

Material Safety Data Sheet
Concentrated sulfuric acid

Page 1 of 12

Date of issue: 01.07.2006r.

Revision No. / Revision date: 9 / 01.07.2022

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

1.1 Product identifier:**Name:** Sulfuric acid(VI)**Trade name:** CONCENTRATED SULFURIC ACID**IUPAC name:** Sulfuric acid**UN No.:** 1830**CAS No.:** 7664-93-9**WE No:** 231-639-5**Index number:** 016-020-00-8**REACH registration No.:** 01-2119458838-20-0041**1.2 Relevant identified uses of the substance or mixture and uses advised against**Identified uses:

- ES 1: Manufacture;
- ES 2: Formulation or re-packing;
- ES 3: Use at industrial sites; Various sectors (SU 4, SU 6b, SU 8, SU 9, SU 14);
- ES 4: Use at industrial sites; Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20); Various sectors (SU 0, SU 4, SU 5, SU 6b, SU 8, SU 9, SU 11, SU 23);
- ES 5: Use at industrial sites; Various products (PC 20, PC 40); Various sectors (SU 2a, SU 14);
- ES 6: Use at industrial sites; Various products (PC 14, PC 15); Various sectors (SU 2a, SU 14, SU 15, SU 16);
- ES 7: Use at industrial sites; Products such as ph-regulators, flocculants, precipitants, neutralization agents (PC 20); Various sectors (SU 0, SU 8);
- ES 8: Use at industrial sites; Electrolytes for batteries (PC 42); Other (SU 0);
- ES 9: Use at industrial sites; Washing and Cleaning Products (PC 35);
- ES 10: Widespread use by professional workers; Laboratory Chemicals (PC 21); Scientific research and development (SU 24);
- ES 11: Widespread use by professional workers; Washing and Cleaning Products (PC 35);
- ES 12: Service life (professional worker); Electrical batteries and accumulators (AC 3).

Uses advised against: not known**1.3 Details of the supplier of the material safety data sheet:**

KGHM Polska Miedź S.A.
"Legnica" Copper Smelter & Refinery
ul. Złotoryjska 194
59-220 Legnica

Person responsible for preparing the MSDS: (+48 76) 747 82 21,

e-mail: karty.charakterystyki@kgbm.com**Head of the Sulfuric Acid Department:** (48 76) 747 55 01; available Mon.- Fri. 7¹⁵ - 15¹⁵**Head of Customer Service Section and Finished Goods Warehouse:** (48 76) 747 28 00; available Mon.- Fri. 7¹⁵ - 15¹⁵**1.4. Emergency telephone number:**

Manufacturer (Poland): (48 76) 747 50 02 – available 24/7

Fire Department: 998 – available 24/7

Emergency medical services: 999 – available 24/7

General Emergency: 112 – available 24/7

Material Safety Data Sheet Concentrated sulfuric acid

Page 2 of 12

Date of issue: 01.07.2006r.

Revision No. / Revision date: 9 / 01.07.2022

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture:

Skin Corr. 1A; H314 - causes severe skin burns and eye damage.

2.2. Label elements:

GHS05



Signal word: DANGER

Hazard statements:

H314 - causes severe skin burns and eye damage.

Precautionary statements

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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

P405 - Store locked up.

P273 - Avoid release to the environment.

2.3 Other hazards:

Inhalation of vapours and aerosols leads to serious damage of respiratory ways. Ingestion leads to serious burning of oral cavity, gullet and stomach - may cause its perforation.

In case of release to aqueous environment, the substance causes reduction of its pH which can lead to death of fish, plants and invertebrates, due to corrosive properties hazardous for organisms and micro-organisms living in soil.

The substance does **not** meet classification criteria for PBT and vPvB.

The substance is **not** a substance identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3. Composition/information on ingredients

3.1. Substances

No.	Substance name	CAS No.	Index No.	Percentage content [mass fraction]	Hazard Class and Category Code(s)	H statements	Specific Conc. Limit, M-factor, ATE
1.	Sulfuric acid (VI)	7664-93-9	016-020-00-8	> 94	Skin Corr. 1A	314	Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5 % ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %
2.	Water	124-38-9	-	do 6	-	-	-

3.2. Mixtures

n/a

SECTION 4. First Aid measures

4.1 Description of first aid measures:

Respiratory ways: Take the victim out of the place of exposure. Provide calmness (stillness) in semi-sitting or sitting position. Physical effort may cause lungs edema. Protect against loss of body heat.

Immediate medical attention is required.

Eyes contact: Immediately rinse with a lot of cool water, running water preferably, for about 15 minutes. Avoid intensive water jet because conjunctiva may become damaged.

Immediate medical attention is required.

Skin contact: Remove clothing, clean the skin with a lot of water, running water preferably. Do not use soap or any other neutralizing agents. Apply aseptic dressing on burnt places. **Medical attention is required.**

Alimentary way: Do not induce vomiting. Drink water and do not administer anything else orally.

Immediate medical attention is required.

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

Routes of exposure: respiratory ways, alimentary way, skin, eyes.

- ingestion: pain (risk of perforation), nausea, vomiting, diarrhoea,
- skin contact: serious burns, causes necrosis of skin,
- inhalation: burning of mucosa;
- eyes contact: leads to cornea damage.

Acute intoxication symptoms:

Product in the form of mist and fumes causes pain, weeping, burns of conjunctiva, cornea, throat pains, cough, shallow breathing, accelerated breathing, breathlessness, glottis spasm, larynx edema, bronchi spasm, lungs edema. Death may occur as a result of glottis spasm. Skin contamination causes thermal (exothermic reaction with moist skin) and chemical burning. Eyes contamination causes burning of eyelids, eyeball and permanent damage. When ingested, causes burns of oral cavity, throat, gullet; may lead to perforation of gullet, stomach, bleeding of alimentary tract, shock.

Long-term exposure:

Long-term exposure to sulfuric acid may lead to chronic inflammation of conjunctivas, nose bleeding, chronic bronchi inflammation. Repeated exposure of skin may lead to ulceration, changes in nails.

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

If the victim is unconscious, make sure that the respiratory tract is not obstructed and place the victim in a recovery position. Provide medical attention.

SECTION 5. Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media:

Non-flammable substance. Apply extinguishing media proper for the surrounding materials. In case of acid leaks, use carbon dioxide and extinguishing powders.

Unsuitable extinguishing media:

Water is not recommended because it creates dense, caustic mist when in contact with released acid.

5.2 Special hazards arising from the substance or mixture:

**Material Safety Data Sheet
Concentrated sulfuric acid****Page 4 of 12****Date of issue: 01.07.2006r.****Revision No. / Revision date: 9 / 01.07.2022**

Substance in higher temperatures leads to oxidization, it dissolves semi-precious metals releasing hazardous sulfur oxides. Diluted sulfuric acid reacts with iron contained in steel releasing extremely flammable hydrogen.

5.3 Advice for fire-fighters:

Personnel participating in extinguishing a fire should wear protective, gas-tight clothes and apparatus isolating respiratory ways.

Additional information: Tanks within the range of fire should be cooled with sprayed water, do not let the water to penetrate to the tank, remove them from the area if possible.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:**6.1.1 For non-emergency personnel:**

Do not inhale mist/aerosol. In case of choosing evacuation route consider the direction of the vapour/aerosol movement.

6.1.2 For emergency responders:

Personnel participating in rescue operation should wear protective, gas-tight clothes and apparatus isolating respiratory ways. Avoid direct contact with the substance. Remove flammable materials and other chemicals from the area. Do not let the substance get in contact with other chemicals or metals.

General instructions:

Notify those in the surroundings about the breakdown. Remove all personnel not taking part in the breakdown liquidation procedure from the area of hazard.

Call fire department and police department. Contain the acid leakage from the tank and its spreading, if possible.

6.2 Environmental precautions:

Protect against direct penetration to the sewage system, ground and surface waters and soil. Protect against spreading by embanking the leakage area. Warn inhabitants if necessary

6.3 Methods and material for containment and cleaning up:

Acid collected in cavities and pits should be pumped to acid resistant tank, the remains should be neutralized with ground calcium carbonate, dolomite and collected to acid resistant tank for further utilization. The post-neutralization mass collected together with soil must be treated as hazardous waste. Neutralize the cleaned surface of soil with 10% suspension of hydrated lime. Flush the cleaned floor with a lot of water.

6.4 Reference to other sections

Personal protection equipment described in section 8.2.2

Disposal considerations in section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling:

While diluting, always add acid to water, never the other way round. Do not let the formation of aerosols at the workplace. While handling, use tight devices made of acid resistant materials. Work only in well-ventilated rooms.

**Material Safety Data Sheet
Concentrated sulfuric acid**

Page 5 of 12

Date of issue: 01.07.2006r.

Revision No. / Revision date: 9 / 01.07.2022

Wear tight, acid resistant clothing. While using, do not eat or drink, avoid contact with the substance and its solutions. While working with the substance, use eye protection. Workplace should be equipped with a shower and eyewash.

7.2 Conditions for safe storage, including any incompatibilities:

Sulfuric acid solutions should be stored in specially adapted tanks or containers. The storage tank should be vented from the highest point due to the possibility of hydrogen accumulation produced in contact with the steel sheet. The tanks should be located on the acid-resistant floor. Tanks containing sulfuric acid should be made of materials resistant to this substance, such as: steel, acid-resistant steel, high-density polyethylene. The warehouse area should have an acid-resistant floor inclined towards the drains and accessible sewage system.

7.3 Specific end use(s):

Identified uses are listed in section 1.2.

SECTION 8. Exposure control/personal protection**8.1 Control parameters:**

The following current national occupational exposure limit values apply (Poland):

No.	Substance name	TLV-TWA [mg/m ³]	TLV-STEL [mg/m ³]
1.	Sulfuric acid (VI) - thoracic fraction ⁽¹⁾	0.05	-

The following current national occupational exposure limit values apply (EU):

No.	Substance name	TLV-TWA [mg/m ³]	TLV-STEL [mg/m ³]
1.	Sulfuric acid (mist) ^{(2) (3)}	0.05	-

⁽¹⁾ Thoracic fraction - aerosol fraction which penetrates into the airways within the chest, which poses a hazard to the health after deposit in the trachea - bronchial area and gas exchange area.

⁽²⁾ When selecting an appropriate exposure monitoring method, account should be taken of potential limitations and interferences that may arise in the presence of other sulphur compounds.

⁽³⁾ The mist is defined as the thoracic fraction.

Legal basis:

Regulation of the Minister of Labour and Social Policy of June 12th, 2018 on the highest allowable concentrations and intensities of agents harmful for health in the work environment (Official Journal 14.817) – consolidated text (Official Journal 17.1348);

Derived No Effect Levels (DNELs) of sulfuric acid:

- acute exposure, when inhaled, DNEL = 0.1 mg /m³
- chronic exposure, when inhaled, DNEL = 0.05 mg /m³

Note:

The recipient is obliged to control the work environment against concentration or intensity of harmful substances within frequency and range necessary to determine exposure rate of the employees according to national legislation in force.

It is forbidden for adolescents to perform works exposing to corrosive substances.

Determination in air at the workplace:

PN-Z-04008-7:2002 – Air purity protection - Sampling - Principles of air sampling at workplace and results interpretation;

**Material Safety Data Sheet
Concentrated sulfuric acid****Page 6 of 12****Date of issue: 01.07.2006r.****Revision No. / Revision date: 9 / 01.07.2022**

PN-EN 689:2018-07 – Air at the workplace - Guidelines on evaluation of inhalation exposure to chemicals by comparing with admissible values and measurement strategy;

PN-EN 482:2012 – Air at the workplace - General requirements concerning measurement procedures.

8.2 Exposure controls:**8.2.1 Appropriate engineering controls at industrial settings:**

Tanks should be designed to ensure the minimization of loss of working medium, in the event of changes in temperature, humidity or pressure. At the inlet and outlet pipes of the excessive pressure/underpressure preventing devices valves should not be used. Elements of tanks in direct contact with the substance should be resistant to it. The design of the tank and its components should provide complete and secure emptying and cleaning, and proper venting even during a hydraulic leakage test. Filling the tank with liquid at the maximum working temperature should not exceed 97% of the tank capacity. The device for protection against excessive overpressure or underpressure should be designed to protect against leaking of substances from the tank and its penetration of foreign material (devices for protection against excessive overpressure and underpressure should be installed when the tank is not permanently connected to the atmosphere and in the tank may occur pressure increase over the maximum working pressure due to heating or chemical reaction, or an inadmissible pressure drop during filling or emptying the tank). Tanks should be equipped with devices to prevent overfilling.

Detailed requirements for storage tanks of corrosive substances are described in the Regulation of the Minister of Economy of April 16th, 2002 on technical supervision of technical conditions to be met by non-pressure and low pressure tanks used for storing poisonous or corrosive materials (Official Journal of 23 May 2002).

8.2.2 Individual protection measures, such as personal protective equipment

Eye/face protection: Required: protective goggles with face protection.

Hand protection: Required: acid resistant gloves made of nitrile, neoprene or PVC.

Skin protection: Required: acid resistant clothing and boots.

Respiratory protection: Required when vapours/aerosols are formed - gas mask (absorber of acidic vapours).

Thermal hazards: Not applicable.

Hygiene measures: Immediately change contaminated clothing. Decontaminate clothing in water. Wash your hands and face after working with the substance. Do not eat and drink during substance handling.

Additional Information:

Avoid inhalation of mists/aerosols. When concentration of the substance is established and known, selection of personal protection equipment must consider concentration present at the workplace, exposure time and operations performed by a worker as well as guidelines given by the personal protection equipment manufacturer.

In case of emergency, if the substance concentration is not known, apply personal protection equipment of the highest recommended class of protection. Protective clothing of materials coated with viton, butyl rubber hypalon; protective gloves and shoes of PVC; goggles protecting against fluid drops; filter-absorber of B-P2 class with mask or half-mask.

8.2.3. Environmental exposure controls:

**Material Safety Data Sheet
Concentrated sulfuric acid**

Page 7 of 12

Date of issue: 01.07.2006r.

Revision No. / Revision date: 9 / 01.07.2022

Avoid release to the environment. Environmental exposure should be controlled in accordance with the national environmental protection legislation.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties:

- a) *Physical state*: at temp. 20°C oily liquid;
- b) *Colour*: colourless or slightly grey, opalescent;
- c) *Odour*: perceptible, suffocating odour SO₂;
- d) *Melting point/freezing point*: depending on the acid concentration:
 - 98.5%: + 1.8 °C;
 - 97.5%: - 3.7 °C;
 - 96%: - 12.6 °C;
 - 93%: - 27 °C;
- e) *Boiling point or initial boiling point and boiling range*:
 - 98, 48%: + 326 °C ± 5 °C;
 - 100%: + 275°C ± 5°C (with decomposition);
- f) *Flammability*: n.a. inflammable product;
- g) *Lower and upper explosion limit*: n.a.;
- h) *Flash point*: n.a.;
- i) *Auto-ignition temperature*: n.a.;
- j) *Decomposition temperature*: n.a.;
- k) *pH*: strong acid, pH = 0.3 for solution of 49 g H₂SO₄/1000 ml H₂O at 25 °C;
- l) *Kinematic viscosity*: about 27 cP (20 °C);
- m) *Solubility*: in water:
 - in water: unlimited with the release of significant quantity of heat;
 - in organic solvents: soluble in ethanol with the release of significant quantity of heat.
- n) *Partition coefficient n-octanol/water (log value)*: n.a.;
- o) *Vapour pressure*:
 - at temp. 180 °C: 4.1 hPa for concentration of 95.06%
 - at temp. 326 °C: 449, 7 hPa for concentration of 98.48%;
- p) *Density and/or relative density*: at 20 °C: 1.83 g/cm³ for acid of concentration 96% to 98%;
- q) *Relative vapour density*: in relation to air: 3.4;
- r) *Particle characteristics*: n.a., the substance is a liquid.

9.2 Other information:

Heat of solution of 1 mole of acid in 199 moles of water at temp. 25 °C is: - 74.33 kJ/mole.

SECTION 10. Stability and reactivity

10.1. Reactivity:

It is corrosive. It is a chemically active compound. The product is not explosive or pyrophoric, however the reactions can be very violent and explosive. In reactions with metals, hydrogen is intensely released, which forms explosive mixtures with air.

10.2. Chemical stability:

The substance is stable under normal conditions.

10.3 Possibility of hazardous reactions:

**Material Safety Data Sheet
Concentrated sulfuric acid**

Page 8 of 12

Date of issue: 01.07.2006r.

Revision No. / Revision date: 9 / 01.07.2022

Concentrated solutions react violently with water, splashing and releasing heat and corrosive vapors. In the reaction with carbonates, carbon dioxide is produced, with cyanides and sulphides, it forms poisonous hydrogen cyanide and hydrogen sulphide, respectively). In reactions with metals, hydrogen is intensively released.

10.4 Conditions to avoid:

Heat, humidity, low temperatures. Protect against direct sunlight, keep away from heat, water and other unsuitable materials. When diluting, always add acid to water, never add water to acid.

10.5 Incompatible materials:

Water, potassium chlorate, potassium perchlorate, potassium permanganate, sodium, lithium, alkali, organic materials, halogens, metal acetylides, oxides and hydrides, metals (hydrogen is released), strong oxidizing and reducing substances and many other reactive substances.

10.6 Hazardous decomposition products:

Toxic fumes of sulfur oxides are formed when heated to decomposition. Toxic and corrosive vapors are formed in reaction with water or steam. In the reaction with carbonates, carbon dioxide is produced, with cyanides and sulphides, it forms poisonous hydrogen cyanide and hydrogen sulphide, respectively.

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 available data the criteria are not met

Lethal and toxic concentrations and doses:

LD₅₀ (orally, rat): 2140 mg/kg

LC₅₀ (rat, inhalation): 375 mg/m³

LD₅₀ (rabbit, rat, skin): no data

b) Skin corrosion/irritation:

Sulfuric acid(VI) is listed in harmonized classification and labelling of hazardous substances (table 3.1. from appendix VI of CLP) and is classified as:

Skin Corr. 1A; H314 - causes severe skin burns and eye damage.

c) Serious eye damage/ eye irritating:

on the basis of available data the classification criteria are not met.

d) Respiratory tract or skin sensitization:

on the basis of available data the classification criteria are not met.

e) Germ cell mutagenicity:

on the basis of available data the classification criteria are not met.

e) Carcinogenicity:

on the basis of available data the classification criteria are not met.

f) Reproductive toxicity:

on the basis of available data the classification criteria are not met.

g) Specific target organ toxicity — Single exposure:

on the basis of available data the classification criteria are not met.

h) Specific target organ toxicity — Repeated exposure:

on the basis of available data the classification criteria are not met.

i) Aspiration hazard:

**Material Safety Data Sheet
Concentrated sulfuric acid**

Page 9 of 12

Date of issue: 01.07.2006r.

Revision No. / Revision date: 9 / 01.07.2022

on the basis of available data the classification criteria are not met.

Other information:

Information on likely routes of exposure, on symptoms related to the product properties and the possible effects from exposure are described in section 4.2.

11.2 Information on other hazards:

None

SECTION 12. Ecological information

12.1. Toxicity:

On the basis of available data the classification criteria regarding environment hazard are not met.

Toxic concentration of sulfuric acid for aqueous animal and plant organisms:

LC₅₀/96 h fish: *Lepomis macrochirus* – 16 mg/l,

NOEC/65d fish: *Jordanella floridae* – 0.025 mg/l,

EC₅₀/48h crustaceans: *Daphnia magna* – 100 mg/l,

NOEC crustaceans: *Tanytarsus dissimilis* – 0.15 mg/l,

NOEC/72h algae: *Desmodesmus subspicatus* – 100 mg/l,

12.2. Persistence and degradability:

Persistent substance. Reacts with soil, forms sulfates or dissolves to SO₂.

12.3. Bioaccumulative potential:

Low bioaccumulative potential.

12.4. Mobility in soil:

High mobility in soil. Mobility increases with dilution. Dissolves soil components, especially carbonates, reacts with organic substances and fertilizers present in soil. Soluble in water in any amount. Released to soil may reach underground water.

12.5. Results of PBT and vPvB assessment:

Product is not classified as PBT and vPvB.

12.6. Endocrine disrupting properties:

Not applicable. The substance is **not** a substance identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects:

Not known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not dispose of to the sewage system. Do not let the substance to contamination of surface and ground waters or soil. Do not dispose of at municipal landfills. Consider re-use. Recovery or disposal carried out in accordance with applicable regulations.

Recommended method of neutralization of waste: Physical and chemical transformation. Neutralization with calcium or sodium carbonates, water suspension of hydrated lime.

SECTION 14: Transport information

14.1. UN number or ID number: 1830

14.2. UN proper shipping name: SULFURIC ACID with more than 51 percent acid;

**Material Safety Data Sheet
Concentrated sulfuric acid**

Page 10 of 12

Date of issue: 01.07.2006r.

Revision No. / Revision date: 9 / 01.07.2022

14.3. Transport hazard class(es): RID/ADR: 8;**14.4. Packing group:** RID/ADR: II;**14.5. Environmental hazards:** the substance is not classified as environmental hazardous.**14.6. Special precautions for user:** Avoid direct contact with the product. Personal protection equipment are described in section 8.8.2.

In case of leakage acid collected in cavities and pits should be pumped to acid resistant tank, the residue should be neutralized with ground calcium carbonate, dolomite and collected to acid resistant tank for further utilization. The post-neutralization mass collected together with soil must be treated as hazardous waste. Neutralize the cleaned surface of soil with 10% suspension of hydrated lime. Flush the cleaned floor with a lot of water.

14.7. Maritime transport in bulk according to IMO instruments: n/a

SECTION 15: Regulatory information

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

Sulfuric acid is included on the list of precursors of the category 3 of the regulation (EC) No. 273/2004 of the European Parliament and Council of February 11th, 2004, on narcotic precursors. Production, turnover and use of the sulfuric acid is subject to the regulations of the Minister of Economy and Labour of July 5th, 2002 on limitation, ban or conditions for production, turnover and use of hazardous substances and hazardous preparations as well as products containing such (Official Journal 04.168.1762, as amended).

Sulfuric acid is listed in Annex I to Regulation (EU) 2019/1148 of the European Parliament And Of The Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013 (Journal of Laws EU L. 2019.186.1). Sulfuric acid shall not be made available to, or introduced, possessed or used by members of the general public in accordance to the restrictions set out in Art. 5 sec. 1 and 3 of the above-mentioned Regulation.

The substance is not covered by the provisions of the Regulation EC No. 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer (Journal of Laws L 244 of 29.9.2000 as amended) and Regulation (EC) No. 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117 / EEC (OJ L 158, 30.4.2004 as amended).

The substance is not subject to the provisions of the Regulation of the European Parliament and of the Council (EC) No. 689/2008 of 17 June 2008 on the export and import of hazardous chemicals (Journal of Laws L 204 of 31.7.2008, as amended).

The substance is not included in Annex X to Decision No. 2455/2001 / EC of the European Parliament and of the Council of 20 November 2001 establishing a list of priority substances in the field of water policy and amending Directive 2000/60 / EC (Journal of Laws L 331, 15/12/2001).

Legal acts:

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, Authorisation and Restriction of Chemicals (REACH).

Act of February 25th, 2011 on chemical substances and their mixtures (Official Journal 11.63.322); Regulation (EC) No. 1907/2006 of the European Parliament and Council of December 18th, 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European

**Material Safety Data Sheet
Concentrated sulfuric acid****Page 11 of 12****Date of issue: 01.07.2006r.****Revision No. / Revision date: 9 / 01.07.2022**

Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC; Regulation of the European Parliament and Council (EC) No. 1272/2008 dated December 16th, 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006; Regulation of the European Parliament and Council (EC) No 1336/2008 of 16 December 2008 amending Regulation (EC) No 648/2004 in order to adapt it to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (Official Journal L 354 from 31.12.2008); Regulation of the Minister of Labour and Social Policy of June 6th, 2014 on the highest allowable concentrations and intensities of substances harmful for health in the work environment (Official Journal No. 817); Act of August 19th, 2011 on transportation of hazardous goods (Official Journal 227.1367); Act of December 14th, 2012, on waste (Official Journal 0.21.2013); Regulation of the Board of Ministers of August 24th, 2004, on the list of works banned for adolescents and conditions of their employing for some works (Official Journal 04.200.2047, with subsequent amendments). Regulation (EU) 2019/1148 of the European Parliament And Of The Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013 (Journal of Laws EU L. 2019.186.1).

15.2. Chemical safety assessment

Chemical safety assessment of the substance has been carried out.

SECTION 16: Other information

Explanations of abbreviations and acronyms used in the MSDS:

CAS number – means numerical identification assigned to chemical substance by the American organization named Chemical Abstract Service (CAS), enabling substance identification.

Index number – it is an identification code given in part 3 of the annex VI to the Regulation of the European Parliament and Council (EC) No. 1272/2008 dated December 16th, 2008, on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

WE number – the number assigned to chemical substance in EINECS -. European Inventory of Existing Chemical Substances, or the number assigned to chemical substance in ELINCS – European List of Notified Chemical Substances or the number in chemical substances inventory included in “No-longer polymers” document.

Registration number – number given by ECHA after substance/intermediate registration by the manufacturer/importer according to REACH Regulation.

UN number – unequivocal marking of hazardous substances and goods assigned by United Nations Central Committee to provide international recognition and use.

IUPAC name – name of a substance given by IUPAC - International Union of Pure and Applied Chemistry Committee.

NDS/TLV-TWA – the highest admissible concentration/threshold limit value – weighted average value – concentration of toxic chemical whose impact on a worker during 8-hour daily shift and average weekly time of work provided in the Labour Code during the period of his occupational activity should not cause negative changes of his health condition and of health condition of his next generations.

NDSch/TLV-STEL – the highest admissible short term concentration/short term exposure limit – weighted average of concentration of the specified, toxic chemical compound which should not cause negative changes of a worker's health if present in the work environment for not longer than

**Material Safety Data Sheet
Concentrated sulfuric acid****Page 12 of 12****Date of issue: 01.07.2006r.****Revision No. / Revision date: 9 / 01.07.2022**

15 minutes and not more often than twice per shift with occurrences separated by more than 1 hour.

LD₅₀ – lethal dose - dose of toxic substance expressed in milligrams per kilogram of body mass necessary to kill 50% of the examined population within specified time.

LC₅₀ – lethal concentration - concentration of a substance in the inhaled air, expressed in milligrams per liter, which causes death of 50% of the examined population after specified period of exposure.

NOEC – no effect concentration – the highest concentration of the substance expressed in milligrams per liter, at which no toxic effects can be observed.

EC₅₀ – effect concentration - substance concentration expressed in milligrams per liter causing the given pharmacological effect (e.g. inhibition of growth) at 50% of the examined population within specified time.

ES – exposure scenario.

Sources of information used during preparation of the MSDS:

- Own results of qualitative and quantitative analyses of sulfuric acid(VI);
- Chemical Safety Report for sulfuric acid(VI) (2010);
- ECHA: <https://echa.europa.eu/pl/information-on-chemicals/registered-substances>;
- TOXNET: <http://toxnet.nlm.nih.gov/>

Necessary training: Post-related training within the scope of safe use of a substance considering its hazardous properties for human and the environment.

Information contained in the material safety data sheet is to describe the product within the scope of safety requirements. User is responsible for taking any steps in order to meet the provisions of the national law and to create safe conditions for use of the product. User is held responsible for effects resulting from improper application of this product.

Further information can be obtained under the telephone numbers given in section 1.