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

1.1.	**Product identifier (Product registration number):**	SULPHURIC ACID CONCENTRATED **(01-2119458838-20-0082)**	**Identification no.:** P029165
1.2.	**Relevant identified uses of the substance/mixture and uses advised against:**	As an intermediate in the manufacture of inorganic and organic chemicals, including fertilizers, as a process agent, catalyst, dehydrating agent, pH regulator in processes of surface treatment, extraction, refining, etching, electrolysis, gas treatment, production and processing of batteries, such as laboratory chemicals, industrial cleaning.	

Identified uses	**Sector of Use**	**Chemical Product Category**	**Process Category**	**Article Category**	**Environmental Release Category**
Sulphuric acid. Use as intermediate in manufacture of inorganic and organic chemicals including fertilizers. (Industrial)	SU03 SU04 SU06b SU08 SU09 SU14	PC19	PROC01 PROC02 PROC03 PROC04 PROC08a PROC08b PROC09		ERC06a
Sulphuric acid. Use as processing aid. (Industrial)	SU03 SU04 SU05 SU06b SU08 SU09 SU11 SU23	PC20	PROC01 PROC02 PROC03 PROC04 PROC08a PROC08b PROC09 PROC13		ERC06b
Sulphuric acid. Use for extraction and processing of minerals and ores. (Industrial)	SU02a SU03 SU14	PC20 PC40	PROC02 PROC03 PROC04		ERC04 ERC06b
Sulphuric acid. Use for surface treatment. (Industrial)	SU02a SU03 SU14 SU15 SU16	PC14 PC15	PROC01 PROC02 PROC03 PROC04 PROC08a PROC08b PROC09 PROC13		ERC06b
Sulphuric acid. Use in electrolytic processes. (Industrial)	SU03 SU14 SU15 SU17	PC14 PC20	PROC01 PROC02 PROC08b PROC09 PROC13		ERC05 ERC06b
Sulphuric acid. Use in gas purification. (Industrial)	SU03 SU08	PC20	PROC01 PROC02 PROC08b		ERC07
Sulphuric acid. Use in production of lead acid batteries.	SU03	PC0	PROC02 PROC03 PROC04		ERC02 ERC05

(Industrial)			PROC09		
Sulphuric acid. Maintenance of lead acid batteries (Professional)	SU22	PC0	PROC19		ERC08b ERC09b
Sulphuric acid. Recycling of lead acid batteries. (Industrial)	SU03	PC0	PROC02 PROC04 PROC05 PROC08a		ERC01
Sulphuric acid. Use as laboratory chemical. (Professional)	SU22	PC21	PROC15		ERC08a ERC08b
Sulphuric acid. Use for industrial cleaning. (Industrial)	SU03	PC35	PROC02 PROC05 PROC08a PROC08b PROC09 PROC10 PROC13		ERC08b
Sulphuric acid. Use in formulation. (Industrial)	SU03 SU10		PROC01 PROC03 PROC05 PROC08a PROC08b PROC09		ERC02
Sulphuric acid. Use of lead acid batteries. (Consumer)	SU21			AC03	ERC09b

1.3.	**Details of the supplier of the safety data sheet (manufacturer, importer, only representative , downstream user or distributor):**		
1.3.1.	Supplier name:	CINKARNA CELJE, d.d.	Division:
1.3.2.	Supplier address and phone:	Kidričeva 26, 3001 CELJE, SLOVENIJA, +386 3 427 60 00	
1.3.3.	E-Mail (competent person):	mitja.gracner@cinkarna.si	
1.4.	**Emergency phone number:**	In case of health hazard, please contact your personal physician. In case of medical emergency, please contact Emergency room as soon as possible. Additional information is available during working week from 7 AM to 3 PM on the telephone number +386 (0)3 427 6087.	

2. Hazards identification

2.1.	**Classification of substance or mixture:** **(Regulation (EC) No 1272/2008**	In accordance with EU regulation Nr. *1272/2008* Corrosive to the skin, category 1A H314: Causes severe skin burns and eye damage.

2.2.	**Label elements:**	 GHS05 **DANGER** H314 Causes severe skin burns and eye damage. P260: do not breathe dust/fume/gas/mist/vapors/spray. P264: Wash … thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353: IF ON SKIN (or hair): Remove all contaminated clothing. Rinse skin with water/shower. P363: Wash contaminated clothing before reuse. P304 + P340: IF INHALED: Remove victim to fresh air and keep in a position comfortable for breathing. P310: Immediately call a POISON CENTER/ doctor P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P405: Store locked up. P501: Dispose of contents/container to … **Transport information** **ADR: 8; II.** **RID 8; II.** **Hazard identification number:** **UN number : 1830** **80 / 1830**
2.3.	**Other hazards:**	There are no other hazards

3. Composition/information on ingredients

3.1. /3.2	**Substances/ mixture: sulphuric acid, H_2SO_4** containing more than 93%, the remainder is water

Chemical name:	CAS No.	REACH Registration No.	% wt/vol/ max. conc.	Classification according to Regulation (EC) No 1272/2008 (CLP)	
				Hazard statements (H)	Hazard class and hazard category
Sulphuric acid	CAS No. 7664-93-9 EC No. 231-639-5 Index No. 016-020-00-8	**01-2119458838-20-0082**	>93%	314 See section 2.1 for the full text	Corrosive to the skin, category 1A

4. First aid measures

4.1.	**Description of first aid measures:**	
	Inhalation:	Seek medical help immediately. Take the victim to fresh air at once and place them in a position that allows easier breathing. Loosen tight clothing, such as the collar, a tie, a belt, etc. If you think that vapors are still present, the rescuer needs to use a suitable protective mask or a breathing apparatus. The injured person should not move; therefore, make sure that they are not cooling down. If they are not breathing or are breathing irregularly or if a respiratory arrest occurs, provide mouth-to-mouth or oxygen administered by trained personnel.
	Skin contact:	Seek medical assistance at once. Remove all contaminated clothing and footwear at once. Wash the skin with large quantities of cold water (shower) for a minimum of 10 minutes and seek medical assistance regardless of the symptoms. Chemical burns must be treated by a doctor.
	Eyes/mycosis contact:	Rinse thoroughly with large quantities of cold running water (10 – 15 minutes). Remove contact lenses, if the person is wearing them and if this can be done safely. The eyelids should be open, the eye should be moving in all directions. Continue rinsing for at least 15 minutes and seek medical assistance at once.
	Ingestion:	Rinse mouth, do not induce vomiting
4.2	**Most important symptoms and effects, acute and delayed:**	Damage to the respiratory tract, skin, eyes, gastrointestinal tract, burns, mental and physical disability, loss of consciousness. Aerosols or vapors strongly irritate the respiratory system, skin, and eye mucosa. The inhalation of vapors causes serious injuries of the oral cavity and respiratory tract Contact with skin causes severe burns, including deep burns which heal poorly and the wound festers Contact with eyes causes severe burns, may even cause blindness. If swallowed, serious injuries of the tongue, esophagus, and stomach. Can also cause death.
4.3.	**Indication of any immediate medical attention and special treatment needed:**	If ingested, immediately rinse mouth thoroughly and then drink plenty of water. Do not induce vomit, seek medical assistance at once.

5. Firefighting measures

5.1.	**Extinguishing media**	Sulphuric acid is non-flammable and does not burn easily
	Appropriate media:	If the product is involved in a fire, use foam and carbon dioxide (CO_2), or powder.
	Inappropriate media:	Are not known. Water, in the case of an open container, is mixed with the acid, results in a highly exothermic reaction and the evaporation of the water present. The possibility of an explosion. Water - **exothermic reaction - explosion hazard.**

5.2.	**Specific hazards arising from the substance or mixture:**	Do not spray water into open containers (**severe exothermic reaction occurs with water – explosion hazard**). Contact with metal dust can cause ignition. Acid vapors are also non-flammable. In contact with metals, when the concentration is lower than 77%, generated hydrogen can form an explosive mixture with air, particularly if the acid is stored or transported in containers which are not fully or tightly closed. When opening such containers, make sure there are no sources of fire nearby. When emptying and repairing such containers, pipelines and devices, provide good ventilation and prevent sparking. Decomposition of sulphuric acid generates water vapor and SO_3, which together form a suffocating (stifling) fog that strongly irritates the respiratory tract, as well as vapors, which are not very toxic. Concentrations ranging from 1.5 to 2.5 ppm can cause great discomfort while concentrations ranging from 10 and 20 ppm are already intolerable. Acid vapors are heavier than air. In case of a fire, the containers can be cooled with sprayed water, but only if they are tightly closed. A suitable extinguishing medium is powder.
5.3.	**Advice for firefighters:**	In the event of a fire, use water mist, foam, dry chemicals, or CO_2. Due to the heat, the pressure in the container is rising and they may burst. Products that are undergoing thermal decomposition may contain SO_2 in SO_3. In such cases, a special suit needs to be used – e.g. a personal protective suit and a breathing apparatus with a full face mask with overpressure. For short-term respiratory tract protection (30 min. maximum) with a maximum of 2% acid volume in the atmosphere and 16% oxygen volume, we can use a gas mask with chemical filter for acid vapor absorption. At higher concentrations, protect the respiratory tract with a tubular mask, or self-contained apparatus providing independent air and oxygen flow. - protective gloves - protective goggles, face shield (with a full face mask if a breathing apparatus is not being used) - protective clothing and apron, impermeable shoes or boots - All of these have to be made from acid-proof material. See Section on 8.2.2.

6. Accidental release measures

6.1.	**Personal precautions protective equipment and emergency procedures**	In the danger zone, use personal protective equipment. Organize the necessary safety zone Avoid contact with metals and combustible materials. Call the police and fire fighters. Remove unnecessary and unprotected personnel. Ensure good ventilation. Avoid inhalation of vapors and mists.
6.1.1.	For non-emergency persons:	Remove any unauthorized personnel.
6.1.2.	For emergency responders:	Mandatory use of respiratory protection, acid-resistant clothing, footwear and face shield, or goggles. See section 8.2.2.
6.2.	**Environmental precautions:**	Prevent discharge into the soil, water, or sewer. In the case of soil, water, or sewage contamination, inform the responsible person.

6.3.	**Methods and material for containment and cleaning:**	To make a barrier (dike)
6.3.1.	Appropriate spillage retaining techniques (fencing, covering drains, retaining procedures):	Containment by heaping earth, lime, or diatomaceous earth.
6.3.2.	Appropriate cleaning procedures	
	Neutralization techniques	Neutralize spilt acid with lime or slaked lime. Small quantities of acid have to be neutralized to pH = 6 – 9, and in large quantities, the formed gypsum (calcium sulfate) has to be collected and deposited in a waste disposal landfill.
	Decontamination techniques	Neutralize spilt acid with lime or slaked lime. Small quantities of acid have to be neutralized to pH = 6 – 9, and in large quantities, the formed gypsum (calcium sulfate) has to be collected and deposited in a waste disposal landfill. The spilt liquid should be collected or sucked with a non-combustible absorbent (earth, lime, or diatomaceous earth) into a container and then taken to a landfill specified in accordance with valid local regulations or by means of an authorized service for hazardous waste removal.
	Absorbent materials	Non-combustible absorbents - diatomaceous earth, sand, earth.
	Cleaning techniques	The formed gypsum (calcium sulfate) has to be collected and deposited in a waste disposal landfill.
	Sucking techniques	The procedure is possible if equipment made from suitable construction material is available.
	Required equipment for retaining /cleaning	Shovels and appropriate packaging.
6.3.3.	Inappropriate cleaning or retaining techniques	Rinsing and diluting with water and draining into the soil, surface water, or drains.
6.4.	**Reference to other sections:**	See section 8.2.2.

7. Handling and storage

7.1.	**Precautions for safe handling**	
7.1.1.	Recommendations shall be specified to:	Keep reservoirs and containers with sulphuric acid in a specially designated, cool, dry, and ventilated place and out of direct sunlight.
	Safe handling of substance or mixture:	Personnel working with sulphuric acid have to be acquainted with the dangers at work, proper handling, personal protection equipment and precautions in case of accidents (first aid and environmental protection). Safety showers and eyewash fountains have to be in the immediate vicinity of the storage area.
	Prevent handling of incompatible substances or mixtures:	**CAUTION: When diluting, <u>always pour acid in water</u>.** It is forbidden to store chlorates, chromates, nitrates and similar, including combustible materials, HCl, HNO3, leach, metal dust, etc. in the storage area.
	Reduce the release of the substance or mixture to the environment:	The storage area floor has to be made from acid-proof material. This area has to have a disposal sewer, leading to a collecting well (pit), where the spilt acid can be neutralized. Larger containers have to stand on acid-proof base so as to allow the floor to be washed with water.
7.1.2.	General working hygiene (prohibited eating, drinking and smoking within working area; washing hands …)	It is forbidden to eat, drink and smoke in work areas; washing hands is required. Dirty and contaminated clothing needs to be changed immediately. Before breaks and at the end of work, the washing of hands is required. A shower should be taken at the end of work. Food and drink must not be kept in the vicinity of acid.

7.2.	**Conditions for safe storage, including any incompatibilities**	
	Management of risk associated with:	
	- explosive atmospheres:	Smoking is not permitted in the storage area. Containers with sulphuric acid have to be closed tightly and clearly labelled. During the hot season, containers have to be periodically ventilated. CAUTION: such containers may contain the explosive gas hydrogen.
	- corrosive substances:	The storage area floor has to be made from acid-proof material. This area has to have a drainage leading to a collecting well (pit), where the spilt acid can be neutralized. Larger containers have to stand on acid-proof base so as to allow the floor to be washed with water.
	- incompatible substances or mixtures:	It is forbidden to store chlorates, chromates, nitrates and similar, including combustible materials, HCl, HNO3, leach, metal dust, etc. in the storage area.
	- evaporation substances:	Sulfuric acid is non-volatile.
	- potential ignition sources:	Smoking is forbidden in the storage area. Provide good ventilation and prevent sparking.
	How to control the effects of	
	- weather conditions:	Rain may not fall in the acid.
	- ambient pressure:	Enable pressure equalization in the tank with external pressure.
	- temperature:	The storage temperature should not be below (5˚C) - danger of freezing (sulphuric acid begins crystallizing at + 7ºC).
	- sunlight:	Keep reservoirs and containers with sulphuric acid in a specially designated cool, dry and ventilated place and out of direct sunlight. During the hot season, the containers have to be periodically ventilated. Enable pressure equalization in the tank with external pressure.
	- humidity:	Humid air should not enter into the container. Pressure equalizer must have a dry agent in order to prevent the corrosion of steel storage containers.
	- vibrations:	Not applicable.
	Securing integrity of substance or mixture by use of:	
	- stabilizers:	Is not necessary.
	- antioxidants:	Is not necessary.
	Other advice including:	
	- ventilation requirements;	Well ventilated (If the storage room is closed, it has to be well ventilated).
	- specific designs for storage rooms or vessels (including retention walls and ventilation):	The storage area floor has to be made from acid-proof material. This area has to have a disposal sewer, leading to a collecting well (pit), where the spilt acid can be neutralized. Larger containers have to stand on acid-proof base so as to allow the floor to be washed with water. Uncontrolled spills of hazardous substances (tank with double wall sensor leakage of fluid or leakage sensor in the trap bowl).
	- quantity limitations regarding storage conditions:	If specifically required.
	- packaging compatibility:	Use only the prescribed packaging for hazardous substances Class 8, packing group II. (ADR).
7.3.	**Specific end use(s):**	See section 1.2.

8. Exposure control/ personal protection

8.1.	**Control parameters**	
8.1.1.	Limit values (MV):	Sulphuric acid aerosol – concentration in air at workplace: 0.05 mg/m^3
	DNEL	0.05 mg/m^3, 0.5 mg/8 hours.
	PNEC	Entry through food is not foreseen (the substance does not accumulate in the food chain)
8.2.	**Exposure control**	
8.2.1.	Appropriate engineering controls:	See chapters 3, 5, 6, 7, 10, 11, 12 and 13. The provisions need to be constantly taken into account and the implementation monitored.
8.2.2.	Personal protective equipment:	All personal protective equipment has to be clean and in perfect condition at all times. Never use damaged equipment. Regular thorough checks are required.
	- respiratory protection:	Half mask respirator (SIST EN 140), SPF 4. Appropriate filters (SIST EN 14387, class 2) for acidic gases (yellow color - code E) In case of fire, see chapter 5.3
	- skin protection:	Acid-proof clothing, hat (SIST EN 13034) and boots SIST EN ISO 20345.
	- hand protection:	Acid-proof gloves (SIST EN ISO 374-1). Material: PVC Penetration time: 60 min Material thickness: min. 1.2 mm
	- eye/face protection:	Safety goggles, tightly fitting the face or face shield (SIST EN 166).
	- heat radiation protection:	When mixing with water, a large amount of heat is released (exothermic reaction, the liquid may splash or even an explosion may occur).
	Other:	If user operations emit mist, gases, vapors, or aerosols, the process must take place in a closed system with good ventilation to keep employee exposure below recommended limits.
8.2.3.	Environment exposure control:	See chapters 3, 5, 6, 7, 10, 11, 12 and 13. The provisions need to be constantly taken into account and the implementation monitored.

9. Physical and chemical properties

9.1.	**Information on basic physical and chemical properties:**	
	- appearance	Oily liquid
	- color	Colorless
	- odor:	Odorless
	pH:	< 1 (4.9 g/l →pH ~ 1; 4.9 x 10^{-3} mg/l →pH ~ 6)
	Melting/freezing point:	

Concentration (% H_2SO_4)	melting range (ºC)
100	from 10.4 to 10.94
98	from -1.11 to 3.0
96	from -13.89 to -10
93	from -32.0 to -29.44
83	7.56

		77 from -15 to -11.39 65 -36.78
	Boiling point and boiling range :	~ 310°C, (338°C – 98.3%)
	Flash point:	non-flammable
	Vaporization rate:	Does not evaporate (suspended).
	Flammability (solid, gas):	non-flammable (suspended).
	Upper/lower flammability or explosive limit:	non-flammable (suspended). Non-explosive; it is an inorganic acid and does not contain any chemical groups associated with explosive properties.
	Vapor pressure:	< 0.1 Pa at 20ºC.
	Vapor density:	Not applicable.
	Relative density:	From 93% H_2SO_4 to100% H_2SO_4 ~ 1835 kg/m^3 (at 20 °C).
	Solubility:	Unlimited; miscible in water.
	partition coefficient: n-octanol-water	It is not important for the ionized substances.
	Decomposition temperature:	Decomposition into SO_3 and H_2O at 450°C
	Viscosity:	Depends on the concentration (22.5 cP za 95% H_2SO_4 at 20 ºC) Dynamic: 21 mPa·s
	Explosion properties:	Non-explosive; it is an inorganic acid and does not contain any chemical groups associated with explosive properties.
	Oxidation properties:	It is not an oxidizable substance
9.2.	**Other information:**	It is not an oxidizable substance

10. Stability and reactivity

10.1.	**Reactivity:**	No specific test data related to reactivity is available for this product or its ingredients
10.2.	**Chemical stability:**	The product is stable. Under normal storage, use, and transport conditions, hazardous reactions will not occur.
10.3.	**Possible hazardous reactions:**	If involved in a fire, the substance may thermally decompose and generate hazardous and toxic gases SO_3 and SO_2, as well as H_2O.
10.4.	**Conditions to avoid:**	Never pour water into the acid (explosive exothermic reaction). Hazardous reaction when improperly mixed with water, alkalis and other acids. Contact with metals may generate hydrogen. Mixture with air may cause an explosion. See section 7.2.
10.5.	**Incompatible materials:**	Oxidizing agents, water, alkalis, organic compounds – see also 7.2
10.6.	**Hazardous decomposition products:**	Under normal storage and use conditions, hazardous decomposition products should not be produced. SO_3, SO_2 and H_2O (water vapor – aerosol).

11. Toxicological data

11.1.	**Information on toxicological effects**	

	- Acute toxicity:	Ingestion: Based on the results of the study, according to the EU criteria, it is not classified as acutely toxic if ingested. Ingestion causes severe damage to tongue, throat, and stomach. Skin: Based on the results of studies that have been executed on the skin, it is not classified as toxic to the skin because the local effect of corrosion dominates - the destruction of tissue. It causes severe burns and skin damage (sores) which do not heal well. Inhalation: Causes respiratory tract irritation and ulcers. The reason for not being classified as acutely toxic is its corrosiveness, which immediately destroys organic tissue and, in the most difficult cases, the end result is death due to the irreversible damage to organs.
	- skin corrosion/irritation:	Corrosive liquid, hazard category 1A (concentration> 15% H_2SO_4). Causes severe burns and skin damage (sores) which do not heal well (concentration> 15% H_2SO_4). Causes skin irritation, hazard category 2 (concentration from 5% H_2SO_4 to 15% H_2SO_4).
	- Serious eye damage/irritation:	Corrosive liquid, hazard category 1A (concentration> 15% H_2SO_4). Contact with eyes causes severe chemical burns, may cause permanent blindness (concentration> 15% H_2SO_4). Causes eye irritation, hazard category 2 (concentration from 5% H_2SO_4 to 15% H_2SO_4).
	- respiratory or skin sensitization:	It is not classified as a substance that would cause sensitization because positive results have not been found, even during long-term exposure.
	- germ cell mutagenicity:	It is not mutagenic (Ames test negative).
	- Carcinogenicity:	According to the results of a study on »the strong inorganic acid mist effect« including sulphuric acid, there is a risk of cancer in the human respiratory tract.
	- Toxicity for reproduction:	Tests in vitro have not been implemented due to the corrosive substance which destroy organs.
	- STOT – single exposure:	Corrosive liquid, hazard category 1A (concentration> 15% H_2SO_4).
	- STOT – repeated exposure:	Corrosive liquid, hazard category 1A (concentration> 15% H_2SO_4).
	- Inhalation hazards:	Corrosive liquid, hazard category 1A (concentration> 15% H_2SO_4). Inhaling vapors causes severe damage to the mouth and respiratory tract

12. Ecological information

12.1.	**Toxicity:**	It is not classified as toxic. Corrosive liquid, hazard category 1A (concentration> 15% H_2SO_4). Due to its corrosiveness, it is hazardous for the environment. In water, it completely dissociates into hydrogen and sulfate ions.

12.2.	**Persistence and degradability:**	It is not classified as toxic. Corrosive liquid, hazard category 1A (concentration> 15% H_2SO_4). Due to its corrosiveness, it is hazardous for the environment. In water, it completely dissociates into hydrogen and sulfate ions. Hydrogen ions diminish the pH of the local environment and can destroy living organisms. Sulphuric acid can be removed from water only through neutralization and not through biological treatment.
12.3.	**Accumulation in organisms:**	Does not bio-accumulate.
12.4.	**Mobility in soil:**	The liquid seeps into the ground
12.5.	**PBT and vPvB assessment results:**	Sulphuric acid is not classified as PBT or as a vPvB substance
12.6.	**Other adversative effects:**	In water, it completely dissociates into hydrogen and sulfate ions. Hydrogen ions diminish the pH of the local environment and can destroy living organisms.

13. Disposal considerations

13.1.	**Waste treatment methods:**	Examine possibilities for re-utilization. Product residues and unclean empty containers should be closed, sealed, labelled, and disposed of or recycled according to relevant national and local regulations. For disposal within the EC, the appropriate code according to the European Waste List (EWL) should be used. When unclean empty containers are passed on, the recipient must be warned of any possible hazard that may be caused by residues. Sulphuric acid is not allowed to be disposed of in any waste landfill but in a suitable waste disposal landfill. In small quantities, the acid has to be neutralized to pH = 6.2 – 9.1, and in large quantities the acid has to be neutralized with lime and the resulting gypsum should be deposited in a suitable waste disposal landfill, complying with the valid regulations on waste disposal. **Special precautions:** This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

	ADR, RID, AND, IMDG, ICAO-TI/IATA-DGR	
14.1.	**UN number:**	1830
14.2.	**UN proper shipping (technical name if required):**	SULPHURIC ACID
14.3	**Transport hazard class:**	8
14.4.	**Packaging group:**	II
14.5.	**Hazard to environment:**	Due to its corrosiveness, it is hazardous to the environment. In water, it completely dissociates into hydrogen and sulfate ions. Hydrogen ions diminish the pH of the local environment and can destroy living organisms.
14.6.	**Special precautions for user:**	ADR/RID: **Hazard identification number: 80** **Hazard notes:** Corrosive Avoid temperatures below -10 °C. Keep dry. Keep away from foodstuffs, acids, and alkalis.
14.7.	**Bulk transport by MARPOL 73/78 Annex II and IBC Code:**	Not applicable.

14.8.	**Tunnel code:**	E
14.9.	**Classification code:**	C1
14.10.	**Hazard label:**	8

15. Regulatory information

15.1.	**Rules and regulations regarding health, safety, and environmental hazard specific to the substance or mixture:**	European Agreement concerning the International Carriage of Dangerous Goods (ADR). Chemicals Act Regulation on classification, labelling and packaging of dangerous substances. Safety Act and the Occupational Health at Work
15.2.	**Chemical safety assessment:**	Chemical safety report (CSR).

16. Other information

	Amendments made in the revised edition:	Revised on the basis of the CLP Regulation (GHS) and changes in REACH.
	List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements. Write out the full text of any statement which are not written out in full under Sections 2 to 15:	Are listed in section 2.1. and 2.2.
	Training of personnel:	Training workers for work with hazardous substances and safety and health at work is mandatory.
	Sources:	Safety data sheet of raw material RECAH and CLP regulation Chemical Safety Report Registrant: CINKARNA CELJE D.D. CELJE SLOVENIJA Guidance for safety usage
	A key or legend to abbreviation and acronyms used in the safety data sheet:	ADR – European Agreement concerning the International Carriage of Dangerous Goods PBT – persistent, bio-accumulative and toxic vPvB – very persistent and very bio-accumulative STOT – specific toxicity for target organs DNEL – Derived No Effect Level PNEC – Predicted No Effect Concentration REACH: Registration, Evaluation, authorization and restriction of chemicals CLP: Regulation for **C**lassification, **L**abelling and **P**ackaging of dangerous goods

	A key or legend to abbreviation and acronyms used in the safety data sheet:	AC03	Electrical batteries and accumulators
		ERC01	Manufacture of substances
		ERC02	Formulation of preparations*
		ERC04	Industrial use of processing aids in processes and products, not becoming part of articles
		ERC05	Industrial use resulting in inclusion into or onto a matrix
		ERC06a	Industrial use resulting in manufacture of another substance (use of intermediates)
		ERC06b	Industrial use of reactive processing aids
		ERC07	Industrial use of substances in closed systems

		ERC08a	Wide dispersive indoor use of processing aids in open systems
		ERC08b	Wide dispersive indoor use of reactive substances in open systems
		ERC09b	Wide dispersive outdoor use of substances in closed systems
		PC0	UCN Code E10100
		PC14	Metal surface treatment products, including galvanic and electroplating products
		PC15	Non-metal-surface treatment products
		PC19	Intermediate
		PC20	Products such as ph-regulators, flocculants, precipitants, neutralization agents
		PC21	Laboratory chemicals
		PC35	Washing and cleaning products (including solvent based products)
		PC40	Extraction agents
		PROC01	Use in closed process, no likelihood of exposure
		PROC02	Use in closed, continuous process with occasional controlled exposure
		PROC03	Use in closed batch process (synthesis or formulation)
		PROC04	Use in batch and other process (synthesis) where opportunity for exposure arises
		PROC05	Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)
		PROC08a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
		PROC08b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
		PROC09	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
		PROC10	Roller application or brushing
		PROC13	Treatment of articles by dipping and pouring
		PROC15	Use as laboratory reagent
		PROC19	Hand-mixing with intimate contact and only PPE available
		SU02a	Mining, (without offshore industries)
		SU03	Industrial uses: Uses of substances as such or in preparations* at industrial sites
		SU04	Manufacture of food products
		SU05	Manufacture of textiles, leather, fur
		SU06b	Manufacture of pulp, paper and paper products
		SU08	Manufacture of bulk, large scale chemicals (including petroleum products)
		SU09	Manufacture of fine chemicals
		SU10	Formulation [mixing] of preparations and/or re-packaging(excluding alloys)
		SU11	Manufacture of rubber products
		SU14	Manufacture of basic metals, including alloys
		SU15	Manufacture of fabricated metal products, except machinery and equipment
		SU16	Manufacture of computer, electronic and opticalproducts, electrical equipment

		SU17	General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
		SU21	Consumer uses: Private households (= general public =consumers)
		SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
		SU23	Electricity, steam, gas water supply and sewage treatment

Data specified above are based on research and experience of the supplier at the time of compiling the present MSDS. The supplier may not assume responsibility in case the buyer/user should fail to use the product in accordance with the relevant suggestions and recommendations. No information contained in the present SMDS may release the buyer/user from liability to strictly follow any legal requirements regarding his business activities.