

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Date of issue: 20.09.2011

Version 1.0

### SECTION 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Catalogue No.	112080
Product name	Sulfuric acid 98% for analysis EMSURE®
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis, Chemical production For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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#### 1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	Head of Operations * (03) 9728 7600 * Monday through Friday, 8:00am to 5:00pm (EST)
Regional representation	Merck Pty. Limited ABN 25 005 064 791 207 Colchester Road Kilsyth, Vic 3137, Australia <a href="http://www.merck-chemicals.com.au">www.merck-chemicals.com.au</a>

#### 1.4 Emergency telephone number

+61 (0) 3 9728 7600  
After hours: CHEMCALL 1800 127 406  
Poisons Information Centre : 13 1126

### SECTION 2. Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1, H290  
Skin corrosion, Category 1A, H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

##### Classification (67/548/EEC or 1999/45/EC)

C Corrosive R35

For the full text of the R-phrases mentioned in this Section, see Section 16.

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## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

#### Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

#### Reduced labelling (≤125 ml)

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements


H314 Causes severe skin burns and eye damage.

#### Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Index-No. 016-020-00-8

### Labelling (67/548/EEC or 1999/45/EC)


Symbol(s)	 C	Corrosive
R-phrase(s)	35	Causes severe burns.
S-phrase(s)	26-30-45	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Never add water to this product. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
EC-No.	231-639-5	EC Label

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**Reduced labelling (≤125 ml)**

Symbol(s)  C

Corrosive

R-phrase(s) 35

Causes severe burns.

S-phrase(s) 26-45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**2.3 Other hazards**

None known.

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**SECTION 3. Composition/information on ingredients**

Formula	H <sub>2</sub> SO <sub>4</sub>	H <sub>2</sub> O <sub>4</sub> S (Hill)
CAS-No.	7664-93-9	
Index-No.	016-020-00-8	
EC-No.	231-639-5	
Molar mass	98,08 g/mol	

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**SECTION 4. First aid measures**

**4.1 Description of first aid measures**

After inhalation: fresh air. Call in physician.

After skin contact: wash off with plenty of water. Swab with polyethylene glycol 400. Immediately remove contaminated clothing. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

**4.2 Most important symptoms and effects, both acute and delayed**

Irritation and corrosion, Risk of blindness!

Risk of blindness!

**4.3 Indication of any immediate medical attention and special treatment needed**

No information available.

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**SECTION 5. Firefighting measures**

**5.1 Extinguishing media**

*Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Sulphur oxides

**5.3 Advice for firefighters**

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*Special protective equipment for firefighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system. Suppress (knock down) gases/vapours/mists with a water spray jet.

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**SECTION 6. Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**6.2 Environmental precautions**

Do not empty into drains.

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7.2 and 10.5).

Take up with liquid-absorbent and neutralising material (e.g. Chemisorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

**6.4 Reference to other sections**

Indications about waste treatment see section 13.

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**SECTION 7. Handling and storage**

**7.1 Precautions for safe handling**

Observe label precautions.

**7.2 Conditions for safe storage, including any incompatibilities**

Tightly closed.

Storage temperature: no restrictions.

**7.3 Specific end uses**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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**SECTION 8. Exposure controls/personal protection**

**8.1 Control parameters**

*sulphuric acid (7664-93-9)*

AU OEL	Short Term Exposure Limit (STEL):	3 mg/m <sup>3</sup>
	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>

**8.2 Exposure controls**

**Engineering measures**

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Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

**Individual protection measures**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

*Hygiene measures*

Change contaminated clothing and immerse in water. Preventive skin protection Wash hands and face after working with substance.

*Eye/face protection*

Tightly fitting safety goggles

*Hand protection*

full contact:

Glove material:	Viton (R)
Glove thickness:	0,7 mm
Break through time:	> 480 min

splash contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 890 Vitoject® (full contact), KCL 898 Butoject® (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(>,<)> supplied by us and for the designated use. 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)).

*Other protective equipment*

Acid-resistant protective clothing

*Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Environmental exposure controls**

Do not empty into drains.

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**SECTION 9. Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Form liquid

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Colour	colourless
Odour	odourless
Odour Threshold	not applicable
pH	0,3 at 49 g/l 25 °C
Melting point	-20 °C
Boiling point/boiling range	ca. 335 °C
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	ca.0,0001 hPa at 20 °C
Relative vapour density	ca.3,4
Relative density	1,84 g/cm <sup>3</sup> at 20 °C
Water solubility	at 20 °C soluble, (caution ! development of heat)
Partition coefficient: n- octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	ca.338 °C
Viscosity, dynamic	ca.24 mPa.s at 20 °C
Explosive properties	Not classified als explosive.
Oxidizing properties	Oxidising potential

## 9.2 Other data

Ignition temperature	not applicable
Bulk density	not applicable
Corrosion	May be corrosive to metals.

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

has a corrosive effect  
strong oxidising agent

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Violent reactions possible with:

Water, Alkali metals, alkali compounds, Ammonia, Aldehydes, acetonitrile, Alkaline earth metals, alkalines, Acids, alkaline earth compounds, Metals, metal alloys, Oxides of phosphorus, phosphorus, hydrides, halogen-halogen compounds, oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvent, acetylidene, Nitriles, organic nitro compounds, anilines, Peroxides, picrates, nitrides, lithium silicide, iron(III) compounds, bromates, chlorates, Amines, perchlorates, hydrogen peroxide

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

animal/vegetable tissues, Metals  
Contact with metals liberates hydrogen gas.

### 10.6 Hazardous decomposition products

in the event of fire: See chapter 5.

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### *Acute inhalation toxicity*

LC50 rat: 510 mg/m<sup>3</sup>; 2 h (refers to pure substance) (IUCLID)

#### *Skin irritation*

rabbit

Result: Causes burns.

(IUCLID)

Mixture causes severe burns.

#### *Eye irritation*

rabbit

Result: Causes burns.

(IUCLID)

Causes serious eye damage. Risk of blindness!

#### *Genotoxicity in vitro*

Ames test

Result: negative

(IUCLID)

#### *Teratogenicity*

Did not show teratogenic effects in animal experiments. (IUCLID)

#### *Specific target organ toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

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*Specific target organ toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

Based on available data the classification criteria are not met.

**11.2 Further information**

After inhalation of aerosols: damage to the affected mucous membranes. After skin contact: severe burns with formation of scabs. After eye contact: burns, corneal lesions. After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhoea. After a latency period of several weeks possibly pyloric stenosis.

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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**SECTION 12. Ecological information**

**12.1 Toxicity**

*Toxicity to fish*

LC50 *Lepomis macrochirus* (Bluegill sunfish): 16 - 29 mg/l; 96 h (External MSDS)

*Toxicity to daphnia and other aquatic invertebrates.*

EC50 *Daphnia magna* (Water flea): 29 mg/l; 24 h (External MSDS)

**12.2 Persistence and degradability**

*Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

**12.3 Bioaccumulative potential**

No information available.

**12.4 Mobility in soil**

No information available.

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**12.6 Other adverse effects**

*Additional ecological information*

Biological effects:

Forms corrosive mixtures with water even if diluted.

Harmful effect due to pH shift.

Endangers drinking-water supplies if allowed to enter soil or water.

Further information on ecology

Discharge into the environment must be avoided.



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**SECTION 13. Disposal considerations**

*Waste treatment methods*

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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**SECTION 14. Transport information**

**ADR/RID**

UN 1830 SULPHURIC ACID, 8, II  
Environmentally hazardous no

**IATA**

UN 1830 SULPHURIC ACID, 8, II  
Environmentally hazardous no

Environmentally hazardous no

**IMDG**

UN 1830 SULPHURIC ACID, 8, II  
EmS F-A S-B  
Marine pollutant no  
no

The transport regulations ADR/RID, IATA - DGR, IMDG -Code are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

**Other regulations**

Hazchem Code 2P

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**SECTION 15. Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

*National legislation*

Storage class 8 B

Standard for the Uniform S6

Scheduling of Medicines and  
Poisons - Poisons Schedule  
Number:

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out.

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**SECTION 16. Other information**

**Full text of H-Statements referred to under sections 2 and 3.**

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

**Full text of R-phrases referred to under sections 2 and 3**

R35 Causes severe burns.

**Training advice**

Provide adequate information, instruction and training for operators.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*