



# SULPHURIC ACID 70% =< CONC. <97%

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name** Sulphuric Acid 96%

**Chemical name** Sulphuric Acid

**REACH registration no.** 01-2119458838-20-0096

**CAS no.** 7664-93-9

**EC no.** 231-639-5

**Formula** H<sub>2</sub>SO<sub>4</sub>

**Identified uses** Industrial Chemical: Reagent, pH regulation, Ion exchange resins regeneration, Pickling/Etching, Washing and Cleaning, and in Batteries, Gas scrubbing/cleaning, Laboratory chemical, Fertiliser Manufacture, dehydrating agent, ore extractions/processing.

**Uses advised against** None

**Supplier**

**Company name** MICRO-BIO (IRELAND) LTD.

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## 2. HAZARDS IDENTIFICATION

**Classification CLP** Skin Corr 1A; H314

**Classification** C; R35

**Description of hazard** Causes severe burns.

**Other hazard** Reacts violently with water. May influence pH in water. In use burnable/explosive mixture of vapour/aerosols may be produced. Danger for burns.



## 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component name</u>	<u>Identification</u>	<u>Classification</u>	<u>Contents</u>
Water	CAS no.: 7732-18-5		1-7%
Sulphuric acid ..%	CAS no.: 7664-93-9 EC no.: 231-639-5	C; R35	93 – 99 %
<b>Column headings</b>	CAS no. = Chemical Abstracts Service; Contents given in %wt/wt.		



## 4. FIRST AID MEASURES

<b>General</b>	CAUTION! First aid personnel must be aware of own risk during rescue! Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. Burns must be treated by doctors. Place unconscious person on the side in the recovery position and ensure breathing can take place. If heart stops, heart compression must be carried out. In case of accidents: Call the ambulance immediately! Show the Safety Data Sheet. <b>Material is extremely corrosive and destructive to all tissue and organs. Acute respiratory tract irritant with risk of delayed pulmonary edema.</b>
<b>Inhalation</b>	Move the exposed person to fresh air at once. If respiratory problems, administer artificial respiration/oxygen. Get medical attention immediately.
<b>Skin contact</b>	Remove contaminated clothes while rinsing skin thoroughly with water. Continue to rinse for at least 15 minutes and seek medical attention. Chemical burns must be treated by a physician. Use “water gel”. Clothes must be washed before re-use.
<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately.
<b>Ingestion</b>	Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Transportation to hospital. Do not give victim anything to drink if he is unconscious. DO NOT INDUCE VOMITING!

## 5. FIRE-FIGHTING MEASURES

**Extinguishing Media:** Use extinguishing measures appropriate to local circumstances and the surrounding environment. Water spray, Foam, carbon dioxide or dry powder. Cool containers exposed to heat with water spray and remove containers if no risk is involved.

**Improper extinguishing Media:** Water-jet-can cause splashing.

**Fire and explosion Hazards:** It may develop explosive gases in case of fire. Not flammable.

**Personal protective equipment:** See section 8. In enclosed or confined spaces self-contained breathing apparatus should be worn.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Provide adequate ventilation. Stay upwind in the event of a spill. Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and aerosols and contact with skin and eyes.

**Environmental precautions:** Stop spill only if safe to do so. Do not contaminate water sources or sewer. Do not discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

**Methods for cleaning:** Absorb with inert, damp, non-combustible material (e.g. sand or vermiculite), then flush area with water. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. In case of soil contamination remove for safe appropriate disposal. Dangerous waste-dispose of properly in accordance with local regulations.

## 7. HANDLING AND STORAGE

**Handling:** Use in well ventilated areas only. Mechanical ventilation may be required. Do not eat, drink or smoke when using the product. Avoid inhalation of vapours and contact with skin and eyes. Eye wash facilities and emergency shower must be available when handling this product. Wear full protective clothing for prolonged exposure and/or high concentrations. Never pour water into acid/base. Dilute by slowly pouring the product into water while stirring. Avoid splashes.

**Storage:** Avoid storage with strong oxidizers, bases, metals, halogenated substances. Closed container. Ventilated area. Original container. Store dry and at temperature below 25 C. Avoid direct sunlight.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limit Values

Ireland: Code of Practice for the Safety Health & Welfare at Work (Chemical Agents) Regulations 2011 (SI No. 619 of 2001)

Occupational Exposure Limit Value (8-hour reference period) = 0.05 ppm

### Exposure controls

**Engineering controls:** Provide adequate ventilation-mechanical if required. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours. Provide eyewash, quick drench. Water and shower must be available.

**Respiratory protection** Wear air-supplied mask in confined areas. In case of inadequate ventilation or risk of inhalation damp/mist, suitable respiratory equipment with combination filter (type E2/P2) can be used.

**Hand protection** Impervious gloves in compliance with EN374:2003. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The following list may be used for guidance but is not exhaustive:

- Viton: thickness  $\geq$  0,7mm; breakthrough time $\geq$ 480min (full contact).
- Polyvinyl chloride- PVC: thickness  $\geq$ 0,5mm; breakthrough time $\geq$ 480min.
- Butyl rubber IIR: thickness $\geq$  0,7mm; breakthrough time $\geq$ 480min.

Dispose of contaminated gloves appropriately.

**Eye protection** Use approved (EN 166) safety goggles or face shield.

**Skin protection (other than** Wear appropriate clothing to prevent any possibility of skin contact. Wear rubber footwear.

**of the hands)** AVOID ALL SKIN AND RESPIRATORY CONTACT!

**Other information** When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet. Isolate contaminated clothing and wash before reuse. Shower after work. Eating, smoking and water fountains prohibited in immediate work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Physical and chemical properties

#### 9.1.1. General Information

- |                           |                             |
|---------------------------|-----------------------------|
| ▪ <b>Appearance</b>       | Clear Liquid                |
| ▪ <b>Colour</b>           | colourless to pale brownish |
| ▪ <b>Odour</b>            | acidic                      |
| ▪ <b>Molecular Weight</b> | 98.07 g/mol                 |

#### 9.1.2. Important health safety and environmental information

- |   |                                     |
|---|-------------------------------------|
| ▪ <b>pH</b>                                     | 0.3 (49 gpl solution)               |
| ▪ <b>pKa</b>                                    | Not applicable                      |
| ▪ <b>Melting point/freezing point</b>           | -20°C                               |
| ▪ <b>Boiling point/boiling range</b>            | ca.335°C                            |
| ▪ <b>Flash point</b>                            | not applicable                      |
| ▪ <b>Evaporation rate</b>                       | No data                             |
| ▪ <b>Flammability (solid, gas)</b>              | not applicable                      |
| ▪ <b>Flammability</b>                           | The product is not flammable        |
| ▪ <b>Explosive properties</b>                   | Not explosive                       |
| ▪ <b>Vapour pressure</b>                        | ca. 130Pa at 148.5°C/0.01Pa at 20°C |
| ▪ <b>Vapour density</b>                         | No data                             |
| ▪ <b>Relative density(20°C)</b>                 | 1.82-1.84 @20°C                     |
| ▪ <b>Bulk density</b>                           | No data                             |
| ▪ <b>Solubility(ies)</b>                        | Completely soluble in water         |
| ▪ <b>Partition coefficient: n-octanol/water</b> | not applicable                      |
| ▪ <b>Autoignition temperature</b>               | No data                             |
| ▪ <b>Decomposition temperature</b>              | ca. 338°C                           |
| ▪ <b>Viscosity</b>                              | 22.5cP @20°C                        |
| ▪ <b>Oxidizing properties</b>                   | Non oxidizer                        |

## 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

- Potential for exothermic hazard
- Corrosive to metals

### 10.2. Chemical stability

- Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

- Corrosive to metals, may release hydrogen by reaction with metals.
- Contact with water can cause violent reaction-highly exothermic.
- Keep away from strong bases
- Risk of violent reaction with oxidising agents liberating Chlorine.
- Risk of explosion.

**10.4. Conditions to avoid**

- Keep away from direct sunlight.
- Avoid thermal decomposition, do not overheat-can liberate toxic and irritating Sulfur Oxide fumes when heated..
- Exposure to moisture.
- Generation of mists or aerosols

**10.5. Materials to avoid**

- Highly reactive and capable of igniting finely divided combustible materials on contact. Extremely hazardous in contact with many materials including carbides, chlorates, fulminates, nitrates, picrates, powdered metals, and other combustible materials. Contact with hypochlorites (e.g. Chlorine bleach), sulphides or cyanides will produce toxic gases. Reacts violently with water, alkaline materials, or organic materials with evolution of heat. Corrosive to metals with possible release of Hydrogen gas.

**10.6. Hazardous decomposition products**

- Thermal decomposition may release toxic and irritating Sulfur Oxide fumes.

**11. TOXICOLOGICAL INFORMATION****11.1. Acute toxicity**11.1.1. Acute oral toxicity

- **LD50 oral: Value:** 2140 mg/kg **Test animal species:** rat. Will immediately cause corrosion of and damage to gastrointestinal tract.

11.1.2. Acute inhalation toxicity

- LC50, rat, 0.3 mg/l (mist)

11.1.3. Acute dermal toxicity

- no data available. Corrosive nature of the substance will predominate.

11.1.4. Ingestion (other route)

- Strongly corrosive. Even small amounts may cause very severe internal damage and may be fatal.

**11.2. Skin corrosion/irritation**

- Corrosive-causes severe burns and eye damage .

**11.3. Serious eye damage/eye irritation**

- Causes severe eye damage.

**11.4. Respiratory or skin sensitization**

- No data available.

**11.5. Mutagenicity**

- No data available.

**11.6. Carcinogenicity**

- Inadequate data available. The International Agency for Research on Cancer (IARC) classified "strong acid mists containing Sulphuric Acid" as a Category I carcinogen (known human carcinogen) based upon epidemiology studies demonstrating excess pharyngeal and lung cancer in chronically exposed workers.

**11.7. Toxicity for reproduction**

- No data available.

**11.8. Repeated dose toxicity**

- Prolonged or repeated overexposure to mist has been reported to cause erosion of tooth enamel.

**11.9. Specific Target Organ Toxicity (Single, Repeated exposure):** No data available.**12. ECOLOGICAL INFORMATION****12.1. Toxicity**

Large discharges may contribute to the acidification of water and may be toxic to fish and other aquatic life. Can cause severe damage to aquatic plants.

- Fishes, *Gambusia affinis* (mosquito fish), LC50, 96 h, 42mg/l.

**12.2. Persistence and degradability**

Freely dissociates in water to sulphate ion and hydrated ptions.

- Water, Soil Result: Ionization/neutralization: Conditions: pH

**12.3 Bioaccumulative potential**

- Not expected to bio-accumulate in the environment based on its physical properties.

#### 12.4 Mobility

- Miscible with water . Will not adsorb to particulate matter or surfaces and is expected to have high mobility in soil and sediments.

#### 12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB

#### 12.6 Other adverse effects

- Forms corrosive mixtures with water even when diluted. Reduces pH may endanger drinking water supplies.

### 13. DISPOSAL CONSIDERATIONS

**EWC waste code** EWC: 060101 sulphuric acid and sulphurous acid

**Product classified as hazardous waste:** Yes

**Packaging classified as hazardous waste:** Yes

**Specify the appropriate methods of Disposal:** Recover and reclaim or recycle, if practical. Absorb in vermiculite or dry sand, dispose in licensed special waste.

### 14. TRANSPORT INFORMATION

Proper Shipping Name Sulphuric acid 96 %

Product name (national) Sulphuric acid 96 %

Dangerous goods ADR **Status:** Yes

**UN no:** 1830

**Class:** 8

**Hazard no.:** 80

**Packing group:** II

Dangerous goods RID **Status :** Yes

**UN no.:** 1830

**Class:** 8

**Packaging group:** II

Dangerous goods IMDG **Status:** Yes

**UN no.:** 1830

**Class:** 8

**Packaging group:** II

**IMDG Marine pollutant:** No

**EmS:** F-A,S-B

Dangerous goods ICAO/IATA **Status:** Yes

**UN no.:** 1830

**Class:** 8

**Packaging group:** II

### 15. REGULATORY INFORMATION

#### 15.1. Applicable Laws or Regulations

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended.
- Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations, as amended.
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended.
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.
- Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste.
- Code of Practice for the Safety Health & Welfare at Work (Chemical Agents) Regulations 2011 (SI No. 619 of 2001)
- COUNCIL DIRECTIVE 96/82/EC on the control of major-accident hazards involving dangerous substances as amended.

**16 OTHER INFORMATION****16.1. Full text of H-Statements referred to under section 3**

H290	-	May be corrosive to metals.
H314	-	Causes severe skin burns and eye damage.
H318	-	Causes severe eye damage.
H330	-	Fatal if inhaled.

**16.2. Full text of R-phrases referred to under sections 2 and 3****16.2.1. Full text of R-phrases referred to under section 2**

R14	-	Reacts violently with water.
R26	-	Very Toxic by inhalation.
R35	-	Causes severe burns.
R41	-	Risk of severe eye damage.

**16.2.2. Full text of R-phrases referred to under section 3**

R14	-	Reacts violently with water.
R26	-	Very Toxic by inhalation.
R35	-	Causes severe burns.
R41	-	Risk of severe eye damage.

**Other information**

- Revised SDS (Revision 4).

Section	Revisions to Previous issue
1	Update on identifiers
3	Deletion of text errors
4	Inclusion of statement on skin/tissue corrosion
5	Deletion of text errors
8	Inclusion of OELV's from Irish Code of Practice-Chemical Agents. Update of information on hand protection.
9	Update on Physical properties
10	Reformatted to include additional information.
11	Reformatted to include additional information.
12	Reformatted to include additional information.
14	Inclusion of : not a marine pollutant under IMDG.
15	Inclusion of additional regulatory information.
16	Reformatting of Hazard and risk statements.
All	General reformatting without content change.

- Distribute new edition to clients

This SDS is only intended for the indicated country to which it is applicable. The European SDS format compliant with the applicable European legislation is not intended for use nor distribution in countries outside the European Union with the exception of Norway and Switzerland. Safety datasheets applicable in other countries/regions are available upon request. The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.