

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue:
Supersedes edition of

24.02.2007
27.04.2004

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

Identification of the product

Catalogue No.: 114552
Product name: Chromate Cell Test Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO₄ Spectroquant®
Blindküvette

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

CAS-No.:	7732-18-5		
M:	18.02 g/mol	EC-No.:	231-791-2
Formula Hill:	H ₂ O		

3. Hazards identification

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

4. First aid measures

No special precautionary measures necessary.

5. Fire-fighting measures

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

Special risks:
none

6. Accidental release measures

Procedures for cleaning / absorption:
Pour into drain.

Merck Safety Data Sheet

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CrO₄ Spectroquant®
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7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Away from combustible materials and sources of ignition and heat. 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: not required

Eye protection: not required

Hand protection: not required

Industrial hygiene:
not required

9. Physical and chemical properties

Form:	liquid		
Colour:	colourless		
Odour:	odourless		
pH value	(20 °C)	neutral	
Viscosity dynamic	(20 °C)	0.952	mPa*s
Melting point		0	°C
Boiling point		100	°C
Ignition temperature		not applicable	
Flash point		not applicable	
Explosion limits	lower	not applicable	
	upper	not applicable	
Vapour pressure	(20 °C)	23	hPa
Density	(20 °C)	1.00	g/cm ³
Solubility in Water		not available	

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10. Stability and reactivity

Conditions to be avoided

none

Substances to be avoided

The generally known reaction partners of water.

Hazardous decomposition products

none

Further information

none

11. Toxicological information

Acute toxicity

No toxic effects are to be expected when the product is handled appropriately.

12. Ecological information

not required

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, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3316 CHEMICAL KIT, 9, II

Ems F-A S-P

Air CAO, PAX

UN 3316 CHEMICAL KIT, 9, II

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 !

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CrO₄ Spectroquant®
Blindküvette

15. Regulatory information

Labelling according to EC Directives

Symbol: ---

R-phrases: ---

S-phrases: ---

16. Other information

Reason for alteration

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.

Safety Data Sheet

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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

Mixture of organic compounds.

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.
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:
Water, CO₂, foam, powder.

Special risks:
Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.
The following may develop in event of fire: nitrous gases.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus.

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

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6. Accidental release measures

Person-related precautionary measures:
Avoid inhalation of dusts.

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

Procedures for cleaning / absorption:
Take up dry. Forward for disposal. Clean up affected area. Avoid generation of dusts.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Away from combustible materials and sources of ignition and heat. Dry. At +15°C to +25°C.

Protected from light.

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 dusts 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 Dermatrill® L (full contact), 741 Dermatrill® 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).

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Reaktionsküvette

Industrial hygiene:
Change contaminated clothing. Wash hands after working with substance.

9. Physical and chemical properties

Form:	solid	
Colour:	pink	
Odour:	odourless	
pH value at 10 g/l H ₂ O	(20 °C)	~ 7
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	not available	
Bulk density	~ 400-500 kg/m ³	
Solubility in water	(20 °C)	soluble

10. Stability and reactivity

Conditions to be avoided
no information available

Substances to be avoided

Violent reactions possible with: strong oxidizing agents, strong acids, strong alkalis.

Hazardous decomposition products
in the event of fire: See chapter 5.

Further information

The following applies in general to flammable organic substances and preparations: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

11. Toxicological information

Acute toxicity

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

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Reaktionsküvette

Further toxicological information

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

Cannot be excluded:
After swallowing of large amounts: Nausea, vomiting, diarrhoea.

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:
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.

14. Transport information

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

Inland waterway ADN, ADNR not tested

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Reaktionsküvette

15. Regulatory information

Labelling according to EC Directives

Symbol: ---

R-phrases: ---

S-phrases: ---

16. Other information

Reason for alteration

Chapter 10: stability and reactivity.
Chapter 11: toxicological information.

General update.

Regional representation:

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

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Safety Data Sheet

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Identification of the product

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Cr-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

Aqueous solution.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Sulphuric acid				
7664-93-9	231-639-5	016-020-00-8	C; R35	≥ 15 - < 25 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Causes severe burns.

4. First aid measures

After inhalation: fresh air. Call in physician.
After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400. Immediately remove contaminated clothing.
After eye contact: rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Immediately call in ophthalmologist.
After swallowing: make victim drink plenty of water (if necessary several litres), avoid vomiting (risk of perforation!). Immediately call in physician. Do not attempt to neutralize.

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Cr-1K

5. Fire-fighting measures

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

Special risks:
Non-combustible. 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:
Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Do not inhale vapours/aerosols. Avoid substance contact. 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. Chemizorb® H⁺, Merck Art. No. 101595). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Away from combustible materials and sources of ignition and heat. 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. Filter E (acc. to DIN 3181) for SO₂, HCl

Eye protection: required

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Cr-1K

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). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

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).

Other protective equipment:

Acid-resistant protective clothing.

Industrial hygiene:

Change contaminated clothing and immerse in water. Apply skin-protective barrier cream. Wash hands and face after working with substance.

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	odourless
pH value	(20 °C) ~ 1
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) 1.18 g/cm ³
Solubility in water	(20 °C) soluble (development of heat)

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Cr-1K

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

A risk of explosion and/or of toxic gas formation exists with the following substances: /
Violent reactions possible with: water, alkali metals, alkali compounds, ammonia, alkaline earth metals, alkalis, acids, alkaline earth compounds, metals, metal alloys, phosphorus oxides, phosphorus, hydrides, halogen-halogen compounds, oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvents, acetylidene, nitriles, nitrides, organic nitro compounds, anilines, peroxides, picrates, lithium silicide.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

hygroscopic; has a corrosive effect;
incompatible with metals, animal/vegetable tissues.
Hydrogen may form upon contact with metals (danger of explosion!).

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 toxicological main component of the preparation:

After inhalation of aerosols: damage to the affected mucous membranes.

After skin contact: severe burns with formation of scabs.

After eye contact: burns, corneal lesions.

After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhoea.

After a latency period of several weeks possibly pyloric stenosis.

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 sulfuric acid: biological effects: harmful effect on aquatic organisms. Harmful effect due to pH shift. Toxic effect on fish and algae. Caustic even in diluted form.

Does not cause biological oxygen deficit. Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants.

Daphnia toxicity: Daphnia magna EC₅₀: 29 mg/l/24 h (calculated on the pure substance).

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

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Cr-1K

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, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3316 CHEMICAL KIT, 9, II

Ems F-A S-P

Air CAO, PAX

UN 3316 CHEMICAL KIT, 9, II

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15. Regulatory information

Labelling according to EC Directives

Symbol:	C	Corrosive
R-phrases:	35	Causes severe burns.
S-phrases:	26-36/37/39-45	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
contains:	Sulphuric acid	

16. Other information

Text of any R phrases referred to under heading 2:

35 Causes severe burns.

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CrO₄ Spectroquant®
Cr-1K

Reason for alteration

General update.

Regional representation:

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Cr-2K

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

Substance mixture.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Potassium persulfate 7727-21-1	231-781-8	016-061-00-1	O; R8 Xn; R22 Xi; R36/37/38 R42/43	≥ 25 - < 50 %
Sodium nitrate 7631-99-4	231-554-3		O; R8 Xn; R22 Xi; R36	≥ 50 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Contact with combustible material may cause fire. Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

4. First aid measures

After inhalation: fresh air. Consult doctor if feeling unwell.
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.

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5. Fire-fighting measures

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

Special risks:
Fire-promoting. Keep away from combustible materials. Development of hazardous combustion gases or vapours possible in the event of fire. The following may develop in event of fire: nitrous gases, nitrogen oxides, 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:
Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Avoid generation of dusts; do not inhale dusts. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

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

Procedures for cleaning / absorption:
Take up dry. Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

Notes for safe handling:
Work under hood. Do not inhale substance.

Storage:

Tightly closed. Away from combustible materials and sources of ignition and heat. Dry. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	Potassium peroxodisulphate
Sensitization	Sah Danger of sensitization of the airways and the skin

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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 dusts are generated. Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

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 Dermatrill® L (full contact), 741 Dermatrill® 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).

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.

9. Physical and chemical properties

Form:	solid	
Colour:	colourless	
Odour:	odourless	
pH value at 50 g/l H ₂ O	(20 °C)	~ 5.0-5.5
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	not available	
Bulk density	~ 1100 kg/m ³	

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Solubility in water	(20 °C)	soluble
Thermal decomposition	> 100	°C
Mean particle size	0.35	mm

10. Stability and reactivity

Conditions to be avoided
no information available

Substances to be avoided

the constituents may react with: water, bases, strong alkalis, acids, heavy metals, silver compounds, reducing agents, combustible substances, metals in powder form, cyanides (heat), carbon, oxidizable substances, performic acid, sulfur, alkali metals, acetic acid anhydride, polyvinyl chloride, sodium phosphite, sodium thiosulfate, aluminium oxide, boron phosphide.

Hazardous decomposition products
in the event of fire: See chapter 5.

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. Possible damages: pulmonary oedema. Risk of airways sensitization.

After skin contact: Irritations. Risk of skin sensitization.

After eye contact: Irritations.

After swallowing: mucosal irritations, nausea, diarrhoea, vomiting.

After absorption of large quantities: Methaemoglobinaemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms, key symptom: cyanosis (blue colouration of the blood).

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

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

The following applies to sulfate in general: biological effects: fish: toxic as from 7 g/l ; bacteria: toxic as from 2.5 g/l .

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

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Catalogue No.: 114552
Product name: Chromate Cell Test Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l
CrO₄ Spectroquant®
Cr-2K

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, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3316 CHEMICAL KIT, 9, II

Ems F-A S-P

Air CAO, PAX

UN 3316 CHEMICAL KIT, 9, II

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:	O Xn	Oxidizing Harmful
R-phrases:	22-42/43	Harmful if swallowed. May cause sensitization by inhalation and skin contact.
S-phrases:	22-24-37-45	Do not breathe dust. Avoid contact with skin. Wear suitable gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
contains:	Potassium persulfate Sodium nitrate	

16. Other information

Text of any R phrases referred to under heading 2:

8	Contact with combustible material may cause fire.
22	Harmful if swallowed.
36	Irritating to eyes.
36/37/38	Irritating to eyes, respiratory system and skin.
42/43	May cause sensitization by inhalation and skin contact.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.:	114552
Product name:	Chromate Cell Test Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K

Reduced labelling on the container due to small quantity.

Reason for alteration

Chapter 8: personal protective equipment.

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.

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 24.02.2007
Supersedes edition of 24.08.2004

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

Identification of the product

Catalogue No.: 114552
Product name: Chromate Cell Test Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-3K

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

Solution in DMSO.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Phosphoric acid				
7664-38-2	231-633-2	015-011-00-6	C; R34	≥ 1 - < 5 %

(Full text of R-Phrases in heading 16)

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: make victim drink plenty of water. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry). Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Call in physician.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114552
Product name: Chromate Cell Test Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l
CrO₄ Spectroquant®
Cr-3K

5. Fire-fighting measures

Suitable extinguishing media:
Water, CO₂, foam, powder.

Special risks:
Preparation with combustible ingredients. 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:
Contain escaping vapours with water. 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. Away from combustible materials and sources of ignition and heat. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	ortho-Phosphoric acid
Value	1 mg/m ³
Short term (<15 min.)	2 mg/m ³

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114552
Product name: Chromate Cell Test Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l
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Cr-3K

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: polychloroprene
Layer thickness: 0.65 mm
Breakthrough time: > 480 Min.
In splash contact:
Glove material: natural latex
Layer thickness: 0.6 mm
Breakthrough time: > 240 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 720 Camapren® (full contact), 706 Lapren® (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. Application of skin- protective barrier cream recommended. Wash hands after working with substance.

9. Physical and chemical properties

Form:	liquid		
Colour:	colourless		
Odour:	weak		
pH value	(20 °C)	~ 3-4	
Melting point		not available	
Boiling point		not available	
Ignition temperature		300-302 °C	(Dimethylsulfoxide)
Flash point		95 °C	o.c. (Dimethylsulfoxide)
Explosion limits	lower	1.8 Vol%	(Dimethylsulfoxide)
	upper	63.0 Vol%	(Dimethylsulfoxide)
Vapour pressure	(20 °C)	0.6 hPa	(Dimethylsulfoxide)
Density	(20 °C)	~ 1.08 g/cm ³	
Solubility in water	(20 °C)	soluble	

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114552
Product name: Chromate Cell Test Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l
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Cr-3K

10. Stability and reactivity

Conditions to be avoided

Strong heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Substances to be avoided

Exothermic reaction with: / Risk of explosion with: alkali metals (potassium, sodium), iron(III) compounds, hydrides, nitrates, halogen-halogen compounds, perchloric acid and salts, perchlorates, chlorates, nonmetallic oxyhalides, oxyhalogenic compounds, acid halides, sulfur trioxide, sulfur oxides, strong oxidizing agents, phosphorus oxides, nonmetallic halides, nitric acid, silver salt, silicon compounds, nitrogen dioxide, potassium permanganate, ketones, halogenated hydrocarbons.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

incompatible with various plastics, metals.
Forms explosive mixtures with air on intense heating.

11. Toxicological information

Acute toxicity

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

Further toxicological information

Properties to be expected on the basis of the main component of the preparation:

After skin contact: Slight irritations. Danger of skin absorption.

After eye contact: Slight irritations.

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

Possible damages: Damage of: liver, kidneys.

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:

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

13. Disposal considerations

Product:

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Merck Safety Data Sheet

According to EC Directive 91/155/EEC

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Air CAO, PAX
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THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

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

16. Other information

Text of any R phrases referred to under heading 2:

34 Causes burns.

Reason for alteration

Chapter 8: specific control parameter.
Chapter 10: stability and reactivity.

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.