

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

CHLOROSULPHURIC ACID

CAS number: 7790-94-5
EU number 232-234-6
Index number: 016-017-01
REACH registration number: 01-2119454163-45-0001

1.2. Relevant identified uses of the substance or mixture and uses advised against: sulphonating, chlorinating, sulphochlorinating.

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

Bige Holding Trading and Production Ltd.

H-5007 Szolnok, Tószegi út 51.
Tel.: + 36 56 505 800
Fax: + 36 56 505 800

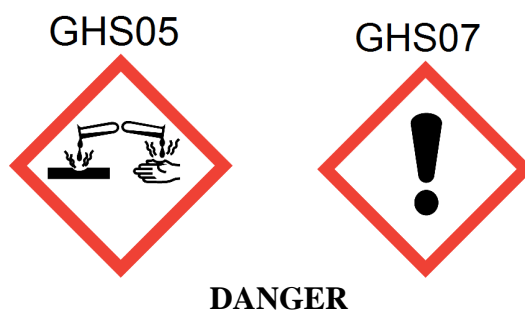
1.3.1. Responsible person: István Tóth E-mail: itoth@tvmszolnok.hu

1.4. Emergency telephone number: **Public Toxicological Health Service (ETTSZ)** 1096 Budapest, Nagyvárad tér 2. Tel.: +36 1 476 6464, +36 80 201 199

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification based on the CLP regulation:
Skin corrosion/irritation: Category 1A
STOT-single exposure: Category 3



H-phrases:

H314 – Causes severe skin burns and eye damage.
H335 – May cause respiratory irritation.
EUH 014 – Reacts violently with water.

P-phrases:

P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P310 – Immediately call a POISON CENTER or doctor/physician.
P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Classification based on the REACH regulation:



Risk phrases:

R 14 - Reacts violently with water.

R 35 - Causes severe burns.

R 37 - Irritating to respiratory system.

Safety phrases:

S 26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S 45 - In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

2.2. Label elements

CAS number: 7790-94-5

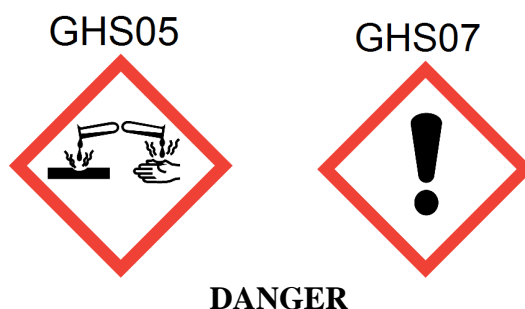
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2.3. Other hazards

3. **COMPOSITION/INFORMATION ON INGREDIENTS**

3.1. Substance

Synonym: Sulphonyl chloride hydroxide, chlorosulphonic acid

Formula: ClSO₂OH

Relative molar mass: 116,5

Purity: > 98 %

4. FIRST AID MEASURES

4.1. Description of first aid measures:

IN CASE OF 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.
- Give the injured person plenty of water to drink.

IN CASE OF INHALATION:

Measures:

- Take the victim into fresh air, loosen his clothes and let him rest.
- Lung oedema may occur.
- Obtain immediate medical attention and show him the label!

IN CASE OF SKIN CONTACT:

Measures:

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

IN CASE OF EYE CONTACT:

Measures:

- In case of contact with eyes flush immediately with plenty of flowing water for 15 minutes holding eyelids apart (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 burning, lung oedema.

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

Symptomatic treatment needed. For clarifying the danger of a toxic lung oedema, make as quick as possible a throat X-ray picture.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media:

5.1.1. Suitable extinguishing media:

The chlorosulphuric acid is not combustible, in case of fire use extinguishing media appropriate for the surrounding environment.

5.1.2. Unsuitable extinguishing media:

In case of bigger quantity gets into the environment, do not use water!

5.2. Special hazards arising from the substance or mixture:

When heated for a longer time, chlorosulphonic acid decompose into hydrogen chloride, chlorine, sulphur oxide, sulfonyl chloride, pyrosulfonyl chlorid and sulphuric acid. In contact with water explosion like decomposition with great temperature build-up into hydrogen chloride and sulphuric acid.

5.3. Advice for firefighters:

Wear full acid-proof protective clothing and self-contained breathing apparatus. The containers exposed to fire should be cooled with water spray.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

6.1.1. For non-emergency personnel:

Keep unprotected people away, allow only well trained experts wearing suitable protective clothing to abide in the field of accident.

6.1.2. For emergency responders:

Stay upwind. Knock down gases/vapours/mist with water spray. Use acid proof tools and clothing.

6.2. Environmental precautions:

Dispose of spillage and waste (product/packaging) in accordance with all applicable environmental laws. Do not allow 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 it with crushed limestone or dry sand then place into a suitable, closed, properly labelled chemical waste container for disposal. During disposal wear suitable personal 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 section 8 and 13.

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 equipments - is available in all manufacturing sites.

Technical measures:

Ensure adequate ventilation.

Use exclusively in dry and closed system.

Use acid proof equipments.

Carry out racking procedures only at stations with suitable exhaustion.

Precautions against fire and explosion:

Follow the fire protection suitable for the surrounding environment.

The containers exposed to fire should be cooled with water spray but avoid the dispersion of the water into the environment - explosion hazard.

7.2. Conditions for safe storage, including any incompatibilities:

Keep in original, closed and 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: flammable substances, bases, water based substances.

Packaging material. enamelled container.

7.3. Specific end use(s):

For the indentified uses see the exposition scenario.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

SULPHURIC ACID (CAS number: 7664-93-9): 8 hours: 0,05 mg/m3

DNEL		Routes of exposure	Exposure frequency:	Remarks:
Worker:	Consumer:			
		Dermal:	Short term (acute) Long term (repeated)	
		Inhalative	Short term (acute) Long term (repeated)	
		Oral	Short term (acute) Long term (repeated)	

PNEC			Exposure frequency:	Remarks:
Water	Soil	Air		
			Short term (single use) Long term (repeated)	
			Short term (single use) Long term (repeated)	
			Short term (single use) Long term (repeated)	

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 equipments - is available in all manufacturing sites.

The product attacks the most plastics and lot of metals. According to the literature data, the aluminium does not resist 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 adequate, tightly fitting goggles or face mask.

2. Skin protection:

a. Use adequate, protective gloves made of rubber or PVC. Preventive skin protection is recommended.

b. Other: use adequate, acid proof protective clothes.

3. Respiratory protection: use gas mask with B type (colour: grey) filter or with E type (colour: yellow) filter and P2 type particle filter. In case of > 1 w% concentration, use self contained respiratory equipment.

4. Thermal hazard.

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 should be sought out before deciding upon further protective measures.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Parameter	Test method:	Remarks:
1. Appearance:		
2. Odour:		
3. Odour threshold:		
4. pH value:		strong acid
5. Melting point/freezing point:		
6. Initial boiling point and boiling range:		
7. Flash point:		
8. Evaporation rate:		
9. Flammability:		
10. Upper/lower flammability or explosive limits:		
11. Vapour pressure:		
12. Relative density:		
13. Solubility(ies):		with explosion like decomposition
14. Partition coefficient: n-octanol/water:		
15. Auto-ignition temperature:		
16. Decomposition temperature:		
17. Viscosity:		
18. Explosive properties:		
19. Oxidizing properties:		

9.2. Other information:

Relative vapour density: 4,02 (air = 1)

10. STABILITY AND REACTIVITY

10.1. Reactivity:

None known.

10.2. Chemical stability:

At normal temperature: stabile at general conditions of work.

10.3. Possibility of hazardous reactions:

no data available.

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, bases, amines, ketones, ether, dimethyl sulphoxide.

10.6. Hazardous decomposition products:

chlorine, sulphur dioxide, sulphuryl chloride, pyrosulphuryl chloride and sulphuric acid.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:

Acute toxicity: causes serious burns.

Skin corrosion/irritation: Category 1A

Serious eye damage/eye irritation: causes serious burns.

Respiratory or skin sensitisation: none known.

Germ cell mutagenicity: none known.

Carcinogenicity: none known.

Reproductive toxicity: none known.

STOT-single exposure: Category 3

STOT-repeated exposure: none known.
Aspiration hazard: none known.

- 11.1.1. For substances subject to registration, brief 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 of the hazardous substances:
No data available about the product.
- 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:
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, lacrymation may occur.
- 11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure:
The vapours of sulphuric acid strongly irritate the mucous membranes and the respiratory tract.
Causes skin irritation.
The vapours strongly irritate the eyes.
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.
- 11.1.8. Other information:
No data available.

12. ECOLOGICAL INFORMATION

- 12.1. Toxicity:
Do not enter into drains, watercourses and soil.
Toxic to aquatic organisms. The effects of the product depend on the environmental circumstances, for example: pH, temperature, the composition of organic and inorganic substances.
LC₅₀ (fish): 282 mg/l/96h
Water hazard class (WGK, German regulation, self-classification): 2: Water polluting substance
- 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.
- 12.6. Other adverse effects:
No data available.

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 and dispose it according to the local regulations.
During the disposal of the product, its residue and its packaging the national and local prescriptions should be observed. The EWC codes indicated below are only recommendations, but they may have to be changed due to special circumstances, in such cases new classification may be needed.
- 13.1.2. Information regarding the disposal of the packaging:
The packaging of the product should be emptied thoroughly. 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:
None known.

- 13.1.4. Sewage disposal:
None known.
- 13.1.5. Special precautions for any recommended waste treatment
No data available.

14. TRANSPORT INFORMATION

- 14.1. UN Number:
1754
- 14.2. UN proper shipping name:
CHLOROSULPHURIC ACID
- 14.3. Transport hazard class(es):
8
Label: 8
Hazard number: X88
EMS: : 8-03
Marine transport: remark: MFAG 700
Air transport: Fobidden in passenger and cargo aircraft.
- 14.4. Packing group:
I
- 14.5. Environmental hazards:
No data available.
- 14.6. Special precautions for user:
No data available.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
No data available.

15. REGULATORY INFORMATION

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:
1. 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 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
 2. COMMISSION REGULATION (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures
 3. DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations
 4. 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 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
 5. COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- 15.2. Chemical safety assessment:
Chemical safety assessment is available about the product.

16. OTHER INFORMATION

Information regarding the revision of the safety data sheet: -
Full text of the abbreviations in the safety data sheet:
DNEL: Derived no effect level. **PNEC:** Predicted no effect concentration. **CMR effects:** Carcinogenicity, Mutagenicity and reproduction toxicity. **PBT:** Persistent, bioaccumulative and toxic. . n.d.: not defined. . n.a.: Not applicable. .
Data sources: -
Relevant R-Phrases (number and full text) of Section 2 and 3:
R 14 - Reacts violently with water.
R 35 - Causes severe burns.
R 37 - Irritating to respiratory system.
Relevant H-Phrases (number and full text) of Section 2 and 3:
H314 – Causes severe skin burns and eye damage.

H335 – May cause respiratory irritation.

EUH 014 – Reacts violently with water.

Training instructions-

Recommended restrictions on use (non-statutory recommendations by supplier): -

This safety data sheet had been prepared on the basis of information provided by the manufacturer. 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. Since the conditions or the handling, the storage and the disposal of this product are beyond the control of the manufacturer, the distributor or the preparer of this SDS, no warranty, expressed or implied, regarding the product described in this SDS shall be created or inferred by any statement in this SDS. No responsibility is assumed regarding the accuracy, completeness or suitability of all or any of the information contained herein or the results to be obtained from the use thereof at the time of use. In no way shall the manufacturer, the distributor or the preparer of the be liable for any claims, losses or damages of third parties, personal injury, property damage, lost profits or any special, direct, indirect, incidental, consequential or exemplary damages resulting from the use of or reliance upon such information. 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.