

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 21.06.2005
Supersedes edition of 28.04.2004

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

Identification of the product

Catalogue No.: 114566
Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
Spectroquant®
Zn-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)6151/722440 * Fax: +49 (0)6151/72-7780

2. Composition/information on ingredients

Aqueous solution of inorganic and organic compounds.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Ethanolamine 141-43-5	205-483-3	603-030-00-8	Xn; R20/21/22 C; R34	≥ 5 - < 10 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Irritating to eyes, respiratory system 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 (if necessary several litres). Call in physician.

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5. Fire-fighting measures

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

Special risks:
Preparation with combustible ingredients. Forms explosive mixtures with air on intense heating.
Vapours heavier than air.
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. 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® OH⁻, Art. No. 101596). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Storage temperature: no restrictions.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

Merck Safety Data Sheet

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TRGS 900

Name	2-Aminoethanol
Value	2 ml/m ³ 5.1 mg/m ³
Peak limit	=1= Concentration must not exceed limit concentration.
Embryotoxic	Y Substances with which no foetotoxic risk is to be expected when observing the maximum allowable concentration (MAC Germany) and the biological tolerance value at the workplace (BAT Germany).
Skin resorption	Risk of skin absorption
Name	2,2',2''-Nitrioltriethanol
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

Hand protection:

In full contact:

Glove material: natural latex

Layer thickness: 0.6 mm

Breakthrough time: > 480 Min.

In splash contact:

Glove material: nitrile rubber

Layer thickness: 0.11 mm

Breakthrough time: > 10 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 706 Lapren® (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:	colourless
Odour:	odourless
pH value	(20 °C) 8.8
Melting point	not available

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Boiling point		not available
Ignition temperature		not available
Flash point		not available
Explosion limits	lower	not available
	upper	not available
Density	(20 °C)	1.07 g/cm ³
Solubility in water	(20 °C)	soluble

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

Violent reactions possible with: acids, oxidizing agent.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

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

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

After inhalation of vapours: mucosal irritations

After skin contact: Irritations. Danger of skin absorption.

After eye contact: Irritations.

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

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.

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Spectroquant®
Zn-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, 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: ---

German regulations

Water pollution class 1 (slightly polluting substance) VwVwS Anh. 4

Storage class VCI 10-13

Data sheet of the Chemical Professional Association M004 Irritant substances/corrosive substances

M050 Dealing with harmful substances

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

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16. Other information

Text of any R phrases referred to under heading 2:

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
34 Causes burns.

Reduced labelling on the container due to small quantity.

Reason for alteration

Chapter 15: labelling as hazardous substance after reevaluation.
Chapter 2: change in ingredients data.
Chapter 11: toxicological information.

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.

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Zn-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)6151/722440 * 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:
Formaldehyde 50-00-0	200-001-8	605-001-00-5	Carc. Cat. 3; R40 T; R23/24/25 C; R34 R43	≥ 10 - < 25 %
methanol 67-56-1	200-659-6	603-001-00-X	F; R11 T; R23/24/25-39/23/24/25	≥ 3 - < 10 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

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4. First aid measures

After inhalation: fresh air.

If breathing stops: mouth-to-mouth respiration or mechanical ventilation. Oxygen mask if necessary! Immediately 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: Drink plenty of water. activated charcoal (20 - 40 g in 10% slurry). Immediately call in physician.

Indications for the doctor: Gastric lavage. Laxative: Sodium sulfate (1 tablespoon/1/4 l water).
Mention methanol.

5. Fire-fighting measures

Suitable extinguishing media:

Water, CO₂, foam, powder.

Special risks:

Preparation with combustible ingredients. formaldehyde vapours: Forms explosive mixtures with air at ambient temperatures.

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 material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

Additional notes:

Render harmless: Treatment with excess sodium hydrogen sulfite solution.

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7. Handling and storage

Handling:

Notes for safe handling:

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

Storage:

Tightly closed. Storage temperature: no restrictions.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

BAT Germany (biol.
tolerance value)

Name	Methanol
Parameter	Methanol
Value	30 mg/l
Test material	urine
test extraction, time	c,b

EC

Name	Formaldehyde
Carcinogenic	C 3:owing possible carcinogenic effects for man
Sensitization	Sh Danger of sensitization of the skin

TRGS 900

Name	Formaldehyde
Value	0.5 ml/m ³ 0.62 mg/m ³
Peak limit	=1= Concentration must not exceed limit concentration.
Embryotoxic	Y Substances with which no foetotoxic risk is to be expected when observing the maximum allowable concentration (MAC Germany) and the biological tolerance value at the workplace (BAT Germany).
Skin resorption	Risk of skin absorption
Name	Methanol
Value	200 ml/m ³ 270 mg/m ³
Peak limit	4 exceeding factor: 4-fold in 15 minutes
Embryotoxic	Y Substances with which no foetotoxic risk is to be expected when observing the maximum allowable concentration (MAC Germany) and the biological tolerance value at the workplace (BAT Germany).
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.

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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: > 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. Work under hood . Do not inhale substance.

9. Physical and chemical properties

Form: liquid

Colour: colourless

Odour: pungent

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 (20 °C) ~ 1.04 g/cm³

Solubility in water (20 °C) soluble

log Pow 0.00 (Formaldehyde) (calculated)

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10. Stability and reactivity

Conditions to be avoided

Heating.

Substances to be avoided

polymerization initiators (e.g. alkali metals), acids, nitrogen oxides, hydrogen peroxide, oxidizing agent, performic acid, phenol.

Hazardous decomposition products

no information available

Stabilizer

methanol.

Further information

tends to polymerize;
incompatible with various metals and various alloys;
Explosible with air in a vaporous/gaseous state when heated.

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 0.578 mg/l /4 h (Formaldehyde) (IUCLID).
LD₅₀ (dermal, rabbit): 270 mg/kg (Formaldehyde) (IUCLID).
LD₅₀ (oral, rat): 100 mg/kg (Formaldehyde) (RTECS).

Subacute to chronic toxicity

Applicable to partial component(s):

The carcinogenic potential requires further clarification.

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. Inhalation may lead to the formation of oedemas in the respiratory tract.
After skin contact: Severe irritations. Risk of skin sensitization. Danger of skin absorption.
After eye contact: Severe irritations. Lacrimal irritation due to vapours.
After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. Risk of perforation in the oesophagus and stomach.
Systemic effects: narcosis, blindness.

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

The following statements refer to individual components of the preparation:

Abiotic degradation:
Rapid degradation. (air, formaldehyde)

Biologic degradation:
Biodegradation: 97.4 % /5 d (Formaldehyde) (IUCLID).
Readily biodegradable.

Behavior in environmental compartments:
Distribution: log Pow: 0.00 (Formaldehyde) (calculated).
No bioaccumulation is to be expected (log Pow <1).

Ecotoxic effects:
Biological effects: Toxic for aquatic organisms. protoplasmatic toxin. Caustic even in diluted form.
Disinfectant effect. Toxic effect on fish and plankton.
Sludge decomposition impaired or not possible even in diluted concentration.
Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities.

Fish toxicity: P.promelas LC₅₀: 24 mg/l /96 h (Formaldehyde) (Lit.); Danio rerio LC₅₀: 41 mg/l /96 h (Formaldehyde) (IUCLID).
Daphnia toxicity: Daphnia magna EC₅₀: ~2 mg/l /48 h (Formaldehyde) (IUCLID);
Bacterial toxicity: Photobacterium phosphoreum EC₅₀: 8.5 mg/l /30 min (Formaldehyde) (Lit.).

Maximum permissible toxic concentration: Algal toxicity: Sc.quadricauda IC₅: 2.5 mg/l /8 d (Formaldehyde) (IUCLID).
Bacterial toxicity: M.aeruginosa EC₅: 0.39 mg/l /8 d (Formaldehyde) (IUCLID).

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

13. Disposal considerations

Product:

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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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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:	Xn	Harmful
R-phrases:	20/21/22-40-43-68/20/21/22	Harmful by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
S-phrases:	36/37	Wear suitable protective clothing and gloves.
contains:	Formaldehyde methanol	

German regulations

Water pollution class 2 (polluting substance) VwVwS Anh. 4

Storage class VCI 10-13

Data sheet of the Chemical Professional Association M010 Formaldehyde
M004 Irritant substances/corrosive substances
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:

11 Highly flammable.
23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
34 Causes burns.
39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
40 Limited evidence of a carcinogenic effect.
43 May cause sensitization by skin contact.

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.

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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)6151/722440 * Fax: +49 (0)6151/72-7780

2. Composition/information on ingredients

Aqueous solution of inorganic and organic compounds.
Preparation contains: dimethyl sulfoxide.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Potassium cyanide 151-50-8	205-792-3	006-007-00-5	T+; R26/27/28 R32 N; R50/53	≥ 0.25 - < 1 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

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

4. First aid measures

After inhalation: fresh air.
If breathing stops: mouth-to-mouth respiration or mechanical ventilation. Oxygen mask if necessary! Immediately 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: Drink plenty of water. activated charcoal (20 - 40 g in 10% slurry). Caution if victim vomits. Call in physician.

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Reaktionsküvette

5. Fire-fighting measures

Suitable extinguishing media:
Water, CO₂, 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: hydrogen cyanide, 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 material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Storage temperature: no restrictions.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

Merck Safety Data Sheet

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TRGS 900

Name	Dimethyl sulfoxide
Value	160 mg/m ³
Skin resorption	Risk of skin absorption
Name	Cyanides (as CN)
Value	5 mg/m ³ inhalable fraction
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.

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:

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:	orange	
Odour:	characteristic	
pH value	(20 °C)	> 13
Melting point		not available
Boiling point		not available
Ignition temperature		not available
Flash point		not available

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Catalogue No.: 114566
Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
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Explosion limits	lower	not available
	upper	not available
Density	(20 °C)	~ 1.05 g/cm ³
Solubility in water	(20 °C)	soluble

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, acids.

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

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 of vapours: Irritation symptoms in the respiratory tract. absorption.

After skin contact: Danger of skin absorption.

After eye contact: Slight irritations.

After swallowing: CNS disorders, nausea, tiredness, headache.

Possible damages: Damage of: liver, kidneys.

Other notes:

The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

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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Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
Spectroquant®
Reaktionsküvette

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 statements refer to individual components of the preparation:

The following applies to cyanogen compounds in general: cyanide ions: biological effects: fish:

60 h. LC₅₀: 0.08 mg/l; lethal as from 0.05 mg/l ; for lower organisms lethal as from 0.1 mg/l .

Crustaceans: D. magna EC₅₀: 1.0 mg/l.

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

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:	Xn	Harmful
R-phrases:	20/21/22-52/53	Harmful by inhalation, in contact with skin and if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	36/37	Wear suitable protective clothing and gloves.
contains:	Potassium cyanide	

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114566
Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
Spectroquant®
Reaktionsküvette

German regulations

Water pollution class 2 (polluting substance) VwVwS Anh. 4

Storage class VCI 10-13

Data sheet of the Chemical Professional Association M002 Hydrocyanic acid

M050 Dealing with harmful 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.

16. Other information

Text of any R phrases referred to under heading 2:

26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

32 Contact with acids liberates very toxic gas.

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

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

According to EC Directive 91/155/EEC

Date of issue: 21.06.2005
Supersedes edition of 28.04.2004

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

Identification of the product

Catalogue No.: 114566
Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
Spectroquant®
Blindküvette

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)6151/722440 * 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 water.
After eye contact: rinse out with water.
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.: 114566
Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
Spectroquant®
Blindküvette

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Storage temperature: no restrictions.

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 (20 °C) ~ 6-7
Melting point not available
Boiling point not available

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114566
Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
Spectroquant®
Blindküvette

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

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

Due to the low concentration of the components contained in this product, risks are relatively improbable.

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.: 114566
Product name: Zinc Cell Test Method: photometric 0.20 - 5.00 mg/l Zn 25 Tests
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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
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: ---

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

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