

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 09.03.2004
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1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 104404
Product name: Mercury 99,9999 Suprapur®

Use of the substance/preparation

Reagent for analysis
Customized use

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Emergency telephone No.: Please contact the regional Merck representation in your country.

2. Composition/information on ingredients

CAS-No.:	7439-97-6	EC-Index-No.:	080-001-00-0
M:	200.59 g/mol	EC-No.:	231-106-7
Formula Hill:	Hg		

3. Hazards identification

Toxic by inhalation. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air. If necessary, apply mouth-to-mouth resuscitation or mechanical ventilation. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Immediately call in ophthalmologist.

After swallowing: if victim is still conscious, make him drink plenty of water, induce vomiting, administer activated charcoal (20 - 40 g in 10% slurry). Immediately 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. Vapours heavier than air. Ambient fire may liberate hazardous vapours. The following may develop in event of fire: mercury 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 suitable equipment. Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

Notes for safe handling:
Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Storage:

Tightly closed in a well-ventilated place. Accessible only for authorised persons. Storage temperature: no restrictions.

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. combination filter Hg-P3

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:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Work under hood . Do not inhale substance. Under no circumstances eat or drink at workplace.

9. Physical and chemical properties

Form:	liquid		
Colour:	silvery		
Odour:	odourless		
pH value		neutral	
Melting point		-39	°C
Boiling point	(1013 hPa)	357	°C
Ignition temperature		not available	
Flash point		not available	
Explosion limits	lower	not available	
	upper	not available	
Vapour pressure	(20 °C)	0.17	Pa
	(30 °C)	0.39	Pa
Density	(20 °C)	13.55	g/cm ³
Solubility in water	(25 °C)	0.02	mg/l
Bioconcentration factor		63000	(experimental)

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10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

acetylidene, ammonia, amines, alkali metals, azides, metals, halogens, acids, conc. sulfuric acid, nitric acid / hydrohalic acids), carbides, halogen oxides.

Hazardous decomposition products

in the event of fire: See chapter 5.

11. Toxicological information

Acute toxicity

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

Further toxicological information

After skin contact: Risk of skin sensitization.

Other notes:

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhoea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Behavior in environmental compartments:

Very highly bioaccumulative. BCF: 63000 (experimental).

Ecotoxic effects:

Biological effects:

Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Daphnia toxicity: Daphnia EC₅₀: 0.0052 mg/l /48 h.

Fish toxicity: Ictalurus punctatus LC₅₀: 0.35 mg/l /96 h.

Further ecologic data:

The following applies to the water-soluble matter contained in inorganic Hg compounds in general (tested with mercury(II) chloride): Leuciscus idus LC₅₀: 0.5 mg/l (48h), Daphnia magna EC₅₀: 0.005-3,6 mg/l (48h), Chlorella pyrenoidosa EC₅₀: 0.3 mg/l (5h), Pseudomonas fluorescens IC₅₀: 0.005 mg/l. The toxicity of mercury(II) ions for water organisms depends on the water hardness [source: IPCS].

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 2809 QUECKSILBER, 8, III

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 2809 MERCURY, 8, III

Ems F-A S-B

Air CAO, PAX

MERCURY, 8, UN 2809, 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:	T N	Toxic Dangerous for the environment
R-phrases:	23-33-50/53	Toxic by inhalation. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	7-45-60-61	Keep container tightly closed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety data sheets.
EC-No.:	231-106-7	EC label

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

Symbol:	T N	Toxic Dangerous for the environment
R-phrases:	23	Toxic by inhalation.
S-phrases:	45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other information

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Reason for alteration

Chapter 4: first aid measures.
Chapter 5: fire-fighting measures.

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

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.