

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier:

CHLOROSULPHONIC ACID

Chemical name: Chlorosulphonic acid
CAS number: 7790-94-5
EC number: 232-234-6
Index number: 016-017-00-1
Registration number: 01-2119454163-45-0001

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

Product for sulphonating, chlorinating, sulphochlorinating. For industrial use.

1.3. Details of the supplier of the safety data sheet:

Information about the manufacturer:

Bige Holding Kft.

5007 Szolnok, Tószegi út 51.

Hungary

Tel: +36 56 505 800

1.3.1. Responsible person: -

E-mail: titkarsag@bigeholdingkft.hu

1.4. Emergency telephone number: *Please fill in*

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008 (CLP):

Skin corrosion/irritation, Hazard Category 1A – H314

Specific target organ toxicity – Single exposure, Hazard Category 3, Respiratory tract irritation – H335

Hazard statements:

H314 – Causes severe skin burns and eye damage.

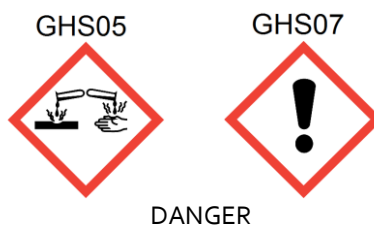
H335 – May cause respiratory irritation.

2.2. Label elements:

Chemical name: Chlorosulphonic acid

CAS number: 7790-94-5

EC number: 232-234-6



Hazard statements:

H314 – Causes severe skin burns and eye damage.

H335 – May cause respiratory irritation.

Precautionary statements:

P260 – Do not breathe mist/vapours/spray.

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

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

P304 + P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P310 – Immediately call a POISON CENTER/doctor.

EUH 014 – Reacts violently with water.

2.3. Other hazards:

No other known specific hazards for human or environment.

Results of PBT and vPvB assessment: No data available (inorganic substance).

Endocrine disrupting property: Not an endocrine disruptor.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance:

Chemical name: Chlorosulphonic acid

Synonym: Sulphonyl chloride hydroxide, chlorosulphonic acid

CAS number: 7790-94-5

EC number: 232-234-6

Indexszám: 016-017-00-1

Molecular formula: ClSO₂OH

Molecular weight: 116.5 g/mol

Purity: > 98 %

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

INGESTION:

Measures:

- Obtain immediate medical attention and show him the label.
- Place the victim into comfortable position.
- Do not give the victim anything to eat or drink, and do not induce vomiting if the victim is unconscious.
- Immediately give the injured person plenty of water to drink.

INHALATION:

Measures:

- Remove to fresh air, keep warm and at rest.
- Pulmonary oedema may occur.
- Obtain immediate medical attention and show him the label.

SKIN CONTACT:

Measures:

- Remove the contaminated clothes and shoes.
- Wash the contaminated area with plenty of warm water and soap (for 15 minutes) and cover with sterile lint.
- Obtain immediate medical attention and show him the label.

EYE CONTACT:

Measures:

- In case of contact with eyes flush immediately with plenty of flowing water (for at least 15 minutes).
- Obtain immediate medical attention and show him the label.

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

Symptoms: coughing, laboured breathing.

Possible hazards: serious burns, pulmonary oedema.

- 4.3. **Indication of any immediate medical attention and special treatment needed:**
Symptomatic treatment is needed. For clarifying the danger of a toxic lung oedema, make as quick as possible a throat X-ray picture.

SECTION 5: FIREFIGHTING MEASURES

- 5.1. **Extinguishing media:**
5.1.1. **Suitable extinguishing media:**
Choose extinguishing media suitable for the surrounding fire.
5.1.2. **Unsuitable extinguishing media:**
If bigger quantity gets into the environment, do not use water.
5.2. **Special hazards arising from the substance or mixture:**
Chlorosulphonic acid is non-combustible.
In case of fire, smoke and other combustion products may be formed, the inhalation of such combustion products can have serious adverse effects on health.
When heated for a longer time, chlorosulphonic acid decompose into hydrogen chloride, chlorine, sulphur oxide, sulfuryl chloride, pyrosulfuryl chloride and sulphuric acid. In contact with water explosion like decomposition with high temperature build-up into hydrogen chloride and sulphuric acid.
5.3. **Advice for firefighters:**
Wear full protective clothing and self-contained breathing apparatus.
Cool the fire affected containers with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1. **Personal precautions, protective equipment and emergency procedures:**
6.1.1. **For non-emergency personnel:**
Allow only well-trained experts wearing suitable protective clothing to abide in the field of the accident.
6.1.2. **For emergency responders:**
Stay upwind.
Knock down gases/vapours/mist with water spray.
Use acid proof tools and appropriate individual protective clothing.
6.2. **Environmental precautions:**
Dispose of the spillage and the resulting waste according to the applicable environmental regulations. Do not allow the product and the resulting waste to enter sewers/soil/surface or ground water. Notify the respective authorities in accordance with local law in the case of environmental pollution immediately.
6.3. **Methods and material for containment and cleaning up:**
Dike the spilled material and cover with ground lime or dry sand and place the collected waste into appropriate, labelled, closable hazardous waste container till proper removal/disposal.
During the collection, placement and disposal of the waste use appropriate acid resistant individual protective equipment.
The residues should be rinsed away with plenty of water; diluted solution should be neutralised with limestone or soda.
6.4. **Reference to other sections:**
For further and detailed information see Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

- 7.1. **Precautions for safe handling:**
Observe conventional hygiene precautions.
The product must be handled within strictly controlled conditions. The documentation about such conditions - including the choice of technical, administrative and personal protective equipment - is available in all manufacturing sites.
Technical measures:
Ensure adequate ventilation.
Use exclusively in dry and closed system.
Use acid proof equipment.
Carry out racking procedures only at stations with suitable exhaustion.
Precautions against fire and explosion:
Avoid the dispersion of the water into the environment - explosion hazard.

7.2. Conditions for safe storage, including any incompatibilities:

Technical measures and storage condition:

Keep in original, closed and appropriately labelled container.
 The place of storage has to be properly ventilated and cleanable.
 Store in cool and dry place.
 Keep away from moisture.
 Follow all instructions on the label.
 Ensure adequate ventilation.

Incompatible materials: See Section 10.5

Packaging material: Enamelled container. The product attacks the most of the plastics and several metals. Based on literature data, aluminium is not resistant to the product.

7.3. Specific end use(s):

No specific instructions available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Occupational exposure limit values (Commission Directive (EC) No 2000/39 of 8 June 2000):
 The substance is not regulated with exposure limit value.

DNEL values		Oral exposure		Dermal exposure		Inhalative exposure	
		Short term (acute)	Long term (chronic)	Short term (acute)	Long term (chronic)	Short term (acute)	Long term (chronic)
Consumer	Local	no data	no data	no data	no data	no data	no data
	Systemic	no data	no data	no data	no data	no data	no data
Worker	Local	no data	no data	no data	no data	no data	no data
	Systemic	no data	no data	no data	no data	no data	no data

PNEC values		
Compartment	Value	Note(s)
Freshwater	no data	no notes
Marine water	no data	no notes
Freshwater sediment	no data	no notes
Marine water sediment	no data	no notes
Sewage Treatment Plant (STP)	no data	no notes
Intermittent release	no data	no notes
Secondary poisoning	no data	no notes
Soil	no data	no notes

8.2. Exposure controls:

In case of a hazardous material with no controlled concentration limit it is the employer's duty to keep concentration levels down to a minimum achievable by existing scientific and technological means, where the hazardous substance poses no harm to workers.

8.2.1. Appropriate engineering controls:

In pursuance of work is proper foresight needed to avoid spilling onto clothes and floors and to avoid contact with eyes and skin. The product must be handled within strictly controlled conditions. The documentation about such conditions - including the choice of technical, administrative and personal protective equipment - is available in all manufacturing sites. The product attacks the most of the plastics and several metals. Based on literature data, aluminium is not resistant to the product. The product should not be contacted with liquid, gases, vapours. Do not inhale the vapours and the gases. Do not eat, drink and store food in the workplace. After the work hours thorough washing is required. Use skin protection.

8.2.2. **Individual protection measures, such as personal protective equipment:**

1. **Eye/face protection:** Use appropriate, tightly fitting goggles or face mask (EN ISO 16321-1:2022; EN 166).
2. **Skin protection:**
 - a. **Hand protection:** Use appropriate protective gloves made of rubber or PVC (EN 374). Preventive skin protection is recommended.
 - b. **Other:** Use appropriate, acid proof protective clothing.
3. **Respiratory protection:** Use gas mask with type B (colour: grey) filter or with type E (colour: yellow) filter and P2 type particle filter. In case of > 1 w% concentration, use self-contained respiratory equipment.
4. **Thermal hazards:** No thermal hazards known.

8.2.3. **Environmental exposure controls:**

No specific prescription.

The requirements detailed in Section 8 assume skilled work under normal conditions and usage of the product for appropriate aims. If conditions differ from normal or work is carried out under extreme conditions, an expert's advice is necessary before deciding upon further protective measures.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. **Information on basic physical and chemical properties:**

Parameter	Value / Test method / Remarks
1. Physical state	liquid
2. Colour	yellowish
3. Odour, odour threshold	pungent
4. Melting point/freezing point	-80 °C
5. Boiling point or initial boiling point and boiling range	152 °C
6. Flammability	not flammable
7. Lower and upper explosion limit	no data*
8. Flash point	no data*
9. Auto-ignition temperature	no data*
10. Decomposition temperature	151 °C
11. pH	< 1 (strong acid)
12. Kinematic viscosity	no data*
13. Solubility in water in other solvents	limitlessly soluble in water with heat generation (with explosion-like decomposition); insoluble in other solvents
14. Partition coefficient n-octanol/water (log value)	no data*
15. Vapour pressure	3.08 hPa
16. Density and/or relative density	1.75 g/cm ³
17. Relative vapour density	4.02 (air = 1)
18. Particle characteristics	no data*

9.2. **Other information:**

9.2.1. **Information with regard to physical hazard classes:**

Explosive properties: Not explosive.

9.2.2. **Other safety characteristics:**

Dynamic viscosity: 3.0 mPa.s (15 °C)

*: The manufacturer did not carry out any tests on this parameter for the product or the results of the tests are not available at the time of publication of the data sheet, or the property is not applicable for the product.

SECTION 10: STABILITY AND REACTIVITY

10.1. **Reactivity:**

Reacts violently with water.

10.2. **Chemical stability:**

Stable within normal temperature and general work conditions.

10.3. **Possibility of hazardous reactions:**

See section 10.5.

- 10.4. Conditions to avoid:**
Heating or distillation under vacuum for longer time may occur partial decomposition. Decomposition products: hydrogen chloride, chlorine, sulphur dioxide, sulphuryl chloride, pyrosulphuryl chloride and sulphuric acid.
- 10.5. Incompatible materials:**
Water, alcohols, alkalis, amines, chetones, ether, dimethyl sulfoxide.
- 10.6. Hazardous decomposition products:**
Chlorine, sulphur dioxide, sulphuryl chloride, pyrosulphuryl chloride and sulphuric acid.

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008:**
Acute toxicity: Based on available data, the classification criteria are not met.
Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes severe eye damage.
Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
STOT-single exposure: May cause respiratory irritation.
STOT-repeated exposure: Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.
- 11.1.1. Summaries of the information derived from the test conducted:**
For detailed test results contact the supplier of the substance.
- 11.1.2. Relevant toxicological properties:**
Ingestion: corrosion in the mouth and throat.
Skin: irritation, corrosion, wounds due to burning.
If the liquid gets into the eyes, strong corrosion occurs, in more serious cases it causes blindness. Burning sensation, lachrymation may occur.
The vapours of chlorosulphonic acid strongly irritate the mucous membranes and the respiratory tract.
Causes skin irritation.
The vapours strongly irritate the eyes.
- 11.1.3. Information on likely routes of exposure:**
Ingestion, inhalation, skin contact, eye contact.
- 11.1.4. Symptoms related to the physical, chemical and toxicological characteristics:**
No data available.
- 11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure:**
Causes severe skin burns and eye damage.
May cause respiratory irritation.
- 11.1.6. Interactive effects:**
No data available.
- 11.1.7. Absence of specific data:**
No information.
- 11.2. Information on other hazards:**
Endocrine disrupting properties:
Endocrine disrupting property: Not an endocrine disruptor.
Other information:
No data available.

SECTION 12: ECOLOGICAL INFORMATION

- 12.1. Toxicity:**
The substance is not classified as hazardous for the environment.
Aquatic toxicity:
LC₅₀ (fish): 282 mg/l/96h
- 12.2. Persistence and degradability:**
It should not get into waste water or sewer without dilution and neutralisation. Recommended substance for neutralisation: lime milk, lime hydrate, soda solution.
- 12.3. Bioaccumulation potential:**
No data available.

- 12.4. **Mobility in soil:**
Spreads in the air in mist form. Water/soil: well-soluble, quick spreading.
- 12.5. **Results of PBT and vPvB assessment:**
No data available (inorganic substance).
- 12.6. **Endocrine disrupting properties:**
Endocrine disrupting property: Not an endocrine disruptor.
- 12.7. **Other adverse effects:**
Do not enter into drains, watercourses and soil.
Harmful for aquatic organisms. The effects of the product depend on the environmental circumstances, for example: pH, temperature, the composition of organic and inorganic substances.

SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1. **Waste treatment methods:**
Disposal according to the local regulations.
- 13.1.1. **Information regarding the disposal of the product:**
Take up with suitable adsorbent.
Dispose according to the relevant regulations.
List of Waste Code:
No waste disposal key according to the List of Waste Code (LoW code) can be determined for this product, as only the purpose of application defined by the user enables an allocation. The LoW code number has to be determined after a discussion with a waste disposal specialist.
- 13.1.2. **Information regarding the disposal of the packaging:**
Dispose according to the relevant regulations.
The contaminated packaging must be fully emptied. Neutralise it with water and alkali. The neutralisation liquid should be disposed according to the local regulations. The neutralised containers should be disposed in the usual way.
- 13.1.3. **Physical/chemical properties that may affect waste treatment options shall be specified:**
No data available.
- 13.1.4. **Sewage disposal:**
No data available.
- 13.1.5. **Special precautions for any recommended waste treatment:**
No data available.

SECTION 14: TRANSPORT INFORMATION

- 14.1. **UN number or ID number:**
UN 1754
- 14.2. **UN proper shipping name:**
International transport: CHLOROSULPHONIC ACID
- 14.3. **Transport hazard class(es):**
Class: 8
- 14.4. **Packing group:**
I
- 14.5. **Environmental hazards:**
ADR/RID/ADN Environmentally hazardous: No
IMDG: Marine pollutant: No
- 14.6. **Special precautions for user:**
ADR/RID/ADN Limited quantity: 0
Excepted quantity: Eo
Transport category: 1
Tunnel restriction code: (E)
Hazard identification No.: X88
Special provisions: -
IMDG EmS: F-A, S-B
Stowage and handling: Category C, SW2
Segregation: -
Properties and observations: Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Causes severe burns to skin, eyes and mucous membranes.
Segregation group: 1 Acids

- 14.7. **Maritime transport in bulk according to IMO instruments:**
Not applicable.

SECTION 15: REGULATORY INFORMATION

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

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive (EC) No 1999/45 and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive (EEC) No 76/769 and Commission Directives (EEC) No 91/155, (EEC) No 93/67, (EC) No 93/105 and (EC) No 2000/21

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives (EEC) No 67/548 and (EC) No 1999/45, and amending Regulation (EC) No 1907/2006

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)

- 15.2. **Chemical safety assessment:** Chemical safety assessment has been carried out for the product.

SECTION 16: OTHER INFORMATION

Information regarding the revision of the safety data sheet:

The safety data sheet has been revised according to Regulation (EU) 2020/878.

The hazard classification of the substance did not change compared to the previous version.

This safety data sheet supersedes all previous versions according to Annex II of Regulation (EC) No 1907/2006.

Literature references / data sources:

Previous version of the safety data sheet (13. 03. 2020, version 3).

Relevant hazard statements (code and full text) of Sections 2 and 3:

H314 – Causes severe skin burns and eye damage.

H335 – May cause respiratory irritation.

EUH 014 – Reacts violently with water.

Training advice: No data available.

Full text of the abbreviations in the safety data sheet:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.

ATE: Acute Toxicity Estimate.

AOX: Adsorbable organic halides.

BCF: Bioconcentration factor.

BOD: Biological Oxygen Demand.

CAS number: Chemical Abstract Service number.

CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

CMR effects: Carcinogenic, mutagenic, reprotoxic effects.

COD: Chemical Oxygen Demand.

CSA: Chemical Safety Assessment.

CSR: Chemical Safety Report.

DNEL: Derived-No-Effect-Level.

ECHA: European Chemical Agency.

EC: European Community.

EC number: EINECS and ELINCS numbers (see also EINECS and ELINCS).

EEC: European Economic Community.

EEA: European Economic Area (EU + Iceland, Liechtenstein and Norway).

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

EN: European Norm.
EU: European Union.
EuPCS: European Product Categorisation System.
EWC: European Waste Catalogue (replaced by LoW – see below).
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
IATA: International Air Transport Association.
ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
IMO: International Maritime Organization.
IMSBC: International Maritime Solid Bulk Cargoes.
IUCLID: International Uniform Chemical Information Database.
IUPAC: International Union of Pure and Applied Chemistry.
Kow: n-Octanol - Water Partition Coefficient.
LC50: Lethal concentration resulting in 50 % mortality.
LD50: Lethal dose resulting in 50 % mortality (median lethal dose).
LoW: List of Waste.
LOEC: Lowest Observed Effect Concentration.
LOEL: Lowest Observed Effect Level.
NOEC: No Observed Effect Concentration.
NOEL: No Observed Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
OECD: Organization for Economic Cooperation and Development.
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
QSAR: Quantitative Structure Activity Relationship.
REACH: Regulation 1907/2006/EC concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.
SCBA: Self Contained Breathing Apparatus.
SDS: Safety Data Sheet.
STOT: Specific Target Organ Toxicity.
SVHC: Substances of Very High Concern.
UN: United Nations.
UVCB: Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials.
VOC: Volatile Organic Compound.
vPvB: very Persistent and very Bioaccumulative.

This safety data sheet had been prepared on the basis of information provided by the manufacturer/supplier and conform to the relevant regulations.

The information, data and recommendations contained herein are provided in good faith, obtained from reliable sources and believed to be true and accurate as of the date issued; however, no representation is made as to the comprehensiveness of the information.

The SDS shall be used only as a guide for handling the product; in the course of handling and using the product other considerations may arise or be required.

Users are cautioned to determine the appropriateness and applicability of the above information to their particular circumstances and purposes and assume all risk associated with the use of this product.

It is the responsibility of the user to fully comply with local, national and international regulations concerning the use of this product.

Safety data sheet was prepared by:
MSDS-Europe
International branch of ToxInfo Kft.

Professional help regarding the explanation of
the safety data sheet:
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