

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 21.04.2004
Supersedes edition of 26.01.2000

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

Identification of the product

Catalogue No.: 114731
Product name: Hydrogen peroxide Cell Test Method: photometric 2.0 - 20.0 mg/l
H₂O₂ 25 Tests Spectroquant®
Küvetten-Reagenz

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

Preparation contains inorganic and organic compounds.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
methanol 67-56-1	200-659-6	603-001-00-X	F; R11 T; R23/24/25-39/23/24/25	≥ 50 %
Sulphuric acid 7664-93-9	231-639-5	016-020-00-8	C; R35	≥ 15 - < 25 %
Tetraethylorthotitanate 3087-36-3	221-410-8		R10 Xi; R36	≥ 1 - < 10 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Causes severe burns.
Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

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4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air.

If breathing stops: immediately apply mechanical ventilation, if necessary oxygen mask.

Immediately call in physician.

After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400.

Immediately remove contaminated clothing. Immediately call in physician.

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

After swallowing: make victim drink plenty of water, avoid vomiting (risk of perforation!).

Immediately call in physician. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call in physician, mentioning methanol ingestion.

5. Fire-fighting measures

Suitable extinguishing media:

powder, foam, spray water.

Special risks:

Combustible. Vapours heavier than air. Formation of explosible mixtures possible with air. The following may develop in event of fire: sulfur oxides.

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:

Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance.

6. Accidental release measures

Person-related precautionary measures:

Avoid substance contact. Do not inhale vapours/aerosols. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:

Do not allow to enter sewerage system; risk of explosion!

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.

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7. Handling and storage

Handling:

Notes for prevention of fire and explosion:
Keep away from sources of ignition. Take measures to prevent electrostatic charging.

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

Storage:

Tightly closed in a well-ventilated place, away from sources of ignition and heat. At +15°C to +25°C.

Accessible only for authorized persons.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

BAT Germany (biol. tolerance value)

Name	Methanol
Parameter	Methanol
Value	30 mg/l
Test material	urine
test extraction, time	c,b

TRGS 900

Name	Methanol
Value	200 ml/m ³ 270 mg/m ³
Peak limit	4 exceeding factor: 4-fold in 15 minutes
Embryotoxic	Y Substances with which no foetotoxic risk is to be expected when observing the maximum allowable concentration (MAC Germany) and the biological tolerance value at the workplace (BAT Germany).
Skin resorption	Risk of skin absorption
Name	Sulfuric acid
Kind of use	others
Value	0.1 mg/m ³ Inhalable fraction. The following regulation applies to the peak limit: short-term exposure duration: max. 15 minutes as mean value, frequency per shift: 4, time interval: min. 1 hour
Peak limit	1 Concentration must not exceed limit concentration.
Embryotoxic	Y Substances with which no foetotoxic risk is to be expected when observing the maximum allowable concentration (MAC Germany) and the biological tolerance value at the workplace (BAT Germany).

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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. Filter A (acc. to DIN 3181) for vapours of organic compounds

Eye protection: required

Hand protection: In full contact:
Glove material: butyl rubber
Layer thickness: 0.7 mm
Breakthrough time: > 480 Min.

In splash contact:
Glove material: viton
Layer thickness: 0.70 mm
Breakthrough time: > 120 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 898 Butoject® (full contact), 890 Vitoject® (splash contact).

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. Under no circumstances eat or drink at workplace. Work under hood . Do not inhale substance.

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	of methanol
pH value	not available
Melting point	not available
Boiling point	not available
Ignition temperature	~ 450 °C
Flash point	12 °C
Explosion limits	lower not available upper not available
Density	(20 °C) ~ 0.8 g/cm ³
Solubility in water	(20 °C) soluble

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10. Stability and reactivity

Conditions to be avoided

Heating.

Substances to be avoided

acid halides, alkali metals, alkaline earth metals, oxidizing agent (i.a. perchloric acid, perchlorates, salts of oxyhalogenic acids, CrO₃, halogen oxides, nitric acid, nitrogen oxides, nonmetallic oxides, chromosulfuric acid), hydrides, zinc diethyl, halogens.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

unsuitable working materials: metals, various plastics, animal/vegetable tissues.
Explosible with air in a vaporous/gaseous state.

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: coughing, dyspnoea, burns of mucous membranes.

After skin contact: burns. Danger of skin absorption.

After eye contact: Burns. Risk of blindness!

After swallowing: burns in mouth, throat, oesophagus and gastrointestinal tract.

After absorption: dizziness, inebriation, drop in blood pressure, acidosis, cyanosis, agitation, spasms, nausea, vomiting, headache, impaired vision, blindness (Irreversible damage of the optical nerve.), coma. Symptoms may occur after a latency period has elapsed.

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.

Degradability:

methanol: Biodegradable.

Further ecologic data:

The following applies to sulfuric acid: biological effects: harmful effect on aquatic organisms.

Harmful effect due to pH shift. Toxic effect on fish and algae. Caustic even in diluted form.

Does not cause biological oxygen deficit. Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants.

Daphnia toxicity: Daphnia magna EC₅₀: 29 mg/l/24 h (calculated on the pure substance).

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 3316 CHEMIE-TESTSATZ, 9, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3316 CHEMICAL KIT, 9, II

Ems F-A S-P

Air CAO, PAX

CHEMICAL KIT, 9, UN 3316, II

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.
THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol:	F T	Highly flammable Toxic
R-phrases:	23/24/25-35-39/23/24/25	Toxic by inhalation, in contact with skin and if swallowed. Causes severe burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
S-phrases:	26-36/37/39-45	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
contains:	methanol Sulphuric acid	

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German regulations

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

Storage class VCI 3 A

Data sheet of the Chemical Professional Association M051 Dangerous chemical substances

M017 Solvents

M004 Irritant substances/corrosive substances

Local regulations on chemical accidents: 2

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

The employment restrictions for expectant and nursing mothers in accordance with sections 4 and 5 of the Maternity Protection Guideline (MuSchRiV) are to be observed.

16. Other information

Text of any R phrases referred to under heading 2:

10 Flammable.
11 Highly flammable.
23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
35 Causes severe burns.
36 Irritating to eyes.
39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Reduced labelling on the container due to small quantity.

Reason for alteration

Chapter 8: personal protective equipment.

Chapter 10: stability and reactivity.

Chapter 14: transport information.

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.

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

2. Composition/information on ingredients

CAS-No.: 7732-18-5
M: 18.02 g/mol
Formula Hill: H₂O
EC-No.: 231-791-2

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.

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7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed in a well-ventilated place, away from sources of ignition and heat. At +15°C to +25°C.

Accessible only for authorized persons.

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

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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

11. Toxicological information

Acute toxicity

No toxic effects are to be expected when the product is handled appropriately.

12. Ecological information

not required

13. Disposal considerations

Product:

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Packaging:

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14. Transport information

Road & Rail ADR, RID

UN 3316 CHEMIE-TESTSATZ, 9, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 3316 CHEMICAL KIT, 9, II

Ems F-A S-P

Air CAO, PAX

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15. Regulatory information

Labelling according to EC Directives

Symbol: ---

R-phrases: ---

S-phrases: ---

German regulations

Storage class VCI 10-13

16. Other information

Reason for alteration

Chapter 14: transport information.

General update.

Contact for information:

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