



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Sulfuric Acid

REACH Registration Number: 01-2119458838-20-0000

CAS No: 7664-93-9

Index No: 016-020-00-8

EC No: 231-639-5

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

Use of the substance/mixture

Battery acid

Uses advised against

There is no information available on applications that are not advised.

1.3. Details of the supplier of the safety data sheet

Company name: Robert Bosch GmbH

Automotive Aftermarket

Place: D-76227 Karlsruhe

Telephone: +49 721-942-0

Responsible Department: Responsible for the safety data sheet: sds@gbk-ingelheim.de

1.4. Emergency telephone number: +49 (0) 6132 / 84463 (GBK GmbH)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Indications of danger: C - Corrosive

R phrases:

Causes severe burns.

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazard categories:

Skin corrosion/irritation: Skin Corr. 1A

Hazard Statements:

Causes severe skin burns and eye damage.

2.2. Label elements

Hazard components for labelling

sulphuric acid ... %

Signal word: Danger

Pictograms: GHS05



Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363 Wash contaminated clothing before reuse.

**2.3. Other hazards**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

SECTION 3: Composition/information on ingredients**3.1. Substances****Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
231-639-5	sulphuric acid ... %	37 %
7664-93-9	C - Corrosive R35	
016-020-00-8	Skin Corr. 1A; H314	

Full text of R, H and EUH phrases: see section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Remove and wash contaminated clothes before re-use.

If you feel unwell, seek medical advice.

First aider: Pay attention to self-protection!

After inhalation

Remove the casualty into fresh air and keep him immobile.

Keep warm and calm injured person.

If patient is not breathing, apply artificial respiration.

In case of the person being unconscious put him/her in a stable side position.

Call a physician immediately.

Maintain an open airway.

After contact with skin

Wash off immediately with plenty of water for at least 15 minutes.

Call a physician immediately. Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds.

Remove contaminated clothing immediately, even underwear and shoes.

Wash contaminated clothing prior to re-use.

After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Consult (eye) doctor immediately.

After ingestion

Rinse out mouth and give plenty of water to drink.

Do not induce vomiting.

Never give anything by mouth to an unconscious person.

Call a physician immediately.

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

Causes severe skin burns and eye damage.

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

Treat symptoms.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Foam, carbon dioxide (CO₂), dry chemical, water-spray.

Unsuitable extinguishing media

Full water jet.



5.2. Special hazards arising from the substance or mixture

Fire may produce: sulfur oxides.

Heating will cause pressure rise with risk of bursting.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Cool containers at risk with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing.

Avoid contact with skin, eyes and clothing.

Do not breathe vapours.

Ensure adequate ventilation.

Do not touch or walk through spilt material.

Keep away noninvolved persons.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/ground water.

Do not discharge into the subsoil/soil.

Inform competent authority about release into the sewage, ground or into waters.

6.3. Methods and material for containment and cleaning up

For small quantities:

Stop leak if safe to do so.

Move container from spill area.

Dilute with water.

Take up with absorbent material.

Take up mechanically and collect in suitable container for disposal.

Waste disposal according to local regulations.

Large quantities:

Stop leak if safe to do so.

Move container from spill area.

Take up with absorbent material.

Take up mechanically and collect in suitable container for disposal.

Waste disposal according to local regulations.

The spilled material may be neutralised with: Sodium carbonate, Sodium bicarbonate, Sodium hydroxide.

6.4. Reference to other sections

Information for safe handling look up chapter 7.

Information for personal protective equipment look up chapter 8.

Information for disposal see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear protective clothing.

When using do not eat, drink or smoke.

Wash hands and skin before breaks and after work.

Avoid contact with skin, eyes and clothing.

Do not breathe vapour. Do not ingest.

Close product container immediately after each use.

Empty containers can contain product residue and can be dangerous.

Advice on protection against fire and explosion

Usual measures for fire prevention.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep only in original container.

To be kept tightly closed, in a cool and dry place.

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Protect from sun.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Advice on storage compatibility

Keep away from: alkalies.

Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Battery acid

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
7664-93-9	Sulphuric acid (mist)	-	0.05		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

8.2. Exposure controls**Appropriate engineering controls**

Ensure adequate ventilation, especially in confined areas.

Protective and hygiene measures

Wash hands before breaks and at the end of workday.

When using do not eat, drink or smoke.

Remove and wash contaminated clothes before re-use.

Avoid contact with skin, eyes and clothing.

Eye/face protection

Tightly fitting goggles (EN 166).

Provide eye bath.

Hand protection

Chemical-resistant gloves (EN 374).

Also suitable are gloves made of: Fluorocarbon rubber.

Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

Skin protection

Acid-proof protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Suitable respiratory protection apparatus: Multi-purpose filter ABEK, Self-contained respirator (breathing apparatus) (DIN EN 133).

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state: Liquid

Colour: Colourless

Odour: Odourless

pH-Value: No information available.

Changes in the physical state

Melting point: The melting point varies with the acid strength. *)

Initial boiling point and boiling range: The boiling point varies with the acid strength. **)

Flash point: Not applicable.

Evaporation rate: No information available.



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Flammability	Non-flammable.	
Lower explosion limits:	No information available.	
Vapour pressure: (at 20 °C)	0,06 hPa	***)
Vapour density:	No information available.	
Density:	approx. 1,835 g/cm ³	****)
Water solubility:	Miscible	
Solubility in other solvents	No information available.	
Partition coefficient:	Not relevant.	
Ignition temperature:	No information available.	
Auto-ignition temperature	The product is not self-igniting	
Explosive properties	Not explosive.	
Decomposition temperature:	No information available.	
Viscosity / dynamic: (at 20 °C)	22,5 (Solution, 95%) mPa·s	
Viscosity / kinematic:	No information available.	
Oxidizing properties	Non oxidizing.	

9.2. Other information

*) Literary value: 100%: 10,4 - 10,94 °C; 83%: 7,56 °C.

**) 100%: 290 °C.

***) Aqueous solution, 90%.

****) The density of sulfuric acid varies with the concentration. 93-100%: approx. 1,835 g/ml.

This substance is not expected to be surface active.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactions with metals, with evolution of hydrogen.

Extremely flammable hydrogen can form explosive mixtures with air.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactions with metals, with evolution of hydrogen.

Extremely flammable hydrogen can form explosive mixtures with air.

10.4. Conditions to avoid

No information available.

10.5. Incompatible materials

alkalies.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

Fire may produce: sulfur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.

Irritation and corrosivity

Causes severe skin burns and eye damage.

Sensitising effects

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.



Severe effects after repeated or prolonged exposure

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

This substance is not classified as hazardous to the aquatic environment.

12.2. Persistence and degradability

Sulphuric acid is a simple inorganic substance, which will not biodegrade.

The substance dissociates readily in water and is totally miscible with water.

The hydrogen ions will react with and be neutralised by (OH) to form water.

The sulphate ions are incorporated into the various mineral species present in the environment.

12.3. Bioaccumulative potential

Sulphuric acid is a strong mineral acid (pKa= 1.92) that dissociates readily in water to hydrogen ions and sulphate ions (at environmentally relevant pH) and is totally miscible with water.

The resulting hydrogen ions and sulphate ions are naturally present in water/sediment and no bioaccumulation of these ions is predicted.

12.4. Mobility in soil

Sulphuric acid is a strong mineral acid (pKa= 1.92) that dissociates readily in water to hydrogen ions and sulphate ions (at environmentally relevant pH) and is totally miscible with water.

The resulting hydrogen ions and sulphate ions are naturally present in water/sediment.

The hydrogen ions will contribute to local pH and are potentially mobile.

Sulphate ions may be incorporated into naturally occurring mineral species.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Where possible recycling is preferred to disposal.

Disposal in accordance with local regulations.

The waste code number must be agreed with the disposer / manufacturer / competent authority.

Contaminated packaging

Packaging that cannot be cleaned should be disposed of like the product.

Disposal in accordance with local regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 2796

14.2. UN proper shipping name: Sulphuric acid

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8



Classification code: C1

Limited quantity: 1 L

Transport category: 2



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Hazard No: 80

Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number: UN 2796

14.2. UN proper shipping name: Sulphuric acid

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8



Classification code: C1

Limited quantity: 1 L

Marine transport (IMDG)

14.1. UN number: UN 2796

14.2. UN proper shipping name: Sulphuric acid

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8



Limited quantity: 1 L

EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 2796

14.2. UN proper shipping name: Sulphuric acid

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8



Limited quantity Passenger: 0.5 L

IATA-packing instructions - Passenger: 851

IATA-max. quantity - Passenger: 1 L

IATA-packing instructions - Cargo: 855

IATA-max. quantity - Cargo: 30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Take the usual precautions when handling with chemicals.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

The transport takes place only in approved and appropriate packaging.

SECTION 15: Regulatory information

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

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating



15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

Changes in chapter: -

Abbreviations and acronyms

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route

RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses

ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure

IMDG = International Maritime Code for Dangerous Goods

IATA/ICAO = International Air Transport Association / International Civil Aviation Organization

MARPOL = International Convention for the Prevention of Pollution from Ships

DOT = Department of Transportation

TDG = Transport of Dangerous Goods

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

REACH = Registration, Evaluation, Authorization and Restriction of Chemicals

CAS = Chemical Abstract Service

EN = European norm

ISO = International Organization for Standardization

DIN = Deutsche Industrie Norm

PBT = Persistent Bioaccumulative and Toxic

vPvB = Very Persistent and very Bio-accumulative

LD = Lethal dose

LC = Lethal concentration

EC = Effect concentration

IC = Median immobilisation concentration or median inhibitory concentration

Relevant R phrases (number and full text)

35 Causes severe burns.

Relevant H and EUH statements (number and full text)

H314 Causes severe skin burns and eye damage.

Further Information

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge.

The delivery specifications are contained in the corresponding product sheet.

This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

(n.a. = not applicable; n.d. = not determined)