

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 05.08.2004
Supersedes edition of 13.05.2004

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

Identification of the product

Catalogue No.: 114834
Product name: Cadmium Cell Test Method: photometric 0.025 - 1.000 mg/l Cd 25
Tests Spectroquant®
Blindwertküvette

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

Aqueous solution 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. 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:
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.: 114834
Product name: Cadmium Cell Test Method: photometric 0.025 - 1.000 mg/l Cd 25 Tests
Spectroquant®
Blindwertküvette

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: not required

Industrial hygiene:

Change contaminated clothing. Wash hands after working with substance.

9. Physical and chemical properties

Form:	liquid	
Colour:	pink	
Odour:	odourless	
pH value	(20 °C)	6-7
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	(20 °C)	1.00 g/cm ³
Solubility in water	(20 °C)	soluble

Merck Safety Data Sheet

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10. Stability and reactivity

Conditions to be avoided

no information available

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

Hazardous properties cannot be excluded, but are relatively improbable due to the low concentration of the dissolved substance(s).

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.

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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Product name: Cadmium Cell Test Method: photometric 0.025 - 1.000 mg/l Cd 25 Tests
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Blindwertküvette

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 !

15. Regulatory information

Labelling according to EC Directives

Symbol: ---

R-phrases: ---

S-phrases: ---

German regulations

Water pollution class nwg (nonpolluting substance) VwVwS Anh. 4

Storage class VCI 10-13

16. Other information

Reason for alteration

General update.

Contact for information:

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

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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Tests Spectroquant®
Küvettenreagenz

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

Aqueous solution of organic compounds.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Triton-X-100 9002-93-1			Xn; R22 Xi; R41	≥ 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: immediately make victim drink plenty of water. Consult doctor if feeling unwell.

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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.

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

6. Accidental release measures

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

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.

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

TRGS 900

Name	2,2',2''-Nitrilotriethanol
Value	5 mg/m ³ inhalable fraction

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

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Product name: Cadmium Cell Test Method: photometric 0.025 - 1.000 mg/l Cd 25 Tests
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Küvettenreagenz

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).

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

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	odourless
pH value	(20 °C) ~ 9.5
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	(20 °C) ~ 1.016 g/cm ³
Solubility in Water	not available

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

The generally known reaction partners of water.

Hazardous decomposition products

no information available

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Spectroquant®
Küvettenreagenz

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 relatively improbable due to the low concentration of the dissolved substance(s).

Cannot be excluded:
After eye contact: Slight irritations.

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.

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

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Spectroquant®
Küvettenreagenz

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

16. Other information

Text of any R phrases referred to under heading 2:

22 Harmful if swallowed.

41 Risk of serious damage to eyes.

Reason for alteration

Chapter 8: personal protective equipment.

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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Tests Spectroquant®
Cd-1K

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

Solution in N,N-dimethylformamide.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
N,N-Dimethylformamide 68-12-2	200-679-5	616-001-00-X	Repr. Cat. 2; R61 Xn; R20/21 Xi; R36	≥ 50 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

May cause harm to the unborn child. Also harmful by inhalation and in contact with skin. Irritating to eyes.

Restricted to professional users. Attention -
Avoid exposure - obtain special instructions before use.

4. First aid measures

After inhalation: fresh air. Call in physician.
After skin contact: wash off with plenty of water. Remove contaminated clothing. Call in physician.
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. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry). Call in physician.

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Spectroquant®
Cd-1K

5. Fire-fighting measures

Suitable extinguishing media:
CO₂, foam, powder.

Special risks:
Combustible. Vapours heavier than air. Forms explosive mixtures with air at elevated temperatures. Development of hazardous combustion gases or vapours possible in the event of fire. The following may develop in event of fire: nitrogen 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 material (e.g. Chemizorb®). 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

BAT Germany (biol. tolerance value)

Name	Dimethylformamide
Parametr	Methylformamide
Values	35 mg/l
Test material	urine
test extraction, time	b

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Cd-1K

EC

Name N,N-Dimethylformamide
Embryotoxic R(E) 2:should be regarded as if it impaire developmental toxicity

TRGS 900

Name N,N-Dimethylformamide
Value 10 ml/m³
30 mg/m³
Peak limit 4 exceeding factor: 4-fold in 15 minutes
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. Filter A (acc. to DIN 3181) for vapours of organic compounds.

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: > 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 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).

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: brown
Odour: weak
pH value (20 °C) ~ 7
Melting point not available

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Spectroquant®
Cd-1K

Boiling point		153	°C	(Dimethylformamide)
Ignition temperature		440	°C	(Dimethylformamide)
Flash point		59	°C	(Dimethylformamide)
Explosion limits	lower	not available		
	upper	not available		
Density	(20 °C)	~ 0.95	g/cm ³	
Solubility in water	(20 °C)	soluble		
log Pow:		-0.87		(Dimethylformamide)

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

alkali metals, halogens, halides, reducing agents, triethylaluminium, nitrates, metallic oxides, nonmetallic oxides. Violent reactions possible with: strong oxidizing agents, halogenated hydrocarbons.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

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

11. Toxicological information

Acute toxicity

Applicable to the main component:

LC₅₀ (inhalation, rat): 9-15 mg/l /4 h.

LD₅₀ (dermal, rabbit): 1500 mg/kg.

LD₅₀ (oral, rat): 2800 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Irritations.

Skin irritation test (rabbit): No irritation.

Subacute to chronic toxicity

The following data refer to the toxicologically determinant component of the formulation:

Based on clear evidence from animal experiments there is a high risk of teratogenic effects.

Pregnant women must not be exposed to the product.

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Spectroquant®
Cd-1K

Further toxicological information

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

After skin contact: Danger of skin absorption.
After eye contact: Irritations.
After swallowing: Symptoms in: gastrointestinal tract.

Further data

Further hazardous properties cannot be excluded.
The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

The following data refer to the toxicologically determinant component of the formulation:

Abiotic degradation:
air: Rapid degradation.

Biologic degradation:
Biodegradation: >90 % /28 d.
The product is readily biodegradable according to the OECD criteria.

Behavior in environmental compartments:
Distribution: $\log p(o/w)$: -0.87 (Dimethylformamide).
No bioaccumulation is to be expected ($\log P(o/w) < 1$).
Henry constant: $0.00747 \text{ Pa} \cdot \text{m}^3/\text{mol}$.

Ecotoxic effects:
Biological effects:
Fish toxicity:
L.macrochirus LC_{50} : 6300 mg/l /96 h.
Onchorhynchus mykiss LC_{50} : 9800 mg/l /96 h.
P.promelas LC_{50} : 10600 mg/l /96 h.
Daphnia toxicity: Daphnia magna EC_{50} : 15700 mg/l /48 h.
Algal toxicity: Desmodesmus subspicatus IC_{50} : >500 mg/l /96 h.
Bacterial toxicity: Photobacterium phosphoreum EC_{50} : 2000 mg/l /5 min microtox test.
Maximum permissible toxic concentration:
Algal toxicity: Sc.quadricauda IC_5 : 10 mg/l.
When used properly, no impairments in the function of waste- water-treatment plants are to be expected.

Further ecologic data:
TOD: 1.863 g/g.
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.

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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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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

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THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol:	T	Toxic
R-phrases:	61-20/21	May cause harm to the unborn child. Also harmful by inhalation and in contact with skin.
S-phrases:	53-36/37-45	Avoid exposure - obtain special instructions before use. 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:	N,N-Dimethylformamide	

German regulations

Water pollution class	1 (slightly polluting substance) VwVwS Anh. 4
Storage class VCI	6.1 A
Data sheet of the Chemical Professional Association	M017 Solvents M039 Teratogenic effects - protection at working place M051 Dangerous chemical substances

The employment restrictions for young workers in accordance with section 22 of the Youth Employment Protection Law (JARbSchG) are to be observed.

The employment restrictions for expectant and nursing mothers in accordance with sections 4 and 5 of the Maternity Protection Guideline (MuSchRiV) are to be observed.

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16. Other information

Text of any R phrases referred to under heading 2:

20/21

36 Irritating to eyes.

61 May cause harm to the unborn child.

Reduced labelling on the container due to small quantity.

Reason for alteration

Chapter 4: first aid measures.

Chapter 8: specific control parameter.

General update.

Contact for information:

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Tests Spectroquant®
Cd-2K

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

CAS-No.:	62-56-6	EC-Index-No.:	612-082-00-0
M:	76.12 g/mol	EC-No.:	200-543-5
Formula Hill:	CH ₄ N ₂ S		
Chemical formula:	H ₂ NCSNH ₂		

3. Hazards identification

Harmful if swallowed. Limited evidence of a carcinogenic effect. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of harm to the unborn child.

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.
After swallowing: immediately make victim drink plenty of water. Call in physician.

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Cd-2K

5. Fire-fighting measures

Suitable extinguishing media:
water, foam, powder.

Special risks:
Combustible. Formation of hazardous combustion gases or vapours possible in event of fire. The following may develop in event of fire: sulfur oxides, nitrogen 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 in a well-ventilated place. Accessible only for authorised persons. Dry. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	Thiourea
Carcinogenic	C 3:owing possible carcinogenic effects for man
Embryotoxic	R(E) 3:cause concern to humans owing to possible developmental toxic effects

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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.

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). 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).

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) 6-8
Melting point	174-177 °C
Boiling point	not applicable (decomposition)
Ignition temperature	440 °C (dust)
Flash point	not applicable
Explosion limits	lower not applicable upper not applicable
Vapour pressure	not applicable
Density	(20 °C) 1.405 g/cm ³
Bulk density	640 kg/m ³

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114834
Product name: Cadmium Cell Test Method: photometric 0.025 - 1.000 mg/l Cd 25 Tests
Spectroquant®
Cd-2K

Solubility in water	(20 °C)	137	g/l	
log Pow:	(20 °C)	-0.92		(experimental)

10. Stability and reactivity

Conditions to be avoided

Heating.

Substances to be avoided

oxidizing agent, acryl aldehyde, nitric acid, hydrogen peroxide.

Hazardous decomposition products

in the event of fire: See chapter 5.

11. Toxicological information

Acute toxicity

LD₅₀ (dermal, rabbit): >2800 mg/kg.

LD₅₀ (oral, rat): 1750 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Slight irritations (OECD 405).

Skin irritation test (rabbit): No irritation (OECD 404).

Subacute to chronic toxicity

The carcinogenic potential requires further clarification.

The possibility of an embryotoxic effect has not yet been fully assessed. Pregnant women must not be exposed to the product.

Mutagenicity (mammal cell test): micronucleus negative.

Bacterial mutagenicity: Ames test: negative.

Further toxicological information

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

After skin contact: Sensitization possible in predisposed persons.

After eye contact: Slight irritations.

After swallowing: nausea, vomiting, diarrhoea, gastrointestinal complaints.

Systemic effects: changes in the blood picture. Damage of: thyroid, bone marrow.

Further data

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

Merck Safety Data Sheet

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12. Ecological information

Biologic degradation:

Biodegradation: 0 % /34 d MITI test.

Biologically not readily degradable.

Behavior in environmental compartments:

Distribution: log p(o/w): -0.92 (20 °C) (experimental).

No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Biological effects:

Toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Fish toxicity: Br.rerio LC₅₀: 10000 mg/l /96 h.

Daphnia toxicity: Daphnia magna EC₅₀: 35 mg/l /48 h.

Algal toxicity: Desmodesmus subspicatus IC₅₀: 3.8-10 mg/l /72 h.

Bacterial toxicity: Ps.putida EC₁₀: 1265 mg/l /18 h.

Further ecologic data:

Degradability:

BOD₅: 0.013 g/g.

COD: 0.84 g/g.

TOD: 2.42 g/g.

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, 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 !

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

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Product name: Cadmium Cell Test Method: photometric 0.025 - 1.000 mg/1 Cd 25 Tests
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15. Regulatory information

Labelling according to EC Directives

Symbol:	Xn N	Harmful Dangerous for the environment
R-phrases:	22-40	Harmful if swallowed. Limited evidence of a carcinogenic effect.
S-phrases:	36/37	Wear suitable protective clothing and gloves.
EC-No.:	200-543-5	EC label
contains:	Thiourea	

German regulations

Water pollution class	2	(polluting substance) VwVwS Anh. 2 KennNr. 786
Storage class VCI	10-13	
Data sheet of the Chemical Professional Association	M050	Dealing with harmful substances M039 Teratogenic effects - protection at working place M053 General industrial safety measures for dangerous substances.
Local regulations on chemical accidents:	9b	

The employment restrictions for young workers in accordance with section 22 of the Youth Employment Protection Law (JArbSchG) are to be observed.

The employment restrictions for expectant and nursing mothers in accordance with sections 4 and 5 of the Maternity Protection Guideline (MuSchRiV) are to be observed.

16. Other information

Reduced labelling on the container due to small quantity.

Reason for alteration

General update.

Contact for information:

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

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.