

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 05.05.2004
Supersedes edition of 19.09.1997

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

Identification of the product

Catalogue No.: 119786
Product name: Copper standard solution traceable to SRM from NIST $\text{Cu}(\text{NO}_3)_2$ in HNO_3 0,5 mol/l 1000 mg/l Cu CertiPUR®

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.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Nitric acid 7697-37-2	231-714-2	007-004-00-1	O; R8 C; R35	≥ 1 - < 5 %
Copper(II) nitrate 3251-23-8	221-838-5		Xn; R22 Xi; R36/38 N; R50/53	≥ 0.25 - < 1 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Irritating to eyes and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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. Call in physician.

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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. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

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. 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 and neutralizing material (e.g. Chemizorb® H^+ , Art. No. 101595). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. At $+15^\circ\text{C}$ to $+25^\circ\text{C}$.

8. Exposure controls/personal protection

Specific control parameter

TRGS 900

Name	Nitric acid
Value	2 ml/m^3 5.2 mg/m^3
Peak limit	=1= Concentration must not exceed limit concentration.

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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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:

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

9. Physical and chemical properties

Form:	liquid	
Colour:	blue	
Odour:	odourless	
pH value	(20 °C)	~ 0.5
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)	~ 1.014 g/cm ³
Solubility in water	(20 °C)	soluble

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10. Stability and reactivity

Conditions to be avoided

no information available

Substances to be avoided

metals, strong alkalis.

Hazardous decomposition products

no information available

Further information

unsuitable working materials: metals (generation of hydrogen).

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

After skin contact: Irritations.

After eye contact: Irritations.

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

Other notes:

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

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.

Biological effects:

Harmful effect on aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Further ecologic data:

The following applies to copper compounds: biological effects: toxic for aquatic organisms; copper ions toxic for fish, algae, protozoa, and bacteria at concentrations below 1 mg/l. Fish:

C. auratus toxic 0,01 mg/l; mussels: 0.55 mg/l lethal in 12 h.; oysters: 0,1 mg/l toxic.

The following applies to nitrates in general: may contribute to the eutrophication of water supplies.

Hazard for drinking water. Fish: $\text{LC}_{50} > 500$ mg/l.

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

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13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de 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 3264 AETZENDER SAURER ANORGANISCHER FLUESSIGER STOFF, N.A.G. (ENTH. SALPETERSAEURELOESUNG), 8, III

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. NITRIC ACID SOLUTION), 8, III

Ems F-A S-B

Air CAO, PAX

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. NITRIC ACID SOLUTION), 8, UN 3264, 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.

15. Regulatory information

Labelling according to EC Directives

Symbol:	Xi	Irritant
R-phrases:	36/38-52/53	Irritating to eyes and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	26-61	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Avoid release to the environment. Refer to special instructions/Safety data sheets.

Reduced labelling (1999/45/EC, Art. 10,4)

Symbol:	Xi	Irritant
R-phrases:	52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	---	

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German regulations

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

Storage class VCI 8 B

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

M050 Dealing with harmful substances

M014 Nitric acid/ nitric oxides

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

16. Other information

Text of any R phrases referred to under heading 2:

8 Contact with combustible material may cause fire.
22 Harmful if swallowed.
35 Causes severe burns.
36/38 Irritating to eyes and skin.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Reason for alteration

Chapter 8: specific control parameter.

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.