# Sulfuric acid

## 07208-2.5L



## SECTION 1. IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | Sulfuric acid |
| Number | : | 000000016361 |
| Product Use Description | : | Laboratory chemicals |
| Manufacturer or supplier's details | : | Honeywell Specialty Chemicals Seelze GmbH<br>Wunstorfer Straße 40<br>Seelze, 30926 |
| For more information call | : | 1-800-368-0050<br>+1-231-726-3171<br><br>(Monday-Friday, 9:00am-5:00pm) |
| **In case of emergency call** | : | **Medical: 1-800-498-5701 or +1-303-389-1414** |
| | : | **Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887** |
| | : | |
| | : | (24 hours/day, 7 days/week) |

## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

| | | |
|---|---|---|
| Form | : | liquid |
| Color | : | colourless |
| Odor | : | odourless |

**Classification of the substance or mixture**

| | | |
|---|---|---|
| Classification of the substance or mixture | : | Skin corrosion, Category 1A<br>Serious eye damage, Category 1 |

**GHS Label elements, including precautionary statements**

Symbol(s) :

Signal word : Danger

Hazard statements : Causes severe skin burns and eye damage.

Precautionary statements :

**Prevention:**
Keep only in original container.
Wash skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Wash contaminated clothing before reuse.

**Storage:**
Store locked up.
Store in corrosive resistant container with a resistant inner liner.

**Disposal:**
Dispose of contents/ container to an approved waste disposal plant.

**Carcinogenicity**

| | | |
|---|---|---|
| NTP: | Sulfuric Acid<br>Known carcinogen | 7664-93-9 |
| IARC: | Sulfuric Acid<br>Group 1: Carcinogenic to humans | 7664-93-9 |
| ACGIH: | Sulfuric Acid<br>A2: Suspected human carcinogen | 7664-93-9 |

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : H2SO4

Chemical nature : Mixture

| Chemical name | CAS-No. | Concentration |
|---|---|---|
| Sulfuric Acid | 7664-93-9 | >=50.00 - <=100.00 % |
| Water | 7732-18-5 | >=1.00 - <5.00 % |

## SECTION 4. FIRST AID MEASURES

Inhalation : Remove to fresh air. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present.

Call a physician immediately.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. Call a physician immediately.

Eye contact : Protect unharmed eye. Irrigate eyes for at least 15 minutes with copious quantities of water, keeping eyelids apart and away from eyeballs during irrigation. Small amounts splashed into eyes can cause irreversible tissue damage and blindness. Call a physician immediately.

Ingestion : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Drink plenty of water. If possible drink milk afterwards. Call a physician immediately.

## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Foam
Carbon dioxide (CO2)
Dry powder

Unsuitable extinguishing media : Water
Do NOT use water jet.
Contact with a relatively small quantity of water creates violent reaction generating much heat and spattering of hot acid

Specific hazards during firefighting : Reacts violently with water.
Contact with combustible material may cause fire.
In case of a spillage, the resulting acid solution may attack many metals with liberation of hydrogen which is flammable and forms explosive mixture with air
In case of fire hazardous decomposition products may be produced such as:
Sulphur oxides

| | | |
|---|---|---|
| Special protective equipment for firefighters | : | In the event of fire and/or explosion do not breathe fumes.<br>Wear self-contained breathing apparatus and protective suit.<br>No unprotected exposed skin areas. |
| Further information | : | The product itself does not burn.<br>Collect contaminated fire extinguishing water separately. This must not be discharged into drains. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions, protective equipment and emergency procedures | : | Evacuate personnel to safe areas.<br>Wear personal protective equipment. Unprotected persons must be kept away.<br>Keep people away from and upwind of spill/leak.<br>Ensure adequate ventilation.<br>Do not breathe vapours or spray mist.<br>Do not get in eyes, on skin, or on clothing.<br>Do not swallow. |
| Environmental precautions | : | Do not flush into surface water or sanitary sewer system.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : | Ventilate the area.<br>Dilute with water.<br>Neutralise with the following product(s):<br>lime<br>Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).<br>Never neutralise with the following products:<br>soda ash |

## SECTION 7. HANDLING AND STORAGE

### Handling

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|---|---|---|
| Precautions for safe handling | : | Handle with extreme care.<br>Wear personal protective equipment.<br>Use only in well-ventilated areas.<br>Use only acid resistant equipment.<br>When diluting, always add the product to water. Never add water to the product.<br>Do not breathe vapours or spray mist.<br>Do not get in eyes, on skin, or on clothing. |
| Advice on protection against fire and explosion | : | Normal measures for preventive fire protection.<br>In case of a spillage, the resulting acid solution may attack many metals with liberation of hydrogen which is flammable and forms explosive mixture with air |

### Storage

| | | |
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| Conditions for safe storage, including any incompatibilities | : | Storage rooms must be properly ventilated.<br>Keep containers tightly closed in a dry, cool and well-ventilated place.<br>Keep in an area equipped with acid resistant flooring.<br>Do not store near combustible materials.<br>Store in upright position only. |
| Further information on storage conditions | : | Keep away from direct sunlight.<br>Keep away from heat. |

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | |
|---|---|---|
| Protective measures | : | Ensure that eyewash stations and safety showers are close to the workstation location.<br>Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment. |

Do not swallow.
Do not breathe vapours or spray mist.
Do not get in eyes, on skin, or on clothing.

Engineering measures : Use with local exhaust ventilation.

Eye protection : Face-shield
Safety goggles

Hand protection : Impervious gloves
Gloves must be inspected prior to use.
Replace when worn.

Skin and body protection : Wear suitable protective equipment.
Wear as appropriate:
Hard hat with brim
Neck shroud
Gauntlets
Acid-resistant protective clothing
Rubber or plastic boots
If splashes are likely to occur, wear:
Full protective suit

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Hygiene measures : Separate rooms are required for washing, showering and changing clothes.
Contaminated work clothing should not be allowed out of the workplace.
Keep working clothes separately.
Take off all contaminated clothing immediately.
Remove and wash contaminated clothing before re-use.
Wash hands before breaks and at the end of workday.

**Exposure Guidelines**

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Sulfuric Acid | 7664-93-9 | TWA : Time weighted average | 0.2 mg/m3 | 2008 | ACGIH:US. ACGIH Threshold Limit Values |
| Further information | : | Form of exposure : Thoracic fraction. | | | |

| | | | | | |
|---|---|---|---|---|---|
| Sulfuric Acid | 7664-93-9 | REL : Recommended exposure limit (REL): | 1 mg/m3 | 2005 | NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards |

| | | | | | |
|---|---|---|---|---|---|
| Sulfuric Acid | 7664-93-9 | PEL : Permissible exposure limit | 1 mg/m3 | 02 2006 | OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) |

| | | | | | |
|---|---|---|---|---|---|
| Sulfuric Acid | 7664-93-9 | TWA : Time weighted average | 1 mg/m3 | 1989 | Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000) |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Physical state | : | liquid |
| Color | : | colourless |
| Odor | : | odourless |
| Odor threshold | : | Note: no data available |
| pH | : | Note: acidic |

| | | |
|---|---|---|
| Melting point/range | : | -14 - -10 °C |
| Boiling point/boiling range | : | ca. 310 °C at 1,013 hPa |
| Flash point | : | Note: Not applicable |
| Evaporation rate | : | Note: no data available |
| Flammability | : | Not applicable |
| Lower explosion limit | : | Note: Not applicable |
| Upper explosion limit | : | Note: Not applicable |
| Vapor pressure | : | Note: negligible |
| Vapor density | : | Note: no data available |
| Density | : | ca. 1.840 g/cm3 at 20 °C |
| Water solubility | : | Note: completely soluble |
| Partition coefficient: n-octanol/water | : | Note: no data available |
| Ignition temperature | : | Note: Not applicable |

| | | |
|---|---|---|
| Decomposition temperature | : | ca. 338 °C<br>Note: Decomposition temperature |
| Viscosity, dynamic | : | 21 mPa.s |
| Viscosity, kinematic | : | Note: no data available |
| Oxidizing properties | : | The substance or mixture is not classified as oxidizing. |
| Molecular weight | : | 98.08 g/mol |

## SECTION 10. STABILITY AND REACTIVITY

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|---|---|---|
| Chemical stability | : | Stable under recommended storage conditions. |
| Possibility of hazardous reactions | : | Hazardous polymerisation does not occur. |
| Conditions to avoid | : | Protect from atmospheric moisture and water.<br>Corrodes metals in the presence of water or moisture. |
| Incompatible materials | : | Bases<br>Reducing agents<br>Organic materials<br>Copper<br>Amines<br>Alcohols<br>Aldehydes<br>Cyanides<br>Sulphides<br>Nitriles<br>Reacts violently with water.<br>Gives off hydrogen by reaction with metals. |
| Hazardous decomposition products | : | Sulphur dioxide<br>Sulphur trioxide |

## SECTION 11. TOXICOLOGICAL INFORMATION

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|---|---|---|
| Acute oral toxicity | : | Note: Toxicity is determined by the corrosivity of the product. |
| Acute inhalation toxicity | : | Note: Toxicity is determined by the corrosivity of the product. |
| Acute dermal toxicity | : | Note: Toxicity is determined by the corrosivity of the product. |
| Skin irritation | : | Note: Extremely corrosive and destructive to tissue. |
| Eye irritation | : | Note: Extremely corrosive and destructive to tissue. |
| Sensitisation | : | Note: no data available |
| Genotoxicity in vitro | : | Note: Not classified due to data which are conclusive although insufficient for classification. |
| Carcinogenicity<br>Sulfuric Acid | : | Note: An increased risk of cancer in humans has been shown in work-place based studies. This hazard is related to exposure to the mist/vapor of the acid and not the acid solution. Please review IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Occupational Exposures to Mists and Vapours from Strong Inorganic Acids; and Other Industrial Chemicals, Vol. 54, 1992 and IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, A review of human carcinogens: Chemical Agents and Related Occupations, Vol. 100F, 2012. |

## SECTION 12. ECOLOGICAL INFORMATION

**Elimination information (persistence and degradability)**

| | | |
|---|---|---|
| Biodegradability | : | Note: The methods for determining biodegradability are not applicable to inorganic substances. |

**Further information on ecology**

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|---|---|---|
| Additional ecological information | : | Neutralisation will reduce ecotoxic effects. |

## SECTION 13. DISPOSAL CONSIDERATIONS

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|---|---|---|
| Disposal methods | : | Observe all Federal, State, and Local Environmental regulations. |

## SECTION 14. TRANSPORT INFORMATION

| | | | |
|---|---|---|---|
| **DOT** | UN/ID No. | : | UN 1830 |
| | Proper shipping name | : | SULPHURIC ACID |
| | Class | | 8 |
| | Packing group | | II |
| | Hazard Labels | | 8 |

| | | | |
|---|---|---|---|
| **IATA** | UN/ID No. | : | UN 1830 |
| | Description of the goods | : | SULPHURIC ACID |
| | Class | : | 8 |
| | Packaging group | : | II |
| | Hazard Labels | : | 8 |
| | Packing instruction (cargo aircraft) | : | 855 |
| | Packing instruction | : | 851 |

| | | | |
|---|---|---|---|
| | (passenger aircraft) | | |
| | Packing instruction (passenger aircraft) | : | Y840 |
| **IMDG** | UN/ID No. | : | UN 1830 |
| | Description of the goods | : | SULPHURIC ACID |
| | Class | : | 8 |
| | Packaging group | : | II |
| | Hazard Labels | : | 8 |
| | EmS Number | : | F-A, S-B |
| | Marine pollutant | : | no |
| | IMDG Code segregation group 1 – ACIDS, | | |

## SECTION 15. REGULATORY INFORMATION

**Inventories**

| | | |
|---|---|---|
| US. Toxic Substances Control Act | : | On TSCA Inventory |
| Australia. Industrial Chemical (Notification and Assessment) Act | : | On the inventory, or in compliance with the inventory |
| Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) | : | All components of this product are on the Canadian DSL |
| Japan. Kashin-Hou Law List | : | On the inventory, or in compliance with the inventory |
| Korea. Existing Chemicals Inventory (KECI) | : | On the inventory, or in compliance with the inventory |
| Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act | : | On the inventory, or in compliance with the inventory |
| China. Inventory of Existing | : | On the inventory, or in compliance with the inventory |

Chemical Substances

| | | |
|---|---|---|
| New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand | : | On the inventory, or in compliance with the inventory |

**National regulatory information**

| | | |
|---|---|---|
| US. EPA CERCLA Hazardous Substances (40 CFR 302) | : | The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):<br><br>Reportable quantity: 1000 lbs |
| | : | Sulfuric Acid 7664-93-9 |
| **SARA 302 Components** | : | The following components are subject to reporting levels established by SARA Title III, Section 302: |
| | : | Sulfuric Acid 7664-93-9 |
| **SARA 313 Components** | : | The following components are subject to reporting levels established by SARA Title III, Section 313: |
| | : | Sulfuric Acid 7664-93-9 |
| **SARA 311/312 Hazards** | : | Acute Health Hazard<br>Chronic Health Hazard |
| **CERCLA Reportable Quantity** | : | 1031 lbs |
| **California Prop. 65** | : | **WARNING:**This product can expose you to chemicals, listed below, known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.<br><br>Sulfuric Acid 7664-93-9 |

| | | | |
|---|---|---|---|
| **Massachusetts RTK** | : | Sulfuric Acid | 7664-93-9 |
| **New Jersey RTK** | : | Sulfuric Acid | 7664-93-9 |
| **Pennsylvania RTK** | : | Sulfuric Acid | 7664-93-9 |

## SECTION 16. OTHER INFORMATION

| | | HMIS III | NFPA |
|---|---|---|---|
| Health hazard | : | 3* | 3 |
| Flammability | : | 0 | 0 |
| Physical Hazard | : | 2 | |
| Instability | : | | 2 |
| Special hazard. | : | | W |

* - Chronic health hazard
Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

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