

Safety Data Sheet



According to EC Directive 91/155/EEC

Date of issue: 27.03.2002 Supersedes edition of 27.10.1997

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

Identification of the product

Catalogue No.: 114553

Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Blindwertküvette

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Tel: +49 (0)6151/72-0

Emergency telephone No.: +49 (0)6151/72112 * Telefax: +49 (0)6151/72-7780 *

2. Composition/information on ingredients

CAS-No.: 7732-18-5

M: 18.02 g/mol

EC-No.: 231-791-2

Formula Hill: H₂O

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.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. At +15°C to +25°C.
The data apply to the entire pack.

8. Exposure controls/personal protection

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Blindwertküvette

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 at (20 °C)	neutral
Viscosity dynamic (20 °C)	0.952 mPa*s
Melting point	0 °C
Boiling point	100 °C
Ignition temperature	not available
Flash point	not available
Explosion limits lower	not available
upper	not available
Vapour pressure (20 °C)	23 hPa
Density (20 °C)	1.00 g/cm ³
Solubility in ethanol (20 °C)	soluble

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

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Blindwertküvette

11. Toxicological information*Acute toxicity*

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

Further toxicological information

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

Entire package: not subject to transport regulations.

15. Regulatory information*Labelling according to EC Directives*

Symbol: ---

R-phrases: ---

S-phrases: ---

German regulations

Storage class VCI 10-13

Other national regulations

Swiss toxic class: F

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Blindwertküvette

16. Other information

Reason for alteration

Chapter 4: first aid measures.

Chapter 5: fire-fighting measures.

Chapter 1: change in product name.

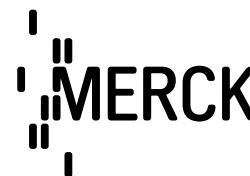
General update.

Contact for information:

USF/GEN P * Tel: +49 6151/722775 * Fax: +49 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: 27.03.2002 Supersedes edition of 27.10.1997

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

Identification of the product

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Reaktionsküvette

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Tel: +49 (0)6151/72-0
Emergency telephone No.: +49 (0)6151/72112 * Telefax: +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.	Labelling according to EC Directives	Content:
Sodium carbonate				
497-19-8	207-838-8	011-005-00-2	Xi R 36	≥ 1 - < 10 %

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

5. Fire-fighting measures

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

Special risks:
Non-combustible.

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

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Reaktionsküvette

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. 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: Use recommended

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

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	odourless
pH value at (20 °C)	~ 9
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)	~ 1.14 g/cm ³
Solubility in water (20 °C)	soluble

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Reaktionsküvette

10. Stability and reactivity

Conditions to be avoided

Heating.

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

Effect that cannot be excluded on the basis of the components of the preparation:

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:

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

Entire package: not subject to transport regulations.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Reaktionsküvette

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:

36 Irritating to eyes.

Reason for alteration

Chapter 5: fire-fighting measures.

Chapter 12: ecological information.

Chapter 1: change in product name.

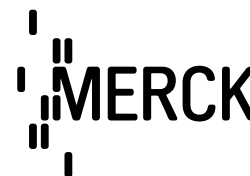
General update.

Contact for information:

USF/GEN P * Tel: +49 6151/722775 * Fax: +49 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: 27.03.2002 Supersedes edition of 27.03.1998

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

Identification of the product

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Cu-1K

Company/undertaking identification

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

2. Composition/information on ingredients

Solution in DMSO.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Labelling according to EC Directives	Content:
Dimethyl sulfoxide 67-68-5	200-664-3			≥ 50 %

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.

5. Fire-fighting measures

Suitable extinguishing media:
Water, foam, powder.

Special risks:
Combustible. Vapours heavier than air. Formation of hazardous combustion gases or vapours possible in 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 suitable chemical protection clothing and self-contained breathing apparatus.

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

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Cu-1K

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

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. At +15°C to +25°C. The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

TRGS 900

Name	Dimethyl sulfoxide
Value	160 mg/m ³
Skin resorption	Risk of skin absorption

Personal protective equipment:

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

Respiratory protection: required when vapours/aerosols are generated.

Eye protection: required

Hand protection: required

Industrial hygiene:

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

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	characteristic
pH value at (20 °C)	~ 7
Melting point	not available
Boiling point	not available
Ignition temperature	300-302 °C (Dimethylsulfoxide)

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Cu-1K

Flash point		95 °C	(Dimethylsulfoxide) o.c.
Explosion limits	lower	not available	
	upper	not available	
Density	(20 °C)	~ 1.10 g/cm ³	
Solubility in water	(20 °C)	soluble	
log Pow:		-1.35	(Dimethylsulfoxide) (experimental)

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

alkali metals, hydrides, nitrates, halogen-halogen compounds, perchloric acid, nonmetallic oxyhalides, oxyhalogenic compounds, acid halides, strong oxidizing agents.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

hygroscopic; inflammable;
incompatible with various plastics, metals (in the presence of atmospheric oxygen and/or moisture).

11. Toxicological information

Acute toxicity

Applicable to the main component:

LD₅₀ (dermal, rat): 40000 mg/kg.

LD₅₀ (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.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Cu-1K

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

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

Ecotoxic effects:
Biological effects:
Fish toxicity: *L.macrochirus* LC₅₀: 33500 mg/l /48 h.
Bacterial toxicity: activated sludge EC₅₀: 10-100 mg/l /30 min.

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

Entire package: not subject to transport regulations.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114553
Product name: Copper Cell Test Method: photometric 0.05 - 8.00 mg/l Cu 25
Tests Spectroquant®
Cu-1K

15. Regulatory information

Labelling according to EC Directives

Symbol: ---

R-phrases: ---

S-phrases: ---

German regulations

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

Storage class VCI 10-13

Data sheet of the Chemical Professional Association M017 Solvents

16. Other information

Reason for alteration

Chapter 15: deletion of labelling as hazardous substance after reevaluation.

Chapter 2: change in ingredients data.

Chapter 4: first aid measures.

Chapter 5: fire-fighting measures.

Chapter 8: specific control parameter.

Chapter 9: change/addition in physical/chemical properties.

Chapter 11: toxicological information.

Chapter 12: ecological information.

Chapter 1: change in product name.

General update.

Contact for information:

USF/GEN P * Tel: +49 6151/722775 * Fax: +49 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.