribution preferentially in air.

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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 3264
14.2 Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(CONT. NITRIC ACID)
14.3 Class	8
14.4 Packing group	III
14.5 Environmentally hazardous	--
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 3264
14.2 Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(CONT. NITRIC ACID)
14.3 Class	8
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 3264
14.2 Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(CONT. NITRIC ACID NOT MORE THAN 5%)
14.3 Class	8
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-A S-B

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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 Directive 96/82/EC does not apply

SEVESO III
Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

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 not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of ≥ 0.1 % (w/w).

National legislation

Storage class 6.1C
The data applies to the entire pack.

15.2 Chemical safety assessment

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

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SECTION 16. Other information

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

H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Warning

Hazard statements

H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements

Response

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.

P313 Get medical advice/ attention.

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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.

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.

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SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No. 114897
Product name Chloride Test Method: photometric 2.5 - 250 mg/l Cl⁻ Spectroquant®

Cl-2

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 Reagent for 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 3, Dermal, H311

Specific target organ toxicity - repeated exposure, Category 2, H373

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

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

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Product name

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2.2 Label elements

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

Hazard pictograms



Signal word

Danger

Hazard statements

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H373 May cause damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing.

Response

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

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

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H311 Toxic in contact with skin.

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Precautionary statements

P280 Wear protective gloves/ protective clothing.

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

Contains: Mercury(II) thiocyanate

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Mixture 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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Methanol (>= 1 % - < 3 %)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

67-56-1	01-2119433307-44-	
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Flammable liquid, Category 2, H225

Acute toxicity, Category 3, H301

Acute toxicity, Category 3, H331

Acute toxicity, Category 3, H311

Specific target organ toxicity - single exposure, Category 1, H370

Mercury(II) thiocyanate (>= 1 % - < 2 %)

592-85-8	*)	
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Acute toxicity, Category 2, H330

Acute toxicity, Category 1, H310

Acute toxicity, Category 2, H300

Specific target organ toxicity - repeated exposure, Category 2, H373

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

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M-Factor: 100

*) 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. Call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Nausea, Headache, Tiredness, CNS disorders, Dizziness, inebriation, Drowsiness, agitation, spasms, Impairment of vision

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhoea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

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

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Unsuitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

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

Fire may cause evolution of:

Sulphur oxides

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

Remove container from danger zone and cool with water. 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. Keep away from heat and sources of ignition. 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 carefully with liquid-absorbent material (e.g. Chemisorb®). 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.

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Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

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

Storage conditions

Tightly closed in a well-ventilated place. Accesible only for authorised persons.

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.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

Methanol (67-56-1)

Worker DNEL, acute	Systemic effects	dermal	40 mg/kg Body weight
Worker DNEL, acute	Systemic effects	inhalation	260 mg/m ³
Worker DNEL, acute	Local effects	inhalation	260 mg/m ³
Worker DNEL, longterm	Systemic effects	dermal	40 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	260 mg/m ³
Worker DNEL, longterm	Local effects	inhalation	260 mg/m ³
Consumer DNEL, acute	Systemic effects	dermal	8 mg/kg Body weight
Consumer DNEL, acute	Systemic effects	inhalation	50 mg/m ³
Consumer DNEL, acute	Systemic effects	oral	8 mg/kg Body weight
Consumer DNEL, acute	Local effects	inhalation	50 mg/m ³
Consumer DNEL, longterm	Systemic effects	dermal	8 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	50 mg/m ³
Consumer DNEL, longterm	Systemic effects	oral	8 mg/kg Body weight

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Consumer DNEL, Local effects inhalation 50 mg/m³
longterm

Predicted No Effect Concentration (PNEC)

Methanol (67-56-1)

PNEC Fresh water	154 mg/l
PNEC Fresh water sediment	570,4 mg/kg
PNEC Marine water	15,4 mg/l
PNEC Soil	23,5 mg/kg
PNEC Sewage treatment plant	100 mg/l

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

Safety glasses

Hand protection

full contact:

Glove material:	polychloroprene
Glove thickness:	0,65 mm
Break through time:	> 480 min

splash contact:

Glove material:	natural latex
Glove thickness:	0,6 mm
Break through time:	> 240 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 720 Camapren® (full contact), KCL 706 Lapren® (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

Flame retardant antistatic protective clothing.

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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.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	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	87 °C Method: c.c. Information refers to the main component.
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	ca. 1,10 g/cm ³ at 20 °C
Relative density	No information available.

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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.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

none

SECTION 10. Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of explosion with:

acetylidene, organic halides, perchlorates, Acid chlorides, nonmetallic halides, iron(III) compounds, nitrates, fluorides, chlorates, hydrides, perchloric acid, Oxides of phosphorus, Nitric acid, silver compounds, silicon compounds, silanes, acid halides

Exothermic reaction with:

boron compounds, oxyhalogenic compounds, Potassium, sodium, Strong oxidizing agents, phosphorus halides, strong reducing agents, Acid chlorides, Strong acids, silver salt, nitrogen dioxide

Risk of ignition or formation of inflammable gases or vapours with:

potassium permanganate

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

various plastics, Metals

10.6 Hazardous decomposition products

in the event of fire: See section 5.

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SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity

Acute toxicity estimate: 1.644 mg/kg

Calculation method

Acute toxicity estimate: 1.644 mg/kg

Calculation method

Acute inhalation toxicity

Acute toxicity estimate: > 20 mg/l; 4 h ; vapour

Calculation method

Acute dermal toxicity

Acute toxicity estimate : 326,89 mg/kg

Calculation method

Acute toxicity estimate : 333,22 mg/kg

Calculation method

Skin irritation

Possible damages: slight irritation

Eye irritation

Possible damages: slight irritation

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

Mixture may cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

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acidosis, drop in blood pressure, agitation, spasms, inebriation, Dizziness, Drowsiness, Headache, Impairment of vision, blindness, CNS disorders, Nausea, Tiredness, narcosis, Coma, Irreversible damage of the optical nerve.

Symptoms may be delayed.

Possible damages:

Damage to:

Liver, Kidney, Cardiac

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhoea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Components

Methanol

Acute oral toxicity

LDLO human: 143 mg/kg (RTECS)

Acute toxicity estimate: 100,1 mg/kg

Expert judgement

Acute inhalation toxicity

LC50 Rat: 131,25 mg/l; 4 h ; vapour (ECHA)

Acute dermal toxicity

LD50 Rabbit: ca. 17.100 mg/kg (External MSDS)

Acute toxicity estimate : 300,1 mg/kg

Expert judgement

Skin irritation

Rabbit

Result: No skin irritation

(ECHA)

Eye irritation

Rabbit

Result: No eye irritation

(ECHA)

Sensitisation

Sensitisation test: Guinea pig

Result: negative

Method: OECD Test Guideline 406

Repeated dose toxicity

Rat

male and female

Inhalation

vapour

28 d

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daily
NOAEL: 6,66 mg/l
OECD Test Guideline 412
Subacute toxicity

Rat
male and female
Inhalation
365 d
daily
NOAEL: 0,13 mg/l
LOAEL: 1,3 mg/l
OECD Test Guideline 453

Germ cell mutagenicity
Genotoxicity in vivo
Micronucleus test
Mouse
male and female
Intraperitoneal injection
Result: negative
Method: OECD Test Guideline 474

Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test
Result: negative
Method: OECD Test Guideline 476

Mercury(II) thiocyanate

Acute oral toxicity
LD50 Rat: 46 mg/kg (RTECS)

Acute inhalation toxicity
Acute toxicity estimate: 0,051 mg/l; dust/mist
Expert judgement

Acute dermal toxicity
Acute toxicity estimate : 5,1 mg/kg
Expert judgement

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.

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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

Additional ecological information

Discharge into the environment must be avoided.

Components

Methanol

Toxicity to fish

flow-through test LC50 *Lepomis macrochirus* (Bluegill sunfish): 15.400 mg/l; 96 h
US-EPA

Toxicity to daphnia and other aquatic invertebrates

EC5 *E.sulcatum*: > 10.000 mg/l; 72 h (Lit.)

EC50 *Daphnia magna* (Water flea): > 10.000 mg/l; 48 h (IUCLID)

Toxicity to algae

static test EC50 *Pseudokirchneriella subcapitata* (green algae): ca. 22.000 mg/l; 96 h
OECD Test Guideline 201

Toxicity to bacteria

EC5 *Pseudomonas fluorescens*: 6.600 mg/l; 16 h (IUCLID)

static test IC50 activated sludge: > 1.000 mg/l; 3 h

Analytical monitoring: yes

OECD Test Guideline 209

Toxicity to fish (Chronic toxicity)

NOEC *Oryzias latipes* (Orange-red killifish): 7.900 mg/l; 200 h
(External MSDS)

Biodegradability

99 %; 30 d

OECD Test Guideline 301D

Readily biodegradable

Biochemical Oxygen Demand (BOD)

600 - 1.120 mg/g (5 d)

(IUCLID)

Chemical Oxygen Demand (COD)

1.420 mg/g

(IUCLID)

Theoretical oxygen demand (ThOD)

1.500 mg/g

(Lit.)

Ratio BOD/ThBOD

BOD5 76 %

Closed Bottle test

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Partition coefficient: n-octanol/water
log Pow: -0,77
(experimental)
(Lit.) Bioaccumulation is not expected.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Stability in water
2,2 yr
reaction with hydroxyl radicals (IUCLID)

Mercury(II) thiocyanate

Toxicity to fish
LC50 Pimephales promelas (fathead minnow): 0,15 mg/l; 96 h (Lit.)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 0,0052 mg/l; 48 h (Lit.)

Toxicity to algae
IC50 Ankistrodesmus falcatus: 0,162 mg/l; 96 h (own results)

M-Factor
100

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 3264
14.2 Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(CONT. NITRIC ACID)
14.3 Class	8
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

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14.1 UN number UN 3264
14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(CONT. NITRIC ACID)
14.3 Class 8
14.4 Packing group III
14.5 Environmentally hazardous --
14.6 Special precautions for user no

Sea transport (IMDG)

14.1 UN number UN 3264
14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(CONT. NITRIC ACID NOT MORE THAN 5%)
14.3 Class 8
14.4 Packing group III
14.5 Environmentally hazardous --
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 Toxic
2
Quantity 1: 50 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.

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

Substances of very high concern (SVHC) This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w).

National legislation

Storage class 6.1C

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.

H225	Highly flammable liquid and vapour.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

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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.

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.