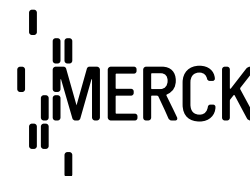


Safety Data Sheet



According to EC Directive 91/155/EEC

Date of issue: 27.03.2002 Supersedes edition of 25.06.1998

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

Identification of the product

Catalogue No.: 114767
Product name: Copper Test Method: photometric also refill pack for art.
1.14765.0001 0.02 - 6.00 mg/l Cu 200 Tests Spectroquant®
Cu-1A

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

Mixture of inorganic and 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. 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, induce vomiting, call in physician.

5. Fire-fighting measures

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

Special risks:
Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

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.

Merck Safety Data Sheet

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Cu-1A

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.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Dry. 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 dusts 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: 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

Solubility in water (20 °C) soluble

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

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1.14765.0001 0.02 - 6.00 mg/l Cu 200 Tests Spectroquant®
Cu-1A

10. Stability and reactivity

Conditions to be avoided

no information available

Substances to be avoided

no information available

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

After uptake of large quantities: Possible effects: nausea, vomiting, CNS disorders.

Further data

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

12. Ecological information

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

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

13. Disposal considerations

Product:

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.: 114767
Product name: Copper Test Method: photometric also refill pack for art.
1.14765.0001 0.02 - 6.00 mg/l Cu 200 Tests Spectroquant®
Cu-1A

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 1: change in product name.

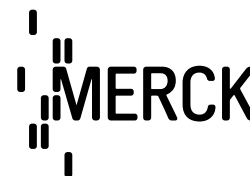
General update.

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 25.06.1998

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

Identification of the product

Catalogue No.: 114767
Product name: Copper Test Method: photometric also refill pack for art.
1.14765.0001 0.02 - 6.00 mg/l Cu 200 Tests Spectroquant®
Cu-2A

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, CO₂, 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

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Product name: Copper Test Method: photometric also refill pack for art.
1.14765.0001 0.02 - 6.00 mg/l Cu 200 Tests Spectroquant®
Cu-2A

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:	odourless

pH value not available

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.: 114767
Product name: Copper Test Method: photometric also refill pack for art.
1.14765.0001 0.02 - 6.00 mg/l Cu 200 Tests Spectroquant®
Cu-2A

Flash point		95 °C	o.c. (Dimethylsulfoxide)
Explosion limits	lower	not available	
	upper	not available	
Density		not available	
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

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Cu-2A

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.: 114767
Product name: Copper Test Method: photometric also refill pack for art.
1.14765.0001 0.02 - 6.00 mg/l Cu 200 Tests Spectroquant®
Cu-2A

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 4: first aid measures.

Chapter 8: specific control parameter.

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

Chapter 10: stability and reactivity.

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

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