

MATERIAL SAFETY DATA SHEET

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

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

1.1. Product identifier

Sulfuric acid 96%
CAS no.: 7664-93-9
EC No.: 231-639-5
Index no.: 016-020-00-8
Registration no.: 01-2119458838-20-0059

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

Use of the sulphuric acid as an intermediate for production of inorganic and organic chemicals. Fertilizers; Use of the sulphuric acid as processing aid, as catalyst, dehydrating agent and pH adjuster;

Use of the sulphuric acid for extraction and processing of minerals and ores; Use of the sulphuric acid for surface treatment, cleaning and pickling; Use of the sulphuric acid in electrolytic processes;

Use of the sulphuric acid for gas purification and waste gas treatment; Use of the sulphuric acid for production of the sulphuric acid contained in batteries; Use of the sulphuric acid in the recycling of batteries containing the sulphuric acid; Use of the sulphuric acid in batteries;

Use of the sulphuric acid as a laboratory reagent;

Use of the sulphuric acid for cleaning, mixing, preparation and repackaging of the sulphuric acid;

Uses advised against: not specified.

1.3. Data of the supplier of the MSDS

Distributor:

TOMCHEM Sp. z o.o.
95-050 Konstaktyńów Łódzki ul.
Niesięcin 5A
tel. 42 683-11-83
tel./fax.: 42-636-43-18

E-mail address of the person responsible for the material safety data sheet: info@spin-doradztwo.pl.

1.4. Emergency phone number 112 (general emergency phone), 998 (fire department), 999 (medical emergency);

SECTION 2: Identification of hazards

2.1. Classification of the substance / mixture

Acc. to the Ordinance 1272/2008:

Skin Corr. 1A; H314

Hazard for human health

Causes severe skin burns and eye damage.

Hazards for the environment

No

Physical and chemical hazards

No

2.2. Label elements

Pictographs:



MATERIAL SAFETY DATA SHEET

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

Warnings: Hazard

Hazard statement:

H314 Causes severe skin burns and eye damage.

Precautionary statements:

P260 Do not breathe vapors of the substance

P264 Wash hands thoroughly after use

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

P301+P330+P331 - IF SWALLOWED: rinse the mouth. DO NOT induce vomits.

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

P304+P340 - IF INHALED: If breathing is difficult, take an injured person to the 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.

P301 Immediately call a POISON CENTER or doctor/physician

P363 Wash contaminated clothing before reuse.

P405 Store locked up

P501 Dispose of contents/container to a suitable waste disposal facility in accordance with national regulations

2.3. Other hazards

Appendix XIII to the Regulation REACH - Criteria of identification of persistent, bioaccumulative and toxic substances (PBT) and very persistent and very bioaccumulative substances (vPvB) - not applicable

Substances with endocrine disrupting properties (according to the criteria of Commission Delegated Regulation (EU) 2017/2100, Commission Regulation (EU) 2018/605) - not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Product identifier	Content %	Hazard class and category codes	Hazard statement codes and supplementary phrases	- Specific threshold - M coefficient - Estimated Acute Toxicity (ATE)
Sulfuric acid* CAS no. 7664-93-9 EC No.: 231-639-5 Index no.: 016-020-00-8 Registration no.: 01-2119458838-20-0059	96%	Skin Corr. 1 A	H314	Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5% ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %

Full text of H statements in section 16

*substance with a specific NDS value.

3.2. Mixtures

Not applicable.

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

SECTION 4: First aid measures**4.1. Description of first aid measures In****case of skin contact:**

Remove all soiled clothing, wash the skin with plenty of water. Apply a sterile dressing to the burned area. Do not use soap or any antacids. Consult a doctor.

Contact with eyes:

Flush eyes for several minutes (approx. 15 min.) with plenty of water, keep the eyelids wide open. Avoid heavy jets because of a risk of a damage to the cornea, contact the doctor.

If inhaled:

In case of dizziness or nausea remove a victim to a fresh air; contact a doctor is the symptoms persist. If shortness of breath occurs, administer the oxygen.

If swallowed:

Give a large amount of water to drink. Do not induce vomiting (risk of perforation), contact a doctor immediately. Never administer anything into the mouth if a victim is unconscious.

4.2. The most significant acute and delayed symptoms and effects of the exposure

Skin contact: chemical burns, hard-to-heal wounds.

Eye contact: chemical burns - risk of permanent eye damage.

Respiratory system: chemical irritation of the mucous membranes of the nose, throat and other parts of the respiratory system; due to the possibility of delayed pulmonary oedema keep the victim under medical observation for at least 48 hours.

Gastrointestinal tract chemical burns of the oral cavity, tongue, throat and other sections of the tract. Risk of perforation.

4.3. Recommendations regarding immediate doctor's aid and detailed procedure of treatment of a victim.

Decision on how to proceed is made by a doctor after assessment of the condition of the affected person.

SECTION 5: Firefighting**5.1. Extinguishing media**

Suitable extinguishing media: dry extinguishing powders, carbon dioxide (snow extinguisher), foam. Apply extinguishing methods adjusted to adjacent area.

Inappropriate extinguishing media: Heavy water stream.

5.2. Special hazards arising from the substance or mixture

Sulphuric acid is non-flammable. Oxidizing agent. May promote burning. In the event of fire, under the influence of high temperatures certain toxic decomposition products are released, including sulfur oxides. A large amount of heat is released during contact with water.

5.3. Advice for firefighters

Containers in a fire area must be cooled down with a water spray. If this is possible remove the containers from the hazard zone. In case of fire in an enclosed area use protective clothing and compressed air breathing apparatus. Do not enable penetration of the ground waters and the sewage system.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel: notify the relevant services of the accident. Remove everyone, who is not involved into the rescue operation, from the emergency liquidation area.

For persons providing aid. Assure required ventilation, apply the PPE. Do not breathe vapors.

MATERIAL SAFETY DATA SHEET

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

6.2. Environment protection measures

Prevent from spreading and penetration of the sewage system and reservoirs; inform local authorities if it is impossible to assure safety.

6.3. Methods and materials for preventing the spread of contamination and for disposal Prevent spreading and dispose of by collecting on absorbent material (ground limestone, lime, sodium carbonate); place contaminated material in appropriately labeled containers for disposal in accordance with current legislation.

6.4. References to other sections

Waste handling - see section 13 of the sheet.

Personal protective equipment - section 8 of the sheet.

SECTION 7: Handling and storage

7.1. Precautions regarding safe handling

Provide adequate ventilation. Avoid contact with eyes. Avoid contact with the skin. Avoid spilling. Avoid sources of ignition, high temp., hot areas and open flames. Avoid inhaling mists of highly concentrated acid. Work in accordance with safety and hygiene rules: do not eat or drink, do not smoke in a workplace, wash hands after use, remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including information on any incompatibilities Store in a cool, dry, well-ventilated area (general room ventilation and exhaust ventilation) in a properly labeled closed original container. The floor of warehouses suitable for storing corrosive liquids should be easily washable and acid-resistant, with internal plumbing and a separate sewage system. Avoid direct sunlights and sources of heat (temp. exceeding 150 °C). Avoid hot areas and open flames. Keep away from humidity. Store away from metals, chlorates, perchlorates, chloro and fluorinated acids, hydrochloric acid, strong alkalies and strong oxidizers.

7.3. Specific end use(s)

Uses according to section 1.2 - no additional recommendations See attached exposure scenario.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure standards for occupational hazards in accordance with Regulation of the Minister of Family, Labor and Social Policy dated 12 June 2018 on the highest permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws item 1286 as amended).

Ingredients for which exposure limits are binding:

Name and CAS number of the chemical (substance)	Maximum permissible concentration (in mg/m ³) as a function of exposure time during the work shift			Number of fibers (in cm) ³	Remarks: Notation of the substance: "skin"
	NDS	NDSch	NDSP		
Sulphuric acid - thoracic fraction [CAS: 7664-93-9]	0.05	-	-	-	-

8.2. Exposure controls

See Appendix to the Material Safety Data Sheet: exposure scenarios for identified uses.

Sulfuric acid 96%

Release date 23.09.2007
 Review: 20.01.2021
 VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

Appropriate technical control measures: it is necessary to use general ventilation in the room.

Personal protective equipment - individual protective equipment:



Eyes / face protection:

Use protective goggles or a face shield (according to standard EN 166).

Skin protection:

Hands protection:

Use chemical-resistant protective gloves made of butyl rubber, PVC or equivalent according to EN-PN 374:2005.

Material of the gloves:

Selection of adjusted gloves depends on the material but also on a brand and quality assured by a manufacturer. Resistance of the material the gloves are made from may be determined after tests. Accurate gloves destroying time must be determined by a manufacturer.

Other:

Use protective work clothing (according to EN 344) - wash regularly.

Airways protection:

Avoid inhalation of product vapors. Under the conditions of exceeding the NDS (the highest permissible concentration) of the components in the working environment, use individual respiratory protection equipment - a mask or a half-mask complete with a filter and a type B or universal vapor absorber (class 2) according to EN 141.

Thermal hazards:

Not applicable.

Environment exposure control

Do not enable spreading in the environment and penetration of the sewage and water courses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

a)	State:	Liquid (oily)
b)	Color	Colorless to pale yellow
c)	Smell	Sharp, suffocating
d)	Melting / solidification temperature (not applicable to gases)	10.4 to 10.9 °C (100% sulphuric acid) -1.11 to 3.0 °C (98% sulphuric acid) -13.89 do -10°C (96% sulphuric acid) 7.56°C (83% sulphuric acid)
e)	Preliminary boiling temperature and range of boiling temperatures:	290°C (100% sulphuric acid) 310-335°C (98% sulphuric acid) 330°C (96% sulphuric acid) 360°C (77% sulphuric acid)
f)	Flammability of materials (applies to gases, liquids, solids)	Non-flammable substance. May promote burning.
g)	Lower and upper explosive limits (not applicable to solids)	Not applicable - does not pose an explosion hazard

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

h)	Flash point <i>(not applicable to gases, aerosols and solids)</i>	No data
i)	Self-ignition temperature <i>(applies to gases and liquids only)</i>	It is not self-igniting
j)	Decomposition temperature <i>(applies only to self-reactive substances and mixtures, organic peroxides and other substances and mixtures that can decompose)</i>	Not applicable
k)	pH <i>(not applicable to gases)</i>	<1
l)	Kinematic viscosity <i>(applies to liquids only)</i>	No data
m)	Solubility	Totally soluble in water:
n)	Partition coefficient n-octanol/water (log coefficient value)	No data
o)	Vapor pressure	214Pa (65% sulphuric acid) w 20°C 6 Pa (90% sulphuric acid) w 20°C 130Pa (97% sulphuric acid) (148,5°C)
p)	Density or relative density <i>(applies to liquids and solids only)</i>	1.8144-1.8305 kg/m ³ (90-100% sulphuric acid)
q)	Relative vapor density <i>(applies to gases and liquids only)</i>	No data
r)	Particle characteristics <i>(applies to solids only)</i>	Not applicable

9.2. Other information

a)	Viscosity (dynamically)	22.5 cP (0.0025 PaS; 22.5 mPaS) 95% sulphuric acid at 20°C.
----	-------------------------	--

SECTION 10: Stability and reactivity

10.1. Reactivity

A solution of more than 60% H₂SO₄ is a strong oxidizer; it reacts with many organic compounds and attacks clothing. A large amount of heat is released during dilution.

10.2. Chemical stability

The product is stable under normal conditions of handling, storage and transport. Hygroscopic substance.

10.3. Hazardous reactions

Reactions with all alkalis and substances of an alkaline and reducing nature are particularly violent, even leading to explosion. It has a corrosive effect on many metals with release of the hydrogen. It passivates iron and aluminum. Dissolves semi-precious metals with release of the SO₂.

10.4. Conditions to be avoided

Avoid raised temp., direct sunlights, hot areas and open flames.

10.5. Incompatible materials

Reducing materials, metals, chlorates, perchlorates, chloro and fluorinated acids, hydrochloric acid, strong bases and strong oxidizers.

10.6. Hazardous products of decomposition

At high temperatures certain toxic decomposition products occur - sulfur oxides.

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

SECTION 11: Toxicological Information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

a)	Acute toxicity	On the basis of the available data the criteria of classification are not satisfied
b)	Caustic / skin irritation	It causes serious burns of the skin.
c)	Serious damage to eyes/eye irritation:	It causes serious eye damage.
d)	Skin / airways sensitizing:	On the basis of the available data the criteria of classification are not satisfied
e)	Mutagenic for reproductive cells:	On the basis of the available data the criteria of classification are not satisfied
f)	Carcinogenicity:	On the basis of the available data the criteria of classification are not satisfied
g)	Reproductive toxicity	On the basis of the available data the criteria of classification are not satisfied
h)	Specific target organ toxicity - single exposure	On the basis of the available data the criteria of classification are not satisfied
i)	Specific target organ toxicity - repeated	On the basis of the available data the criteria of classification are not satisfied
j)	Hazards arising from aspiration	On the basis of the available data the criteria of classification are not satisfied

Toxicological data:

LD50 (rat, oral) 2140mg/kg LC50 (rat, inhalation) 375mg/kg/2h NOAEC: 0.3 mg/m³

Sulphuric acid immediately dissociates into hydrogen and sulphate ions, hydrogen ions are responsible for the local effects (irritant and corrosive effects) of the sulphuric acid.

11.2. Information on other hazards**Information on exposure hazards:**

Skin contact: chemical burns, hard-to-heal wounds.

Eye contact: chemical burns - risk of permanent eye damage.

Respiratory system: chemical irritation of mucous membranes of the nose, throat and other parts of the respiratory system; due to possibility of delayed pulmonary oedema keep the victim under medical observation for at least 48 hours. Mists and acid fumes cause sore throat, coughing, shortness of breath, laryngeal oedema, bronchospasm and pulmonary oedema. Death can occur as a result of glottal spasm.

Gastrointestinal tract: chemical burns of the oral cavity, tongue, throat and other sections of the tract. Risk of perforation as well as gastrointestinal haemorrhage, shock. The lethal dose is 6-8g

Delayed direct and chronic effects of short-term and long-term exposure:

No data

Effects of interaction:

No data

**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0

*This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.***SECTION 12: Ecological information****12.1. Toxicity**

The substance is not classified as hazardous to the environment, however, lowering the pH has a very adverse effect on aquatic organisms. Do not allow the product to enter drains or ground waters, sewage system and watercourses.

EC10/LC10 or NOEC for freshwater fish: 0.025mg/L

EC50> 100 mg / L (Daphnia magna).

EC50/LC50 for freshwater invertebrates: 100mg/L

EC10/LC10 or NOEC for freshwater invertebrates: 0.15mg/L

EC10/LC10 or NOEC for freshwater algae: 100mg/L

EC10/LC10 or NOEC of aquatic microorganisms: 26000mg/L

12.2. Persistence and decomposition

Not applicable - Inorganic substance, readily dissociates in water.

12.3. Bio-accumulation

Sulphuric acid is a strong mineral acid (pKa = 1.92) that readily dissociates in water to the hydrogen and sulphate ions and is completely miscible with water. The hydrogen ions and sulphate ions formed are naturally present in the water/sediment and bio-accumulation of these ions is not expected.

12.4. Mobility in a soil

The substance dissociates in water.

12.5. Results of assessment of the PBT and the vPvB properties

It does not meet the PBT and vPvB criteria.

12.6. Endocrine disrupting properties

A substance that does not disrupt the endocrine system.

12.7. Other harmful effects

No data

SECTION 13: Wastes disposal**13.1. Methods of wastes utilization**

Sulphuric acid should be disposed of in accordance with local and state regulations. Sulphuric acid should be neutralized with 10% milk of lime used in excess. Disposal of waste should be handled by specialized companies. Store the residues in the original containers. Dispose acc. to regulations in force.

Empty, cleaned packaging should be disposed of (including recycling) in accordance with applicable regulations.

Determine waste codes at the place of production in accordance with the Ordinance of the Minister of Climate dated 2 January 2020 on the waste catalog (Journal of Laws, item 10):

Community regulations:

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

SECTION 14: Transport information**14.1. UN number or ID number**

ADR/RID/IMDG/IATA: UN 1830

**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0

This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

14.2. Correct UN transport name

ADR/RID: SULPHURIC ACID with max. 51% of the acid IMDG:

SULPHURIC ACID with more than 51% acid

IATA: Sulphuric acid with > 51% acid

14.3. Transport hazard class

ADR/RID/IMGDG/IATA: 8

Stickers:

ADR/RID/IMDG/IATA: 8

14.4. Packages group

ADR/RID/IMGDG/IATA: II

14.5. Hazards for the environment

ADR/RID/IMGDG/IATA: no.

14.6. Special precautions for users

transport always in closed containers that are upright, labeled and secured.

14.7. Sea transport in bulk according to IMO instruments

No available data.

SECTION 15: Regulatory information**15.1. Specific legal regulations regarding the safety, the health and the environment protection for a substance or a mixture.**

1. Regulation (EC) No. 1907/2006 dated 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), as amended.
2. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
3. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council dated 16 December 2008 (CLP) as amended.
4. Law dated 25 February 2011 on chemical substances and their mixtures (i.e. Journal of Laws 2019, item 1225).
5. Law dated 28 May 2020 on amendments to the Law on chemical substances and their mixtures and some other laws (Journal of Laws 2020, item 1337).
6. Law of 14 December 2012 on waste (i.e. Journal of Laws 2019, item 701). (Journal of Laws, No. 2019, item 701).
7. Law dated 13 June 2013 on package and waste management (i.e. Journal of Laws of Laws 2019, item 542).
8. Regulation of the Minister of Climate of 2 January 2020 on the waste catalog (Journal of Laws 2020, item 10).
9. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.
10. Announcement of the Speaker of the Sejm of the Republic of Poland dated 20 December 2019 on the announcement of the consolidated text of the Law on Transportation of Hazardous Goods (Journal of Laws 2020, item 154).
11. ADR Agreement 2019 - Government Statement of 18 February 2019 on the entry into force of the amendments to Annexes A and B to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), done at Geneva on 30 September 1957 (Journal Laws, item 769).
12. Ordinance of the Minister of Labor and Social Policy dated 12 June 2018 on permissible concentrations and strengths of compounds / substances harmful for health in the work environment (Journal of Laws, item 1286 as amended).
13. Ordinance of the Minister of Health dated 30 December 2004 on safety and hygiene of work related to existence of chemical agents at the work environment (i.e. (Journal of (Laws, No. 2016, item 1488).
14. Ordinance of the Minister of Health dated 9 December 2003 on substances which pose serious hazard for the environment (Journal of Laws No. 217, item 2172).

15.2. Assessment of the chemical safety

A chemical safety assessment was conducted for the substance.

MATERIAL SAFETY DATA SHEET

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

Appendix XIV to the Regulation REACH – List of substances subject of the permit procedure: not applicable

SVHC - Substance of very high concern waiting for permit: Not applicable

Appendix XVII to the Regulation REACH – Restrictions concerning production, entering into the market and application of some of hazardous substances: not applicable

Sulphuric acid is listed in Annex I to the Regulation (EU) 2019/1148 on the marketing and use of explosives precursors. Acquisition, introduction, possession or use by average users is subject to restrictions. All suspicious transactions and significant cases of loss and theft must be reported to the National Contact Point within 24 hours of recognition or discovery.

SECTION 16: Other Information

H statements:

H314 Causes severe skin burns and eye damage

H315 Causes skin irritation

H319 Causes serious eye irritation

Description of applied abbreviations, acronyms and symbols:

Skin Corr. 1B – Caustic for skin 1A.

Skin Irrit. 2 – skin irritating, cat. 2

Eye Irrit. 2- Eye irritation cat. 2

NDS - the highest permissible concentration

NDSP - the highest permissible threshold

NDSch - the highest temporary concentration

LC50 - (lethal concentration) - median lethal concentration, a statistically determined concentration of a substance, after exposure to which 50 percent of the organisms (exposed to the substance) can be expected to die during the exposure or during a specified contractual post-exposure period.

LD50 - (lethal dose) - medial lethal dose, the statistically determined size of a single dose of a substance, after administration of which 50% of exposed test organisms can be expected to die.

EC50/10 (effective concentration) – medial effective concentration, statistically calculated concentration which induces, in an environmental medium, effect for 50% (10%) of tested organisms under defined conditions.

NOEC (no observed effects concentration) – the largest concentration for which no significant growth in frequency of effects or intensification of effects take place in relation to a test sample.

NOAEC (no observed adverse effects concentration) - the highest concentration for which a dose-response relationship can be determined when there is no statistically or biologically significant increase in the frequency or severity of adverse effects of a substance in test organisms relative to a control sample.

vPvB - very persistent and very bio-accumulative substance

PBT - persistent, bioaccumulative and toxic substances

ADR – European agreement on the road transport of hazardous goods.

RID – Regulations Concerning the International Carriage of Dangerous Goods by Rail

IMDG – International Maritime Dangerous Goods Code

IATA – Regulation on the transport of dangerous goods issued by the International Air Transport Association

Changes to the previous version:

Section:	Description:
Section 2	Change of an entry in accordance with Reg. 2020/878
Section 9	Change of an entry in accordance with Reg. 2020/878
Section 11	Change of an entry in accordance with Reg. 2020/878
Section 12	Change of an entry in accordance with Reg. 2020/878
Section 14	Change of an entry in accordance with Reg. 2020/878

MATERIAL SAFETY DATA SHEET

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

Section 15	Regulatory change
------------	-------------------

Trainings:

Before commence of work with the product, an employee must take part in an obligatory OHS training since chemical agents are involved. Perform, document and familiarize employees with the results of risk assessment in the workplace with reference to the presence of chemical agents.

RESOURCES

Annex to Regulation (EU) 2020/878 dated 18 June 2020. Legal regulations referred to in section 15 of the MSDS.

Information of the Office for Chemical Substances.

Information contained in the MSDS concern exclusively the product named in the title. The data contained in the data sheet should be considered only as an aid to the safe use of the product: **Sulfuric acid 96%** Since conditions of storage and transport are beyond our control, we cannot give legal guarantees. Each time follow statutory regulations as well as regulations stipulated by potential third parties. The MSDS does not comprise an assessment of hazard at job. The product should not be used for purposes other than those laid down in the Section 1 without prior consultation with **TOMCHEM F.H.U.**

Developed at SPIN-DORADZTWO www.spin-doradztwo.pl for **TOMCHEM F.H.U.**

Sulfuric acid 96%

Release date 23.09.2007
 Review: 20.01.2021
 VERSION PL: 8.0



This MSDA is accordant with Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

EXPOSURE SCENARIO

SN1

<p>1. Title</p>	<p>Use of the sulphuric acid as;</p> <ul style="list-style-type: none"> • an intermediate in production of inorganic and organic chemicals; • for extraction and processing of minerals and ores; • for production of battery sulfuric acid; • for gas purification and waste gas treatment; • for cleaning, mixing, preparation and repackaging of the sulphuric acid; • as a processing aid, as a catalyst, dehydrating agent, pH adjuster.
<p>Application sector [SU]:</p>	<p>SU2a: Mining (excluding offshore) SU3: Industrial production: end use of chemical substances as such or preparations in industrial plants SU4: Food manufacturing SU5: Manufacture of textiles, leather and furs SU6b: Manufacture of pulp, paper and paper products SU8: Bulk production of large-tonnage chemicals (including petroleum products) SU 9: Production of high-value chemicals SU10: Preparation [mixing] of preparations and/or repackaging SU11: Manufacture of food products SU 14: Production of base metals SU23: Recycling</p>
<p>Process categories [PROC]:</p>	<p>PROC01: Use in a closed process, no likelihood of leakage or exposure PROC02: Use in a closed, continuous process with occasional, controlled exposure (e.g., sampling). PROC03: Use in a closed, repetitive manufacturing process (synthesis or blending). PROC04: Use in repetitive manufacturing and other processes (synthesis) where the probability of exposure increases PROC05: Mixing or blending in repetitive manufacturing processes for preparation of formulations and products (multistage and/or significant contact). PROC08a: Transfer of substance or preparation (loading/unloading) from/to tanks/large containers in non-designated areas. PROC08b: Transfer of substances or preparations (loading/unloading) from/to tanks/large tanks in places designated for this purpose. PROC09: Transfer of substances or preparations to</p>

MATERIAL SAFETY DATA**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

	<p>small containers (dedicated filling line, including weighing). PROC13: Treatment of products by soaking and pouring.</p>
Category of product obtained by formulation [PC].	<p>PC19: Intermediates PC20: Products such as pH adjusters, flocculants, precipitants, antacids, other unspecified uses PC40: Extraction agents PC0: Other products</p>
Category of the product [AC]	Not applicable
Environmental Release Category [ERC]:	<p>ERC02: Composing of substances in chemical preparations (mixtures). ERC04: Industrial applications of process and product auxiliaries not included in the product. ERC05: Industrial applications of processing aids in processes and products resulting in the entry of the processing aid into or remaining on the surface of the product. ERC06a: Industrial use to produce another (intermediate use). ERC06b: Industrial uses of reactive processing aids ERC07: Industrial use of substances in closed systems.</p>
Processes, tasks, activities	<p>Use of the sulfuric acid, among others, as an intermediate in the production of inorganic and organic chemicals. Use of the sulfuric acid in the mining and processing of minerals and ores. This application includes leaching, dissolution and enrichment of ores such as zinc, copper, nickel and uranium. Removal of metals from sand and clay and leaching of the titanium limonite. Use of the sulfuric acid in the manufacture of lead-acid batteries. In particular, for production of the battery's liquid electrolyte. Use of the sulfuric acid as an industrial gas purification agent. The process of using the sulfuric acid as processing aids, catalysts or dehydrating agents in the chemical process of manufacturing adhesives, explosives, acids, organic salts, dyes, pigments, bio-fuels and pharmaceuticals. Use of the sulfuric acid during mixing, repackaging, preparation and production of Oleum</p>
2. Operating conditions and risk management measures	
<p>Works take place inside and outside production facilities. Loading and unloading of rail and road tank cars with the sulfuric acid is carried out outdoors.</p>	
2.1 Control of worker exposure	
Characteristics of the substance	The product is in the form of a liquid collected in sealed containers and tanks.
Quantities used	No data

MATERIAL SAFETY DATA**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

Content of the substance in the product	93 – 99%
Annual tonnage used on site	No data
Frequency and duration of use/exposure	8 hours/day (for one work shift) 365 days/year for continuous operation These tasks rarely last full 8 hours a day, so the worst case was assumed. Employee exposure deemed insignificant due to specialized systems
Human factors unaffected by risk management	The corrosive nature of the sulfuric acid makes dermal exposure irrelevant to the risk assessment, as exposure should be prevented in all cases. Potentially exposed body parts: eyes and skin
Other operational conditions of the exposure for the environment.	Handling and unloading takes place outside. Work takes place inside and outside the facilities. These operations are performed on so-called trays. Service: good basic labor and health standards are required.
Technical measures to prevent release into the environment	Operating the substance in a closed or semi-closed system. Use of the sulfuric acid requires special equipment and highly specialized systems that do not induce a hazard.
Technical measures to prevent the spread of pollution	Waste gases can be filtered and removed; typically 99% of sulfur oxides and mist are removed. The process is monitored for sulfur oxides and acid mist.
Organizational measures	Due to the corrosive nature of the sulfuric acid, production processes are strictly controlled and limited to closed or semi-closed systems. Use of the sulfuric acid in industrial equipment involves specialized processes resistant to corrosion, high pressure and temperature.
Personal protection	Workers must be properly trained and should wear appropriate PPE and RPE during the time when limited contact with the substance may take place. Workers' protective clothing: face/eye protection, helmet, anti-acid gloves, boots and general protection. A safety shower is required near the work area in case of accidental spills. Employees involved in use, sampling and transfer of materials must be trained in scope of procedures and equipped with personal protection designed to handle the worst situation in order to minimize the exposure and risk.
2.2 Environmental exposure control	
Characteristics of the substance	Liquid functioning in closed or semi-closed systems
Quantities used	Not applicable
Frequency and duration	Includes frequencies for: daily use,

MATERIAL SAFETY DATA

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

uses/exposures	weekly, monthly, yearly
Environmental factors that do not affect risk management	No data
Other operational conditions of exposure for the environment.	Loading and unloading of rail and road tank cars with the sulfuric acid is carried out in the open air. These operations are performed on so-called trays.
Conditions and technical measures at the process level to prevent the release	Liquid waste is neutralized to a neutral pH, before sulfuric acid is removed from the wastewater and sludge at the wastewater treatment plant. The removed sulfuric acid is sent to be incinerated or into a landfill. It is not used in the agriculture.
Operational conditions and on-site control measures to reduce or limit spillage/spill, air emissions and release into the land.	Emissions into the environment are limited by designated waste treatment processes designed to reduce environmental exposure. Waste gas emissions are captured by scrubbers and then directed into the wastewater stream. This significantly reduces the potential for precipitation emissions to the soil or ground waters.
Organizational measures to limit/prevent release from the site of use	Emissions to the air are controlled and therefore indirect emissions to the soil (and groundwater) via precipitation are also minor.
Conditions and measures related to the discharge of the wastewater to their municipal treatment plant	Before entering the municipal STP or the environment the wastewater is usually treated on site, due to chemical or biological operations. Used acid solutions are neutralized up to a neutral pH. The pH neutralization process is monitored.
Conditions and measures related to external treatment or recovery of waste for disposal.	All sludge is collected and incinerated, or sent to landfills. It is not used in the agriculture. This excludes possibility of any soil contamination.
3. Estimation of exposure and relation to its source	
3.1 Human health	
An assessment of exposure of a worker to the sulfuric acid from production was conducted for processes specific to this scenario, as determined by PROC codes. The initial evaluation was carried out on the grounds of the ECETOC model. However, the ECETOC model cannot function satisfactorily for a substance whose very low vapor pressure produces mist particles rather than vapors. Therefore, use of ECETOC TRA is not suitable for generating exposure estimates for the sulfuric acid. It is recommended to use advanced REACH tools (ART)	
3.2 Environment	
Due to the rapid breakdown in water of the sulfuric acid exposure to the soil or groundwater is not expected. Emissions to the atmosphere are controlled and negligible, so indirect emissions to the soil (and groundwater) through precipitation are negligible. Any amount of the sulfuric acid in the atmosphere will be converted into hydrogen ions and sulfate ions during contact with moisture from the air.	

MATERIAL SAFETY DATA**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

SN2

1. Title	Application of the sulfuric acid <ul style="list-style-type: none"> • in the process of surface treatment, cleaning and etching; • in electrolytic processes, • in recycling of the batteries containing the sulfuric acid;
Application sector [SU]:	SU 2a: Mining (excluding offshore) SU 3: Industrial production: end use of the substance SU14: Production of base metals SU15: Manufacture of other metal products, except machinery and equipment SU16: Manufacture of computers, electronic and optical products, manufacture of the electrical equipment SU17: General production
Process categories [PROC]:	PROC01: Use in a closed process, no likelihood of leakage or exposure PROC02: Use in a closed, continuous process with occasional, controlled exposure (e.g., sampling). PROC03: Use in a closed, repetitive manufacturing process (synthesis or blending). PROC04: Use in repetitive manufacturing and other processes (synthesis) where the probability of exposure increases PROC05: Mixing or blending in repetitive manufacturing processes for preparation of formulations and products (multistage and/or significant contact). PROC08a: Transfer of substance or preparation (loading/unloading) from/to tanks/large containers in non-designated areas. PROC08b: Transfer of substances or preparations (loading/unloading) from/to tanks/large containers in dedicated areas. PROC09: Transfer of a substance or a preparation into small containers (dedicated filling line, including weighing). PROC 13: Treatment of products by soaking and pouring.
Category of product obtained by formulation [PC].	PC0: other [UCN code E10100 (Electrolytes)] PC14: Metal surface treatment products, including electroplating and electroplating products. PC15: Products for machining non-metallic surfaces PC20: Products such as pH adjusters, flocculants, precipitants, antacids, other unspecified uses
Category of the product [AC]	Not applicable
Environmental Release Category [ERC]:	ERC01: Substance production. ERC05: Industrial use of processing aids

MATERIAL SAFETY DATA**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

	in processes and products resulting in the agent entering or remaining on the surface of the product. ERC06B: Industrial application of reactive processing aids
Processes, tasks, activities	Sulfuric acid used for surface treatment of metals and as an etching agent. Sulfuric acid is used to prepare metal surfaces before electrolysis to remove dirt, stains, rust or other inorganic contaminants. Managing the sulfuric acid electrolyte (25 - 40%) in battery recycling.
2. Operating conditions and risk management measures	
Processes are highly specialized and controlled to reduce emissions and exposure to the environment. Sulfuric acid can be used several times before it is transferred to the waste management system.	
2.2 Control of worker exposure	
Work takes place inside and outside production facilities in continuous processes.	
Characteristics of the substance	Substance as such, liquid collected in sealed containers and tanks
Quantities used	No data
Content of the substance in the product	93 – 99%
Annual tonnage used on the site	No data
Frequency and duration of use/exposure	8 hours/day (for one work shift) 365 days/year for continuous operation Operators work in shifts or during the normal work week and additionally on weekends.
Human factors unaffected by risk management	The corrosive nature of the sulfuric acid makes dermal exposure irrelevant to the risk assessment, as exposure should be prevented in all cases. Potentially exposed body parts: eyes and skin
Other operational conditions of exposure for the environment	Workers are in a separate room without direct contact with the installation containing the sulfuric acid. Sulfuric acid production and application services are usually placed outside. Handling: basic labor and health standards are required to be applied
Technical measures used to prevent release into the environment	Operating the substance in a closed or semi-closed system. Use of the sulfuric acid requires special equipment and highly specialized systems that do not induce a hazard.
Technical measures used to prevent the spread of pollution	Waste gases can be filtered and removed; typically 99% of sulfur oxides and acid mist are removed. The process is monitored for the content of sulfur oxides and acid fog.
Organizational measures	Due to the corrosive nature of the sulfuric acid, production processes are strictly controlled and limited to closed or semi-closed systems.
Personal protections	Employees have been properly trained and

MATERIAL SAFETY DATA

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

	<p>should wear appropriate PPE and RPE personal protection during the period when limited contact with the substance may occur.</p> <p>Workers' protective clothing: face/eye protection, helmet, anti-acid gloves, boots and general protection.</p> <p>A safety shower is required near the work area in case of accidental spills.</p> <p>Employees involved in use, sampling and transfer of materials must be trained in scope of procedures and equipped with personal protection designed to handle in case of the worst situation in order to minimize the exposure and risk.</p>	
2.2 Environmental exposure control -		
Characteristics of the substance	Liquid functioning in closed or semi-closed systems	
Quantities used	Not applicable	
Frequency and duration of use/exposure	It includes frequencies for: daily, weekly, monthly, yearly use	
Environmental factors that do not affect risk management	No data	
Other operational conditions of exposure for the environment.	Loading and unloading of rail and road tank cars with the sulfuric acid is carried out outdoors. These operations are performed on so-called trays.	
Conditions and technical measures at the process level to prevent the release	Liquid waste is neutralized to a neutral pH, before the sulfuric acid is removed from the wastewater and sludge at the wastewater treatment plant.	
Operational conditions and on-site control measures to reduce or limit spillage/spill, air emissions and release into land.	The waste gases are filtered and removed. Usually more than 99% of sulfur oxides are eliminated. The sulfuric acid can be reused and similarly, the acidic waste can be recycled back for reuse.	Waste gas emissions are captured by scrubbers and then directed into the wastewater stream. This significantly reduces possibility of precipitation emissions into the soil or surface water
Organizational measures restricting/preventing release from the application site	Waste treatment can also be used to reduce environmental exposure	
Conditions and measures related to the discharge of wastewater to their municipal treatment plant	Before entering the municipal STP or the environment the wastewater is usually treated on site, due to chemical or biological operations. Liquid wastes are neutralized to a neutral pH prior to emission. Removed sulfuric acid from the wastewater and the sludge at the wastewater treatment plant is sent for incineration or to the landfill.	
Conditions and measures related to external or recovery of waste for disposal.	All the sludge is collected (processed for metal recovery) and incinerated, or sent to landfills.	
3. Estimation of exposure and relation to its source		
3.1 Human health		

MATERIAL SAFETY DATA

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

An assessment of worker exposure to the sulfuric acid from production was conducted for processes specific to this scenario, as determined by PROC codes.
The initial evaluation was carried out on the grounds of the ECETOC model. However, the ECETOC model cannot function satisfactorily for a substance whose very low vapor pressure produces mist particles rather than vapor. Therefore, use of ECETOC TRA is not suitable for generating exposure estimates for the sulfuric acid. It is recommended to use advanced REACH tools (ART)

3.2 Environment

Due to the rapid breakdown in water of the sulfuric acid exposure to the soil or groundwater is not expected.

MATERIAL SAFETY DATA**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

SN3

1. Title	Use of the sulphuric acid as; <ul style="list-style-type: none"> • a laboratory reagent; • for industrial cleaning; • for maintenance of batteries containing sulfuric acid.
Application sector [SU]:	SU3 Industrial production: end use of chemical substances as such or preparations in plants SU22 Professional use: Public domain (administration, education, entertainment, services, crafts)
Process categories [PROC]:	<p>PROC01: Use in a closed process, no likelihood of leakage or exposure PROC02: Use in a closed, continuous process with occasional, controlled exposure (e.g., sampling). PROC03: Use in a closed, repetitive manufacturing process (synthesis or blending). PROC04: Use in repetitive manufacturing and other processes (synthesis) where the probability of exposure increases PROC05: Mixing or blending in repetitive manufacturing processes for preparation of formulations and products (multistage and/or significant contact). PROC08a: Transfer of substance or preparation (loading/unloading) from/to tanks/large containers in non-designated areas. PROC08b: Transfer of substances or preparations (loading/unloading) from/to tanks/large containers in dedicated areas. PROC09: Transfer of a substance or a preparation into small containers (dedicated filling line, including weighing). PROC10: Applying substances or preparations with a roller or brush. PROC13: Treatment of products by soaking and pouring. PROC15: Use as laboratory reagents. PROC19: Manual mixing inducing close contact when only personal protective equipment is available.</p>
Category of product obtained by formulation [PC].	PC0 Other [UCN code E10100 (electrolytes)]. PC35 Washing and cleaning agents (including those based on solvents) PC21 Laboratory chemicals
Category of the product [AC]	Not applicable
Environmental Release Category [ERC]:	ERC 08a: Widely dispersive indoor applications of processing aids in open systems. ERC 08b: Wide dispersion indoor applications of reactive substances in open systems. ERC 09b: Widely dispersive outdoor applications

MATERIAL SAFETY DATA

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

	of substances in closed systems.
Processes, tasks, activities	Maintenance of the sulfuric acid batteries, use of the sulfuric acid in the chemical laboratory, use of the sulfuric acid as a cleaning agent for industrial components. All these applications are carried out by a large number of process participants, not regularly and on a small scale.
2. Operating conditions and risk management measures	
All these processes are carried out by a large number of process participants on a not very regular basis and on a small scale.	
2.3 Control of worker exposure	
Characteristics of the substance	Substance as such, liquid collected in sealed containers and tanks
Quantities used	No data
Content of the substance in the product	No data
Annual tonnage used on site	No data
Frequency and duration of use/exposure	8 hours/day (for one work shift) The work is done sporadically in different frequencies. These tasks rarely last a full 8 hours a day, so the worst case was assumed.
Human factors unaffected by risk management	The corrosive nature of the sulfuric acid makes dermal exposure irrelevant to the risk assessment, as exposure should be prevented in all cases. Potentially exposed body parts: eyes and skin
Other operational conditions of exposure for the environment	Services are conducted by qualified technicians. Contact with the sulfuric acid is not regular and the application time is generally short. Handling: it is required to observe basic OHS standards
Technical measures used to prevent release into the environment	Operation of the substance is carried out in safety systems sufficient for emission control measures.
Technical measures used to prevent the spread of pollution	Waste emissions are directed to the STP wastewater treatment plant. Acid waste capture and controlled disposal settings generally apply. LEV will be used to control exposure and gaseous waste. Capturing of the waste from gas fume hoods and transferring into wastewater treatment facilities is required.
Organizational measures	Employees involved in processes and activities with the sulfuric acid have been trained in procedures and equipped with personal protection designed to handle the worst situation in order to minimize the exposure and risk.
Personal protections	Workers have been properly trained and should wear appropriate protection. Chemical resistant workers' protective clothing: face/eye protection, helmet, anti-acid gloves, shoes and general protective measures. A safety shower is required near a

MATERIAL SAFETY DATA

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

	work station, in case of accidental spills.
2.2 Environmental exposure control -	
Risk management measures related to environment protection from industrial plant emissions. There is no obligation to demonstrate safe use	
3. Estimation of exposure and relation to its source	
3.1 Human health	
An assessment of worker exposure to the sulfuric acid from production was conducted for processes specific to this scenario, as determined by PROC codes. The initial evaluation was carried out on the grounds of the ECETOC model. However, the ECETOC model cannot function satisfactorily for a substance whose very low vapor pressure produces mist particles rather than vapor. Therefore, use of ECETOC TRA is not suitable for generating exposure estimates for the sulfuric acid. It is recommended to use advanced REACH tools (ART)	
3.2 Environment	
Not applicable	

MATERIAL SAFETY DATA**Sulfuric acid 96%**

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

SN4

1. Title	Use of sulfuric acid in batteries.
Application sector [SU]:	No
Process categories [PROC]:	PROC does not apply because it is a consumer application. However, in case of the worst case scenario, PROC 19 was used PROC19: Hand-mixing inducing close contact when only protective measures are available.
Category of product obtained by formulation [PC].	PC0 Other [UCN code E10100 (electrolytes)]. PC35 Washing and cleaning agents (including those based on solvents) PC21 Laboratory chemicals
Category of the product [AC]	AC 3: Electric batteries and rechargeable batteries
Environmental Release Category [ERC]:	ERC09b: Widely dispersive outdoor applications, substances in closed systems.
Processes, tasks, activities	Consumer use of batteries as a sealed article. Sulfuric acid is not available for direct contact and therefore (assessment of the) exposure, and sulfuric acid emissions (is not required). These processes should be minimal.
2. Operating conditions and risk management measures	
Since batteries are sealed articles with a long life, maintenance is required rarely. Maintenance performed occasionally by consumers rather than routinely by trained workers. Consumers should wear clothing when performing maintenance activities	
2.4 Control of consumer exposure	
In this scenario, there is no worker exposure	
Characteristics of the substance	The substance itself, a liquid stored in sealed containers.
Quantities used	Not applicable, as this task is performed occasionally by the consumer.
Content of the substance in the product	No data
Annual tonnage used on the site	No data
Frequency and duration of use/exposure	Occasional. Not applicable because this task is performed occasionally by the consumer
Human factors unaffected by risk management	The corrosive nature of the sulfuric acid makes dermal exposure irrelevant to the risk assessment, as exposure should be prevented in all cases. Potentially exposed body parts: eyes and skin
Other operational conditions of exposure for the environment	Worst case Contact with the sulfuric acid is not regular and the application time is generally short.
Technical measures used to prevent release into the environment	Waste treatment can also be used to reduce the environment exposure. Risk management measures are not necessary to demonstrate safe use for the environment.
Technical measures used to prevent spreading of the pollution	Not applicable
Organizational measures	No
Personal protections	Consumers should wear protective clothing, but it is the case which determines the activity and there is no way to localize control of the processes used.

MATERIAL SAFETY DATA

Sulfuric acid 96%

Release date 23.09.2007

Review: 20.01.2021

VERSION PL: 8.0



This MSDA is accordant to Regulation EC 1907/2006 dated 18.12.2006 – REACH and 2020/878 dated 18.06.2010.

Eye wash bottle with clean water

2.2 Environmental exposure control -

Risk management measures related to environmental protection from industrial plant emissions. There is no obligation to demonstrate safe use

3. Estimation of exposure and relation to its source

3.1 Human health

An assessment of worker exposure to the sulfuric acid from production was conducted for processes specific to this scenario, as determined by PROC codes.
The initial evaluation was carried out on the grounds of the ECETOC model. However, the ECETOC model cannot function satisfactorily for a substance whose very low vapor pressure produces mist particles rather than vapor. Therefore, use of ECETOC TRA is not suitable for generating exposure estimates for the sulfuric acid. It is recommended to use advanced REACH tools (ART)

3.2 Environment

ECETOC exposure estimates are considered insufficient and are not relevant for risk characterization purposes.