

# Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 26.04.2004  
Supersedes edition of 30.06.1998

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

### *Identification of the product*

Catalogue No.: 114758  
Product name: Chromate Test Method: photometric also refill pack for art.  
1.14756.0001 0.010 - 3.00 mg/l Cr 650 Tests  
0.02 - 6.69 mg/l CrO<sub>4</sub> Spectroquant®  
Cr-1

### *Use of the substance/preparation*

Reagent for analysis

### *Company/undertaking identification*

Company: Merck KGaA \* 64271 Darmstadt \* Germany \* Tel: +49 (0)6151/72-0  
Emergency telephone No.: +49 (0)6151/72112 \* Fax: +49 (0)6151/72-7780

## 2. Composition/information on ingredients

Preparation contains inorganic and 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. 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. Consult doctor if feeling unwell.

## 5. Fire-fighting measures

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

Special risks:  
Preparation with combustible ingredients. Development of hazardous combustion gases or vapours possible in the event of fire.

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

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

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## 6. Accidental release measures

Person-related precautionary measures:  
Avoid generation of dusts; do not inhale 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.

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## 7. Handling and storage

*Handling:*

No further requirements.

*Storage:*

Tightly closed. At +15°C to +25°C.

The data apply to the entire pack.

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## 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 740 Dermatril® (full contact), 740 Dermatril® (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](http://www.kcl.de)).

Industrial hygiene:

Change contaminated clothing. Wash hands after working with substance.

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## 9. Physical and chemical properties

Form:	solid	
Colour:	white	
Odour:	odourless	
pH value		not available
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		~ 1000-1150 kg/m <sup>3</sup>
Solubility in water	(20 °C)	soluble

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## 10. Stability and reactivity

*Conditions to be avoided*

Heating.

*Substances to be avoided*

no information available

*Hazardous decomposition products*

no information available

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## 11. Toxicological information

*Acute toxicity*

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

*Further toxicological information*

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

*Further data*

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

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## 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!

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## 13. Disposal considerations

### *Product:*

Chemicals must be disposed of in compliance with the respective national regulations. Under [www.retrologistik.de](http://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](http://www.retrologistik.de) you will find special information on the respective national conditions as well as contact partners.

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## 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  
CHEMICAL KIT, 9, UN 3316, 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 !**

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## 15. Regulatory information

### *Labelling according to EC Directives*

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

### *German regulations*

Water pollution class 3 (highly polluting substance) VwVwS Anh. 4  
Storage class VCI 10-13

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## 16. Other information

# Merck Safety Data Sheet

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## *Reason for alteration*

Chapter 14: transport information.

General update.

## *Contact for information:*

HSSE-C/CI \* Tel: +49 (0)6151/722775 \* Fax: +49 (0)6151/726433 \* e-mail:prodsafe@merck.de

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*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.*

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Cr-2

### Use of the substance/preparation

Reagent for analysis

### Company/undertaking identification

Company: Merck KGaA \* 64271 Darmstadt \* Germany \* Tel: +49 (0)6151/72-0  
Emergency telephone No.: +49 (0)6151/72112 \* Fax: +49 (0)6151/72-7780

## 2. Composition/information on ingredients

Preparation contains inorganic and organic compounds.

### 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. Keep airways free.  
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: 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.

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## 5. Fire-fighting measures

Suitable extinguishing media:  
Water, foam, powder.

Special risks:  
Preparation with combustible ingredients. Vapours heavier than air. 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.

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 substance contact. Do not inhale vapours/aerosols.

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<sup>+</sup>, Art. No. 101595). Forward for disposal. Clean up affected area.

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## 7. Handling and storage

*Handling:*

No further requirements.

*Storage:*

Tightly closed. At +15°C to +25°C.

The data apply to the entire pack.

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## 8. Exposure controls/personal protection

*Specific control parameter*

EC	
Name	ortho-Phosphoric acid
Value	1 mg/m <sup>3</sup>

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## TRGS 900

Name	ortho-Phosphoric acid
Value	1 mg/m <sup>3</sup>
Peak limit	2 exceeding factor: 2-fold in 15 minutes
Name	Dimethyl sulfoxide
Value	160 mg/m <sup>3</sup>
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:	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](http://www.kcl.de)).

Industrial hygiene:

Change contaminated clothing. Apply skin-protective barrier cream. Wash hands after working with substance.

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## 9. Physical and chemical properties

Form:	liquid	
Colour:	colourless	
Odour:	odourless	
pH value	(20 °C)	acid
Melting point		not available
Boiling point		not available
Ignition temperature	300-302 °C	(Dimethylsulfoxide)
Flash point	95 °C	o.c. (Dimethylsulfoxide)



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Explosion limits	lower	1.8	Vol%	(Dimethylsulfoxide)
	upper	63.0	Vol%	(Dimethylsulfoxide)
Vapour pressure	(20 °C)	0.6	hPa	(Dimethylsulfoxide)
Density	(20 °C)	~ 1.07	g/cm <sup>3</sup>	
Solubility in water	(20 °C)	soluble		
log Pow:		-1.35		(experimental) (Dimethylsulfoxide)

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## 10. Stability and reactivity

### *Conditions to be avoided*

Strong heating.

### *Substances to be avoided*

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.  
Explosible with air in a vaporous/gaseous state when heated.

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## 11. Toxicological information

### *Acute toxicity*

Applicable to the main component:

LD<sub>50</sub> (dermal, rat): 40000 mg/kg.

LD<sub>50</sub> (oral, rat): 14500 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Slight irritations.

Skin irritation test (rabbit): Slight irritations.

### *Subacute to chronic toxicity*

Applicable to the main component:

Sensitization:

Sensitization test (guinea pig): negative.

No indication of carcinogenic activity.

No indication of mutagenic activity.

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

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## *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.

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## **12. Ecological information**

Applicable to the main component:

Abiotic degradation:  
Rapid degradation. (air)

Biologic degradation:  
Biodegradation: 3.1 % /14 d.  
Biologically not readily degradable.

Behavior in environmental compartments:  
Distribution: log p(o/w): -1.35 (experimental).  
No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:  
Biological effects:  
Fish toxicity: *L.macrochirus* LC<sub>50</sub>: 33500 mg/l /48 h.  
Bacterial toxicity: activated sludge EC<sub>50</sub>: 10-100 mg/l /30 min.

Further ecologic data:  
Do not allow to enter waters, waste water, or soil!

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## **13. Disposal considerations**

### *Product:*

Chemicals must be disposed of in compliance with the respective national regulations. Under [www.retrologistik.de](http://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](http://www.retrologistik.de) you will find special information on the respective national conditions as well as contact partners.

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## 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  
CHEMICAL KIT, 9, UN 3316, 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 !**

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## 15. Regulatory information

*Labelling according to EC Directives*

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

*German regulations*

Water pollution class 1 (slightly polluting substance) VwVwS Anh. 4  
Storage class VCI 10-13

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## 16. Other information

Text of any R phrases referred to under heading 2:

34 Causes burns.

*Reason for alteration*

Chapter 14: transport information.

General update.

*Contact for information:*

HSSE-C/CI \* Tel: +49 (0)6151/722775 \* Fax: +49 (0)6151/726433 \* e-mail:prodsafe@merck.de

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*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.*