

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 21.02.2007
Supersedes edition of 11.07.2006

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Reaktionsküvette

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Emergency telephone No.: Please contact the regional Merck representation
in your country.

2. Composition/information on ingredients

Aqueous solution of inorganic compounds.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Nitric acid 7697-37-2	231-714-2	007-004-00-1	O; R8 C; R35	≥ 1 - < 5 %
Iron(III) nitrate 10421-48-4	233-899-5		O; R8 Xi; R36/38	≥ 1 - < 10 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Irritating to eyes and skin.

4. First aid measures

After inhalation: fresh air.
After skin contact: wash off with plenty of water. Remove contaminated clothing.
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.
After swallowing: immediately make victim drink plenty of water. Call in physician.

Merck Safety Data Sheet

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5. Fire-fighting measures

Suitable extinguishing media:
In adaption to materials stored in the immediate neighbourhood.

Special risks:
Non-combustible. Ambient fire may liberate hazardous vapours.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:
Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Avoid substance contact. Do not inhale vapours/aerosols. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system.

Procedures for cleaning / absorption:
Take up with liquid-absorbent and neutralizing material (e.g. Chemisorb® H⁺, Merck Art. No. 101595). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed in a well-ventilated place. Accessible only for authorised persons. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	nitric acid
Short term (<15 min.)	1 ml/m ³ 2.6 mg/m ³

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

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Reaktionsküvette

Respiratory protection: required when vapours/aerosols are generated.

Eye protection: required

Hand protection:

In full contact:

Glove material: nitrile rubber

Layer thickness: 0.11 mm

Breakthrough time: > 480 Min.

In splash contact:

Glove material: nitrile rubber

Layer thickness: 0.11 mm

Breakthrough time: > 480 Min.

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

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. 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).

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

9. Physical and chemical properties

Form:	liquid
Colour:	yellow-brown
Odour:	odourless
pH value	(20 °C) ~ 1
Melting point	not available
Boiling point	not available
Ignition temperature	not available
Flash point	not applicable
Explosion limits	lower not available
	upper not available
Density	(20 °C) ~ 1.03 g/cm ³
Solubility in water	(20 °C) soluble

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Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Reaktionsküvette

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

Violent reactions possible with: metals.

Hazardous decomposition products

no information available

11. Toxicological information

Acute toxicity

Quantitative data on the toxicity of this product are not available.

Further toxicological information

Property that must be anticipated on the basis from the components of the preparation:

After inhalation: Irritations of the mucous membranes, coughing, and dyspnoea.

After skin contact: Irritations.

After eye contact: Irritations.

After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Other notes:

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.

Further data

Further hazardous properties cannot be excluded.

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

The following applies to dissolved iron compounds in general: fish: toxic as from 0.9 mg/l at pH 6.5-7.5; lethal as from 1 mg/l at pH 5.5-6.7; 50 mg/l iron upper limit for fish life.

When iron ions flocculate in an alkaline medium, mechanical damage occurs in aquatic organisms.

The following applies to nitrates in general: may contribute to the eutrophication of water supplies.

Hazard for drinking water. Fish: LC₅₀ > 500 mg/l.

Do not allow to enter waters, waste water, or soil!

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Reaktionsküvette

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID

UN 3316 CHEMIE-TESTSATZ, 9, III

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3316 CHEMICAL KIT, 9, III

Ems F-A S-P

Air CAO, PAX

UN 3316 CHEMICAL KIT, 9, III

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.
THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol: Xi Irritant

R-phrases: ---

S-phrases: ---

16. Other information

Text of any R phrases referred to under heading 2:

8 Contact with combustible material may cause fire.

35 Causes severe burns.

36/38 Irritating to eyes and skin.

Reduced labelling on the container due to small quantity.

Reason for alteration

General update.

Regional representation:

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

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.:	114730
Product name:	Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant® Reaktionsküvette

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

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 21.02.2007
Supersedes edition of 11.07.2006

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Cl-1K

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Emergency telephone No.: Please contact the regional Merck representation
in your country.

2. Composition/information on ingredients

Preparation contains inorganic and organic compounds.

The percent content of the mercury compound mentioned below refers to the amount of the pure mercury therein.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Mercury(II) thiocyanate 592-85-8	209-773-0	080-002-00-6	T+; R26/27/28 R33 N; R50/53	≥ 0.5 - < 2 %
methanol 67-56-1	200-659-6	603-001-00-X	F; R11 T; R23/24/25-39/23/24/25	≥ 0.1 - < 1 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Irritating to eyes and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Cl-1K

4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air.

If breathing stops: immediately apply mechanical ventilation, if necessary oxygen mask.

Immediately call in physician.

After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400.

Immediately remove contaminated clothing. Immediately call in physician.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After swallowing: make victim drink plenty of water, induce vomiting. Immediately call in physician.

5. Fire-fighting measures

Suitable extinguishing media:
powder, water, foam.

Special risks:

Combustible. Vapours heavier than air. Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire. The following may develop in event of fire: sulfur oxides.

Special protective equipment for fire fighting:

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:

Prevent fire-fighting water from entering surface water or groundwater. Contain escaping vapours with water.

6. Accidental release measures

Person-related precautionary measures:

Avoid substance contact. Do not inhale vapours/aerosols. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:

Do not allow to enter sewerage system.

Procedures for cleaning / absorption:

Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Cl-1K

7. Handling and storage

Handling:

Notes for safe handling:

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

Storage:

Tightly closed in a well-ventilated place. Accessible only for authorised persons. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	methanol
Value	200 ml/m ³ 260 mg/m ³
Skin resorption	Risk of skin absorption

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated.

Eye protection: required

Hand protection:

In full contact:	
Glove material:	butyl rubber
Layer thickness:	0.7 mm
Breakthrough time:	> 480 Min.
In splash contact:	
Glove material:	viton
Layer thickness:	0.70 mm
Breakthrough time:	> 120 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 898 Butoject® (full contact), 890 Vitoject® (splash contact).

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. 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).

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According to EC Directive 91/155/EEC

Catalogue No.: 114730
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Cl-1K

Other protective equipment: Suitable protective clothing.

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace. Work under hood . Do not inhale substance.

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	characteristic
pH value	not applicable
Melting point	not available
Boiling point	not available
Ignition temperature	not available
Flash point	not available
Explosion limits	lower not available
	upper not available
Density	(20 °C) ~ 1.10 g/cm ³
Solubility in	not determined

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

Violent reactions possible with: alkali metals, hydrides, nitrates, halogen-halogen compounds, perchloric acid, perchlorates, chlorates, nonmetallic oxyhalides, oxyhalogenic compounds, acid halides, nitrogen oxides, sulfur oxides, strong oxidizing agents.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

incompatible with various plastics, metals (in the presence of atmospheric oxygen and/or moisture).
Forms explosive mixtures with air on intense heating.

11. Toxicological information

Acute toxicity

Quantitative data on the toxicity of this product are not available.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Cl-1K

Further toxicological information

Property that must be anticipated on the basis from the components of the preparation:

After skin contact: Irritations. Danger of skin absorption.

After eye contact: Irritations.

Possible symptoms: After uptake: CNS disorders, nausea, tiredness, headache.

Other notes:

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).

Possible damages: Damage of: liver, kidneys.

Danger of cumulative effects.

Further data

Further hazardous properties cannot be excluded.

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Biological effects:

Harmful effect on aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Further ecologic data:

The following applies to the water-soluble matter contained in inorganic Hg compounds in general (tested with mercury(II) chloride): *Leuciscus idus* LC₅₀: 0.5 mg/l (48h), *Daphnia magna* EC₅₀: 0.005-3,6 mg/l (48h), *Chlorella pyrenoidosa* EC₅₀: 0.3 mg/l (5h), *Pseudomonas fluorescens* IC₅₀: 0.005 mg/l. The toxicity of mercury(II) ions for water organisms depends on the water hardness [source: IPCS].

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

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Cl-1K

14. Transport information

Road & Rail ADR, RID
UN 3316 CHEMIE-TESTSATZ, 9, III

Inland waterway ADN, ADNR not tested

Sea IMDG-Code
UN 3316 CHEMICAL KIT, 9, III
Ems F-A S-P

Air CAO, PAX
UN 3316 CHEMICAL KIT, 9, III

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.
THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol:	T	Toxic
R-phrases:	23/24/25-33-52/53	Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	36/37-45	Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
contains:	Mercury(II) thiocyanate	

16. Other information

Text of any R phrases referred to under heading 2:

11	Highly flammable.
23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
26/27/28	Very toxic by inhalation, in contact with skin and if swallowed.
33	Danger of cumulative effects.
39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Reduced labelling on the container due to small quantity.

Reason for alteration

Chapter 2: change in composition data.

General update.

Regional representation:

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

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.:	114730
Product name:	Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant® Cl-1K

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

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue:
Supersedes edition of

21.02.2007
11.07.2006

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Packungsblindküvette

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Emergency telephone No.: Please contact the regional Merck representation
in your country.

2. Composition/information on ingredients

Aqueous solution.

3. Hazards identification

No hazardous product as specified in Directive 67/548/EEC.

4. First aid measures

After inhalation: fresh air.
After skin contact: wash off with plenty of water. Remove contaminated clothing.
After eye contact: rinse out with plenty of water with the eyelid held wide open.
After swallowing: immediately make victim drink plenty of water. Consult doctor if feeling unwell.

5. Fire-fighting measures

Suitable extinguishing media:
In adaption to materials stored in the immediate neighbourhood.

Special risks:
Non-combustible.

6. Accidental release measures

Person-related precautionary measures:
Do not inhale vapours/aerosols.

Procedures for cleaning / absorption:
Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Packungsblindküvette

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed in a well-ventilated place. Accessible only for authorised persons. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated.

Eye protection: required

Hand protection: In full contact:
Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

In splash contact:
Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

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

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. 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).

Industrial hygiene:

Change contaminated clothing. Wash hands after working with substance.

9. Physical and chemical properties

Form: liquid

Colour: pink

Odour: odourless

pH value not available

Melting point not available

Boiling point ~ 100 °C

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Packungsblindküvette

Ignition temperature		not available
Flash point		not available
Explosion limits	lower	not available
	upper	not available
Density	(20 °C)	1.00 g/cm ³
Solubility in water	(25 °C)	freely soluble

10. Stability and reactivity

Conditions to be avoided

none

Substances to be avoided

The generally known reaction partners of water.

Hazardous decomposition products

no information available

11. Toxicological information

Acute toxicity

Quantitative data on the toxicity of this product are not available.

Further toxicological information

No first-hand knowledge of hazardous properties.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

No ecological problems are to be expected when the product is handled and used with due care and attention.

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114730
Product name: Chloride Cell Test Method: photometric 5 - 125 mg/l Spectroquant®
Packungsblindküvette

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID
UN 3316 CHEMIE-TESTSATZ, 9, III

Inland waterway ADN, ADNR not tested

Sea IMDG-Code
UN 3316 CHEMICAL KIT, 9, III
Ems F-A S-P

Air CAO, PAX
UN 3316 CHEMICAL KIT, 9, III

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.
THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol: ---
R-phrases: ---
S-phrases: ---

16. Other information

Reason for alteration

Chapter 4: first aid measures.

General update.

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 characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.