

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Chlorsulfonsäure (Chlorschwefelsäure) zur Synthese

Revision date: 14.07.2023

Product code: 22862

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

### 1.1. Product identifier

Chlorsulfonsäure (Chlorschwefelsäure) zur Synthese

CAS No: 7790-94-5  
Index No: 016-017-00-1  
EC No: 232-234-6

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

#### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

Company name:	AnalytiChem GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
E-mail:	info@analytichem.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
E-mail:	produktsicherheit@analytichem.de	
Internet:	www.analytichem.de	
Responsible Department:	Abteilung Produktsicherheit	

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Skin Corr. 1A; H314

STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:



#### Hazard statements

H314 Causes severe skin burns and eye damage.

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H335 May cause respiratory irritation.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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.  
P310 Immediately call a POISON CENTER/doctor.

**Special labelling of certain mixtures**

EUH014 Reacts violently with water.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

Sum formula: HClO<sub>3</sub>S  
Molecular weight: 116,53 g/mol

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7790-94-5	chlorosulphonic acid			100 %
	232-234-6	016-017-00-1		
	Skin Corr. 1A, STOT SE 3; H314 H335 EUH014			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
7790-94-5	232-234-6	chlorosulphonic acid	100 %
	dermal: LD50 = 2857,6 mg/kg; oral: LD50 = 3742,25 mg/kg		

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Self-protection of the first aider

**After inhalation**

Provide fresh air.  
Call a physician immediately.

**After contact with skin**

Take off immediately all contaminated clothing and wash it before reuse.  
Wash immediately with: Water  
Call a physician immediately.

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**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Protect uninjured eye.

**After ingestion**

Rinse mouth immediately and drink plenty of water.  
Do not allow a neutralisation agent to be drunk. Do NOT induce vomiting.  
Call a physician immediately.

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

Irritant, corrosive, Cough, Dyspnoea  
Risk of serious damage to eyes.

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

No data available

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

Water  
Foam

**5.2. Special hazards arising from the substance or mixture**

Non-combustible liquids  
Hazardous combustion products  
In case of fire may be liberated: Hydrochloric gas, Sulphur oxides  
Do not allow contact with water.  
After contact with water: Formation of: Hydrochloric acid, Heat

**5.3. Advice for firefighters**

Do not inhale explosion and combustion gases.  
Avoid contact with skin, eyes and clothes.  
In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Suppress gases/vapours/mists with water spray jet.  
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Move undamaged containers from immediate hazard area if it can be done safely.  
Use water spray jet to protect personnel and to cool endangered containers.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

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**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

**6.3. Methods and material for containment and cleaning up**

**For containment**

Cover drains.  
Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.  
Take up carefully when dry. Take up dust-free and set down dust-free.

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Read label before use. Handle and open container with care.  
Do not breathe vapour/aerosol.  
When using do not eat, drink, smoke, sniff. Keep container tightly closed.  
Use personal protection equipment. Use extractor hood (laboratory).  
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.  
Do not allow contact with water.  
After contact with water: Formation of: Hydrochloric acid, Heat

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

**Advice on general occupational hygiene**

Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities  
Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Further information on handling**

Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary.  
Take off immediately all contaminated clothing and wash it before reuse.  
If handled uncovered, arrangements with local exhaust ventilation have to be used.

**7.2. Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and vessels**

Store in a well-ventilated place. Keep container tightly closed.

**Further information on storage conditions**

Store in a dry place.  
storage temperature < +30°C

**7.3. Specific end use(s)**

Laboratory chemicals

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**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
7790-94-5	Chlorosulphonic acid	-	1		TWA (8 h)	

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
7790-94-5	chlorosulphonic acid			
Worker DNEL, long-term	inhalation	systemic	0,042 mg/m <sup>3</sup>	
Consumer DNEL, long-term	inhalation	systemic	0,01 mg/m <sup>3</sup>	
Consumer DNEL, long-term	dermal	systemic	0,009 mg/kg bw/day	
Consumer DNEL, long-term	oral	systemic	0,073 mg/kg bw/day	
Worker DNEL, long-term	dermal	systemic	0,037 mg/kg bw/day	

**PNEC values**

CAS No	Substance	Value
7790-94-5	chlorosulphonic acid	
Freshwater	0,019 mg/l	
Freshwater (intermittent releases)	0,19 mg/l	
Marine water	0,002 mg/l	
Freshwater sediment	15,622 mg/kg	
Marine sediment	15,622 mg/kg	
Micro-organisms in sewage treatment plants (STP)	91,848 mg/l	
Soil	3,659 mg/kg	

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Avoid dust formation. Do not breathe dust.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

goggles

Wear eye/face protection.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

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Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 890 Vitoject®

Recommended material: FKM (fluoro rubber) 0,7 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 890 Vitoject®

Recommended material: FKM (fluoro rubber) 0,7 mm

Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### Skin protection

Wear suitable protective clothing.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

#### Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Filtering device with filter or ventilator filtering device of type: B-(P2)

#### Environmental exposure controls

Do not allow to enter into surface water or drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless
Odour:	stinging
Odour threshold:	No data available
Melting point/freezing point:	-80 °C
Boiling point or initial boiling point and boiling range:	152 °C
Flammability:	No data available
Lower explosion limits:	No data available
Upper explosion limits:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	>151 °C
pH-Value (at 20 °C):	<1
Viscosity / kinematic:	No data available
Water solubility:	spontaneous decomposition
Solubility in other solvents:	No data available
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	No data available
Dispersion stability:	No data available

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Vapour pressure: (at 20 °C)	3,08 hPa
Vapour pressure: (at 50 °C)	33,1 hPa
Density:	1,69 g/cm <sup>3</sup>
Relative density:	No data available
Bulk density:	No data available
Relative vapour density:	No data available
Particle characteristics:	No data available

**9.2. Other information**

**Information with regard to physical hazard classes**

Explosive properties

No data available

Sustaining combustion:

No data available

Self-ignition temperature

Solid:

No data available

Gas:

No data available

Oxidizing properties

No data available

**Other safety characteristics**

Evaporation rate:

No data available

Solvent separation test:

No data available

Solvent content:

0

Solid content:

0

Sublimation point:

No data available

Softening point:

No data available

Pour point:

No data available

No data available:

Viscosity / dynamic:

3 mPa·s

(at 15 °C)

Flow time:

No data available

**Further Information**

No data available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No data available

**10.2. Chemical stability**

Protect against: Humidity

**10.3. Possibility of hazardous reactions**

Do not allow contact with water.

After contact with water: Formation of: Hydrochloric acid, Heat

Alcohols, sulphuric acid, Acetic acid, Metal powder, Acids, Alkali (lye)

**10.4. Conditions to avoid**

Humidity

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

In case of fire may be liberated:

SECTION 5: Firefighting measures

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**Further information**

No data available

**SECTION 11: Toxicological information**

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

**Toxicokinetics, metabolism and distribution**

No data available

**Acute toxicity**

Based on available data, the classification criteria are not met.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7790-94-5	chlorosulphonic acid				
	oral	LD50 3742,25 mg/kg	Mouse	QSAR Toolbox version 3.1 (2013)	other:
	dermal	LD50 2857,6 mg/kg	Rabbit	QSAR Toolbox version 3.1 (2013)	other:

**Irritation and corrosivity**

Causes severe skin burns and eye damage.

Causes serious eye damage.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation. (chlorosulphonic acid)

**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.

**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

**Other information**

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Pulmonary oedema

**Further information**

Irritant, corrosive, Cough, Dyspnoea

Risk of serious damage to eyes.



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**SECTION 12: Ecological information**

**12.1. Toxicity**

Based on available data, the classification criteria are not met.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
7790-94-5	chlorosulphonic acid					
	Acute fish toxicity	LC50 mg/l	142,321	96 h	Carassius auratus	QSAR toolbox version 3.1 (2013) other: Estimated data
	Acute algae toxicity	ErC50 mg/l	19,027	72 h	Pseudokirchneriella subcapitata	QSAR Toolbox version 3.1 (2013) other: Estimated data
	Acute crustacea toxicity	EC50 mg/l	173,211	48 h	Daphnia magna	QSAR Toolbox version 3.1 (2013) other: Estimated data

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
7790-94-5	chlorosulphonic acid	-0,003

**BCF**

CAS No	Chemical name	BCF	Species	Source
7790-94-5	chlorosulphonic acid	3,2	Fish	PBT profiler, Office

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**Further information**

Do not allow to enter into surface water or drains.  
Discharge into the environment must be avoided.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations.  
Do not allow to enter into surface water or drains.

**Contaminated packaging**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.  
Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

**14.1. UN number or ID number:** UN 1754  
**14.2. UN proper shipping name:** Chlorosulfonic acid

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**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** I  
 Hazard label: 8  
 Classification code: C1  
 Limited quantity: 0  
 Excepted quantity: E0  
 Transport category: 1  
 Hazard No: X88  
 Tunnel restriction code: E

#### Inland waterways transport (ADN)

**14.1. UN number or ID number:** UN 1754  
**14.2. UN proper shipping name:** CHLOROSULPHONIC ACID  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** I  
 Hazard label: 8  
 Classification code: C1  
 Limited quantity: 0  
 Excepted quantity: E0

#### Marine transport (IMDG)

**14.1. UN number or ID number:** UN 1754  
**14.2. UN proper shipping name:** Chlorosulfonic acid  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** I  
 Hazard label: 8  
 Special Provisions: -  
 Limited quantity: 0  
 Excepted quantity: E0  
 EmS: F-A, S-B

#### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number or ID number:** UN 1754  
**14.2. UN proper shipping name:** Chlorosulphonic acid  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** -  
 Hazard label: 8  
 Limited quantity Passenger: Forbidden  
 Passenger LQ: Forbidden  
 IATA-packing instructions - Passenger: Forbidden  
 IATA-max. quantity - Passenger: Forbidden  
 IATA-packing instructions - Cargo: Forbidden  
 IATA-max. quantity - Cargo: Forbidden

## SECTION 15: Regulatory information

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

#### EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to 2012/18/EU (SEVESO III): O1 Substances or mixtures with hazard statement EUH014

#### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

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#### SECTION 16: Other information

##### Changes

This data sheet contains changes from the previous version in section(s): 11,12.

##### Abbreviations and acronyms

Skin Corr: Skin corrosion

Eye Dam: Eye damage

STOT SE: Specific target organ toxicity - single exposure

##### Relevant H and EUH statements (number and full text)

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

EUH014 Reacts violently with water.

##### Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.