

# Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 06.05.2004  
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## 1. Identification of the substance/preparation and of the company/undertaking

### Identification of the product

Catalogue No.: 119789  
Product name: Manganese standard solution traceable to SRM from NIST  $\text{Mn}(\text{NO}_3)_2$  in  $\text{HNO}_3$  0,5 mol/l 1000 mg/l Mn 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

Nitric acid 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 %

(Full text of R-Phrases in heading 16)

## 3. Hazards identification

Irritating to eyes 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: make victim drink plenty of water, induce vomiting, 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.

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## 6. Accidental release measures

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

Procedures for cleaning / absorption:  
Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb®  $\text{H}^+$ , Art. No. 101595). Forward for disposal. Clean up affected area.

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## 7. Handling and storage

*Handling:*

No further requirements.

*Storage:*

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

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## 8. Exposure controls/personal protection

*Specific control parameter*

TRGS 900

Name	Nitric acid
Value	2 $\text{ml}/\text{m}^3$ 5.2 $\text{mg}/\text{m}^3$
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](http://www.kcl.de)).

## Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

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## 9. Physical and chemical properties

Form:	liquid
Colour:	colourless
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 <sup>3</sup>
Solubility in water	(20 °C) soluble

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## 10. Stability and reactivity

### *Conditions to be avoided*

Heating.

### *Substances to be avoided*

The generally known reaction partners of water.  
increased reactivity with: metals, alkali metals, strong alkalis.

### *Hazardous decomposition products*

no information available

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## 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. 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:*

Manganese compounds are generally only very slightly absorbable via the gastrointestinal tract.

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.

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## 12. Ecological information

### *Ecotoxic effects:*

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

### *Further ecologic data:*

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.

The following applies to manganese ions: toxic to water organisms. Interference threshold for turbellarian worms (*Polycelis nigra*) 660 mg/l.  $\text{EC}_{0}$  (microregma) 31 mg/l. Fish toxicity:  $\text{LC}_{50}$  (orfe) 2490 mg/l;  $\text{LC}_{50}$  (trout) 2.91 mg/l (28 days). Daphnia toxicity:  $\text{LC}_{50}$  (daphnia magna) 50 mg/l. Acute toxicity: *Pseudomonas putida* 10.6 mg/l; *Photobacterium phosphoreum* 14.7 mg/l. In flowing waters, depending on the mixture, moderate to high toxic effect.

No ecological problems are to be expected when the product is handled and used with due care and attention.

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## 13. Disposal considerations

### *Product:*

Chemicals must be disposed of in compliance with the respective national regulations. Under [www.retrologistik.de](http://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](http://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 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.

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## 15. Regulatory information

### *Labelling according to EC Directives*

Symbol:	Xi	Irritant
R-phrases:	36/38	Irritating to eyes and skin.
S-phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### *German regulations*

Water pollution class nwg (nonpolluting 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.

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## 16. Other information

Text of any R phrases referred to under heading 2:

8 Contact with combustible material may cause fire.  
35 Causes severe burns.

*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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*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.*