LIVINGSTONE INTERNATIONAL PTY LTD
100% PROUDLY AUSTRALIAN OWNED • SINCE 1984 ABN: 66 052 001 144
dlcs ISO 9001 certified
**Head Office:** Suite 1, Level 9, Building 3 Connect Corporate Centre 189 O'Riordan Street Mascot NSW 2020 AUSTRALIA
**Branches in Melbourne, Brisbane, Perth**
NEW Website: www.livingstone.com.au
**Phone:** 1300 780 078 • (02) 9313 6111 **Fax:** (02) 9313 6444 **Email:** sales@livingstone.com.au

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# SAFETY DATA SHEET

**Product Code: CSSA008-2.5L**



## SECTION 1 PRODUCT IDENTIFICATION

**Product name** SULFURIC ACID 98%

**Identified uses** Chemical for analysis and production.

## SECTION 2 HAZARD IDENTIFICATION

**Classification of the substance or mixture Classification according to WHS Regulations (Australia)**

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 according to EU Directives 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.

**Pictogram**

Corrosion

**Signal word** Danger

**Hazard statement(s)**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

**Precautionary statement(s)**
P234 Keep only in original container.
P260 Do not breathe dusts or mists.
P264 Wash hand 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): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P405 Store locked up.
P406 Store in corrosive resistant/ container with a resistant inner liner.

## SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

**Substances**

***Synonyms*** Dihydrogen sulfate, Dipping acid, Electrolyte acid, Mattling acid, Sulphuric acid.

| CAS-No. | EC-No | EC-Index-No | Formula | Molecular Weight |
|---|---|---|---|---|
| 7664-93-9 | 231-639-5 | 016-020-00-8 | $H_2SO_4$ | 98.08 g/mol |

**Hazardous ingredients according to WHS Regulations (Australia)**

| Component | Classification |
|---|---|
| ***Sulfuric acid*** | |
| CAS-No 7664-93-9<br>EC-No 231-639-5<br>EC-Index-No 016-020-00-8 | Corrosive to metals (Category 1), H290<br>Skin corrosion (Category 1A), H314 |

**Hazardous ingredients according to Directive 1999/45/EC**

| Component | Classification |
|---|---|
| ***Sulfuric acid*** | |
| CAS-No 7664-93-9<br>EC-No 231-639-5<br>EC-Index-No 016-020-00-8 | C, Corrosive, R35 |

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

## SECTION 4 FIRST AID MEASURES

**General advice** Show this safety data sheet to the doctor in attendance.

**Inhalation** Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.

**Skin contact** Remove contaminated clothing and wash affected skin with soap and water. Dab with polyethylene glycol 400. If signs of poisoning appear, treat as for inhalation. Obtain medical attention. Wash contaminated clothing before reuse.

**Eye contact** If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.

**Ingestion** After swallowing: make victim drink water (two glasses at the most), avoid vomiting, risk of perforation. Immediately call in physician. Do not attempt to neutralize.

**Most important symptoms and effects, both acute and delayed** The most important known symptoms and effects are described in section 2.2 and section 11

**Indication of any immediate medical attention and special treatment needed** Not Available

## SECTION 5 FIRE FIGHTING MEASURES

**Extinguishing media**
**Suitable extinguishing media** In adaption to materials stored in the immediate neighborhood.

| | |
|---|---|
| **Special hazards arising from the substance or mixture** | Non-combustible. Ambient fire may liberate hazardous vapors. Hydrogen may form upon contact with metals (danger of explosion). The following may develop in event of fire: Sulfur oxide. |
| **Advice for firefighters** | 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. |
| **Hazchem Code** | 2P |
| **Further information** | Contain escaping vapors with water. Prevent fire-fighting water from entering surface water or ground water. |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal precautions, protective equipment and emergency procedures** | Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak. |
| **Environmental precautions** | Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police. |
| **Methods and materials for containment and cleaning up** | Spillage : soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits. Transfer to covered drums. Dispose of promptly. |
| **Reference to other sections** | For disposal see Section 13. |

## SECTION 7 HANDLING AND STORAGE

| | |
|---|---|
| **Precautions for safe handling** | Provision of good ventilation in the working area. The floor must be acid resistant. Suitable materials: generally resistant: Glass, Enamel. At lower temperatures: Polyethylene PE, Polyvinyl chloride, Polypropylene PP. At different concentrations and range of temperatures the resistance of metals may vary greatly. Before choosing materials of construction obtain specialized information. Unsuitable materials: non-noble metals. Do not leave container open. Avoid any contact when handling the substance. |
| **Conditions for safe storage, including any incompatibilities** | Keep tightly closed at room temperature in a dry, cool and well-ventilated place. Keep out of direct sunlight and away from heat, water and incompatible materials. Requirements for containers, no metal containers. |
| **Specific end use(s)** | Apart from the uses mentioned in section 1.2 no other specific uses are stipulated. |

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Control parameters** | *Exposure limit (Safe Work Australia)*<br>TWA: 1 mg/m$^3$<br>STEL: 3 mg/m$^3$ |
| **Appropriate engineering controls** | The product should only be used in ventilation hoods and fans. |
| **Individual protection measures (Personal protective equipment, PPE)** | |
| **Eye/face protection** | Goggles giving complete protection to eyes. |
| **Skin protection** | Chemical resistant apron / corrosive protective clothing, heavy duty work shoes.<br>Handle with gloves<br>- Full contact wears gloves from viton material.<br>- Splash contact wears gloves from butyl rubber material.<br>The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it. |

| | |
|---|---|
| **Respiratory protection** | In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter P2 (EN 141 or EN 14387). |
| **Environmental exposure controls** | Prevent liquid entering sewers, basements and workpits. |

## SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

| | |
|---|---|
| **Form** | Liquid |
| **Color** | Colorless |
| **Odour** | Odorless |
| **Odour Threshold** | Not Available |
| **pH** | 0.3 at 49g/l $H_2O$ 25°C |
| **Melting point/range** | -20 °C |
| **Boiling point/range** | 330 °C |
| **Flash point** | Not Available |
| **Evaporation rate** | Not Available |
| **Flammability (solid, gas)** | Not Available |
| **Explosion limits:** | |
| *lower* | Not Available |
| *upper* | Not Available |
| **Vapor Pressure** | ~0.0001 hPa |
| **Relative Vapor Density** | ~3.4 |
| **Density** | 1.84 g/ml at 20°C |
| **Water solubility** | Soluble at 20°C (caution, development of heat) |
| **Partition coefficient (n-octanol/water)** | Not Available |
| **Auto-Ignition temperature** | Not Available |
| **Decomposition Temperature** | ca. 335 °C |
| **Viscosity** | 24 mPa.s at 20 °C |
| **Explosive properties** | Not Explosive |
| **Oxidizing properties** | Oxidizing potential |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | Unsuitable working materials: metals, metal alloys. Acts oxidizing with increasing temperature. Concentrated sulfuric acid can destroy organic substances by dehydration under charring. |
| **Chemical stability** | Stable under recommended storage conditions |

| | |
|---|---|
| **Possibility of hazardous reactions** | Risk of explosion in contact with: combustible substances, potassium, potassium hydroxide, bases, sodium, sodium hydroxide, organic substances, water, hydrogen peroxide, acetic aldehyde, benzyl alcohol (heat), bromates, carbides, chlorates, chlorosulfonic acid, cyclopentadiene, diethylamine, alkaline earth hydroxides, hydrofluoric acid, fulminates, potassium tert-butoxide, methyl ethyl ketone peroxide, sodium tetrahydroborate, sodium oxide, nitromethane, N-nitromethylamine, nitrotoluene, picrates, mercury nitride, nitric acid + organic substances, trinitrotoluene.<br><br>The substance can react dangerously with: aluminium, organic substances, reducing agents, nitric acid, acetonitrile, acrylonitrile, aminoethanol, conc. Ammonia, aniline, bromine pentafluoride, calcium hydride, p- chloronitrobenzene + sulphur trioxide (heat), chlorine trifluoride, hydrogen chloride + conc. sulphuric acid, 1,4- diazidobenzene, diethyl ether, p-dimethylaminobenzaldehyde, alkaline earth oxides, acetic acid, acetic anhydride, ethylene cyanohydrin, ethylenediamine, lithium silicide, highly flammable solvents, 4-methylpyridine, sodium carbonate, sodium thiocyanate, p-nitroacetanilide (heat), p-nitroaniline (heat), p-nitroaniline sulphate (heat), p-nitroanilinesulphonic acid (heat), m-nitrobenzenesulphonic acid, phosphorus red and white, phosphorus trioxide, propene oxide, mercury, tetramethylbenzene, 1,2,4,5- tetrazine, water + conc. acid, sugar.<br><br>The substance polymerize in contact with: 1-chloro-2,3-epoxypropane |
| **Conditions to avoid** | Strong heating |
| **Incompatible materials** | Alkali metals, alkali compounds, ammonia, alkaline earth metals, alkaline earth compounds, alkalis, acid, combustible substances, organic solvents, halogenates, permanganate.<br>Incompatible with various metals and metal alloys generates of sulfur oxide and Hydrogen gas. |
| **Hazardous decomposition products** | Has a corrosive effect incompatible with metals, animals, vegetable tissues. Sulfur oxide, Hydrogen (Hazardous decomposition products from under contact with metals, danger of explosion). |

## SECTION 11 TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Acute toxicity** | $LC_{50}$ (inhalation, rat): 510 mg/m³/ 2h (calculated on the pure substance). |
| **Acute oral toxicity** | Severe pain (risk of perforation), nausea, vomiting and diarrhora. After a latency period of several weeks possibly pyloric stenosis. |
| **Acute inhalation toxicity** | Damage to the affected mucous membranes. |
| **Skin corrosion/irritation** | Severe burns with formation of scabs. |
| **Serious eye damage/eye irritation** | Burns, corneal lesions. |
| **Respiratory or skin sensitization** | Not Available |
| **Germ cell mutagenicity** | Bacterial mutagenicity; Ames test is negative. |
| **Carcinogenicity** | Not Available |
| **Reproductive toxicity** | Not Available |
| **Teratogenicity** | No teratogenic effect in animals experiments. |
| **Specific target organ toxicity (STOT) - single exposure** | Not Available |
| **Specific target organ toxicity (STOT) - repeated exposure** | Not Available |
| **Aspiration hazard** | Not Available |
| **Further information** | The product should be handled with the care usual when dealing with chemicals. |

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## SECTION 12 ECOLOGICAL INFORMATION

**Toxicity**

| | |
|---|---|
| *Toxicity to daphnia and other aquatic invertebrates* | $EC_{50}$ Daphnia magna: 29 mg/l/24h (calculated on the pure substance) |
| **Persistence and degradability** | Not Available |
| **Bioaccumulative potential** | Not Available |
| **Mobility in soil** | Not Available |
| **Other adverse 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. Endanger drinking water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants. Do not allow to enter waters, waste water or soil. |

## SECTION 13 DISPOSAL CONSIDERATIONS

**Waste treatment methods**

| | |
|---|---|
| *Product* | There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. |
| *Contaminated packaging* | Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled. |

## SECTION 14 TRANSPORT INFORMATION

**Land Transport (ADG Code)**

| | |
|---|---|
| *UN Number* | 1830 |
| *UN proper shipping name* | SULPHURIC ACID |
| *Transport hazard class(es)* | 8 |
| *Hazchem Code* | 2P |
| *Packing group* | II |
| *Environmental hazards* | No |
| *Special precautions for user* | Yes |

**Sea transport (IMDG)**

| | |
|---|---|
| *UN Number* | 1830 |
| *UN proper shipping name* | SULPHURIC ACID |
| *Transport hazard class(es)* | 8 |
| *Packing group* | II |
| *Marine pollutant* | No |

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| | |
|---|---|
| *Special precautions for user* | Yes |
| *EmS* | F-A S-B |

**Air transport (IATA)**

| | |
|---|---|
| *UN Number* | 1830 |
| *UN proper shipping name* | SULPHURIC ACID |
| *Transport hazard class(es)* | 8 |
| *Packing group* | II |
| *Environmental hazards* | No |
| *Special precautions for user* | No |

**River transport (AND/ADNR)** (Not examined)

## SECTION 15 REGULATORY INFORMATION

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

| | |
|---|---|
| *Regulatory Information* | Listed in the Australian Inventory of Chemical Substances (AICS). |
| *Poisons Schedule* | S6 |
| **Chemical Safety Assessment** | For this product a chemical safety assessment was not carried out. |

## SECTION 16 OTHER INFORMATION

| | |
|---|---|
| **Full text of H-Statements referred to under sections 2 and 3** | H290 May be corrosive to metals.<br>H314 Causes severe skin burns and eye damage. |
| **Full text of R-phrases referred to under sections 2 and 3** | C Corrosive.<br>R35 Causes severe burns. |
| **Recommended restrictions** | Take notice of labels and safety data sheets for the working. |

# END OF SDS