according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



## Silver sulphide ≥98 %

article number: **5311** Version: **3.0 en** Replaces version of: 24.10.2023 Version: (2) date of compilation: 29.06.2021 Revision: 01.03.2024

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

1.1 Product identifier

Identification of the substance

Article number

Registration number (REACH)

EC number

CAS number

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

Relevant identified uses:

Uses advised against:

Laboratory and analytical use

Laboratory chemical

244-438-2

21548-73-2

5311

Silver sulphide ≥98 %

according to REACH (< 1 t/a).

Do not use for private purposes (household). Food, drink and animal feedingstuffs.

It is not required to list the identified uses because the substance is not subject to registration

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

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

**Telephone:**+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 **e-mail:** sicherheit@carlroth.de **Website:** www.carlroth.de

Competent person responsible for the safety data Department Health, Safety and Environment sheet:

e-mail (competent person):

sicherheit@carlroth.de

# 1.4 Emergency telephone number

# **SECTION 2: Hazards identification**

2.1 Classification of the substance or mixture

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

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.8R	Specific target organ toxicity - single exposure (respirat- ory tract irritation)	3	STOT SE 3	H335

For full text of abbreviations: see SECTION 16

# 2.2 Label elements

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

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# Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word	Warning
Pictograms	•
GHS07	
Hazard statemen	ts
H315 H319 H335	Causes skin irritation Causes serious eye irritation May cause respiratory irritation

## **Precautionary statements**

#### **Precautionary statements - prevention**

P280	Wear protective gloves/eye protection
P280	Wear protective gloves/eye protectio

#### **Precautionary statements - response**

P302+P352	IF ON SKIN: Wash with plenty of water
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact
	lenses, if present and easy to do. Continue rinsing

#### Labelling of packages where the contents do not exceed 125 ml

Signal word: Warning

Symbol(s)



H335

May cause respiratory irritation.

## 2.3 Other hazards

## Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

# **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\ge 0,1\%$ .

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

## 3.1 Substances

Name of substance	Silver sulphide
Molecular formula	Ag₂S
Molar mass	247,8 <sup>g</sup> / <sub>mol</sub>
CAS No	21548-73-2
EC No	244-438-2

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



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# **SECTION 4: First aid measures**

## 4.1 Description of first aid measures



## **General notes**

Take off contaminated clothing.

#### **Following inhalation**

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

#### Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

#### **Following ingestion**

Rinse mouth. Call a doctor if you feel unwell.

## 4.2 Most important symptoms and effects, both acute and delayed

#### Irritation, Cough, Dyspnoea

**4.3 Indication of any immediate medical attention and special treatment needed** none

# **SECTION 5: Firefighting measures**

# 5.1 Extinguishing media



## Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water, foam, dry extinguishing powder, ABC-powder

## Unsuitable extinguishing media

water jet

## 5.2 Special hazards arising from the substance or mixture

Non-combustible.

#### Hazardous combustion products

In case of fire may be liberated: Sulphur oxides (SOx)

## 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



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# **SECTION 6: Accidental release measures**

# 6.1 Personal precautions, protective equipment and emergency procedures



# For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe dust.

## 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

# 6.3 Methods and material for containment and cleaning up

# Advice on how to contain a spill

Covering of drains. Take up mechanically.

## Advice on how to clean up a spill

Take up mechanically. Control of dust.

## Other information relating to spills and releases

Place in appropriate containers for disposal.

#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

# SECTION 7: Handling and storage

## 7.1 Precautions for safe handling

Provision of sufficient ventilation. Avoid dust formation.

## Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

## Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

# 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

## Incompatible substances or mixtures

Observe hints for combined storage.

## Consideration of other advice:

## Ventilation requirements

Use local and general ventilation.

## Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

## 7.3 Specific end use(s)

No information available.

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

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

8.1 Control parameters

# National limit values

## **Occupational exposure limit values (Workplace Exposure Limits)**

This information is not available.

## 8.2 Exposure controls

# Individual protection measures (personal protective equipment)

# **Eye/face protection**



Use safety goggle with side protection.

## **Skin protection**



## hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a consider-able reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

#### • type of material

NBR (Nitrile rubber)

#### material thickness

>0,11 mm

## • breakthrough times of the glove material

>480 minutes (permeation: level 6)

#### other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

# **Respiratory protection**



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).



according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



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## Environmental exposure controls

Keep away from drains, surface and ground water.

# **SECTION 9: Physical and chemical properties**

# 9.1 Information on basic physical and chemical properties

Physical state	solid
Form	powder
Colour	grey
Odour	odourless
Melting point/freezing point	845 °C
Boiling point or initial boiling point and boiling range	not determined
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not applicable
Kinematic viscosity	not relevant
Solubility(ies)	
Water solubility	(practically insoluble)
Partition coefficient	
Partition coefficient n-octanol/water (log value):	not relevant (inorganic)
Vapour pressure	not determined
Density and/or relative density	
Density	7,234 <sup>g</sup> / <sub>cm³</sub> at 20 °C
Relative vapour density	Information on this property is not available.
Particle characteristics	No data available.
Other safety parameters	
Oxidising properties	none
Other information	
Information with regard to physical hazard classes:	hazard classes acc. to GHS (physical hazards): not relevant

9.2

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



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Other safety characteristics:

There is no additional information.

# SECTION 10: Stability and reactivity

# 10.1 Reactivity

This material is not reactive under normal ambient conditions.

# 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

# 10.3 Possibility of hazardous reactions

Violent reaction with: Chlorates

- 10.4 Conditions to avoid There are no specific conditions known which have to be avoided.
- 10.5 Incompatible materials

There is no additional information.

# **10.6** Hazardous decomposition products

Hazardous combustion products: see section 5.

# **SECTION 11: Toxicological information**

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

Classification according to GHS (1272/2008/EC, CLP)

## Acute toxicity

Shall not be classified as acutely toxic.

## Skin corrosion/irritation

Causes skin irritation.

# Serious eye damage/eye irritation

Causes serious eye irritation.

## **Respiratory or skin sensitisation**

Shall not be classified as a respiratory or skin sensitiser.

Shall not be classified as germ cell mutagenic.

# Carcinogenicity

Shall not be classified as carcinogenic.

## **Reproductive toxicity**

Germ cell mutagenicity

Shall not be classified as a reproductive toxicant.

## Specific target organ toxicity - single exposure

May cause respiratory irritation.

# Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

## **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

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# Symptoms related to the physical, chemical and toxicological characteristics

## • If swallowed

Data are not available.

# • If in eyes

Causes serious eye irritation

# • If inhaled

Irritation to respiratory tract, cough, Dyspnoea

# • If on skin

causes skin irritation

# Other information

none

# **11.2** Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\ge 0,1\%$ .

# 11.3 Information on other hazards

There is no additional information.

# **SECTION 12: Ecological information**

# 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

# 12.2 Persistence and degradability

Data are not available.

- **12.3 Bioaccumulative potential** Data are not available.
- 12.4 Mobility in soil

Data are not available.

- **12.5 Results of PBT and vPvB assessment** Data are not available.
- **12.6** Endocrine disrupting properties Does not contain an endocrine disruptor (ED) at a concentration of  $\ge 0,1\%$ .
- 12.7 Other adverse effects

Data are not available.

# **SECTION 13: Disposal considerations**

# 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.





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#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packagings

Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

#### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

## **Properties of waste which render it hazardous**

- HP 4 irritant skin irritation and eye damage
- HP 5 specific target organ toxicity (STOT)/aspiration toxicity

#### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

# **SECTION 14: Transport information**

- 14.1 UN number or ID number
- 14.2 UN proper shipping name
- 14.3 Transport hazard class(es)
- 14.4 Packing group
- 14.5 Environmental hazards

- not subject to transport regulations
- not assigned
- none
- not assigned
- non-environmentally hazardous acc. to the dangerous goods regulations

## 14.6 Special precautions for user

There is no additional information.

# **14.7** Maritime transport in bulk according to IMO instruments The cargo is not intended to be carried in bulk.

## 14.8 Information for each of the UN Model Regulations

**International Maritime Dangerous Goods Code (IMDG) - Additional information** Not subject to IMDG.

**International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information** Not subject to ICAO-IATA.

# **SECTION 15: Regulatory information**

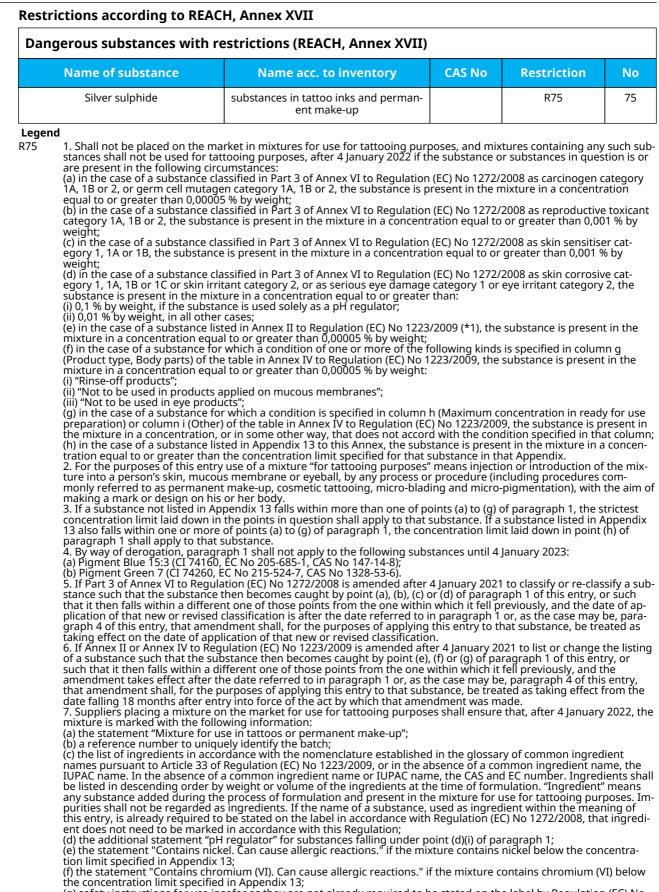
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)



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(g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No



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#### Legend

1272/2008.

The information shall be clearly visible, easily legible and marked in a way that is indelible.

The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the

market, unless the Member State(s) concerned provide(s) otherwise. Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.

Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this para-

graph. 8. Mixtures that do not contain the statement "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes

9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or gener-ate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclus ively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

## List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

Not listed.

#### **Seveso Directive**

2012/18/EU (Seveso III)					
Νο	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the ap- plication of lower and upper-tier re- quirements	Notes		
	not assigned				

#### **Deco-Paint Directive**

VOC content	0 %
VOC content	0 g/l

## Industrial Emissions Directive (IED)

VOC content	0 %
VOC content	0 <sup>g</sup> / <sub>l</sub>

## Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

#### Regulation concerning the establishment of a European Pollutant Release and Transfer **Register (PRTR)**

not listed

#### Water Framework Directive (WFD)

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Silver sulphide	Metals and their compounds		a)	

Legend a)

Indicative list of the main pollutants



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## Regulation on the marketing and use of explosives precursors

not listed

## **Regulation on drug precursors**

not listed

# Regulation on substances that deplete the ozone layer (ODS)

not listed

# Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

## **Regulation on persistent organic pollutants (POP)**

not listed

# **Other information**

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

## **National inventories**

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
NZ	NZIoC	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

Legend

AIICAustralian Inventory of Industrial ChemicalsCSCL-ENCSList of Existing and New Chemical Substances (CSCL-ENCS)DSLDomestic Substances List (DSL)ECSIEC Substance Inventory (EINECS, ELINCS, NLP)IECSCInventory of Existing Chemical Substances Produced or Imported in ChinaKECIKorea Existing Chemicals InventoryNCINational Chemical Inventory of ChemicalsTCSITaiwan Chemical Substance InventoryTSCAToxic Substance Control Act

## 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.





according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



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# **SECTION 16: Other information**

# Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.3	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) in a concentration of ≥ 0,1%.	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
15.1		National inventories: change in the listing (table)	yes

## Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concern- ing the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identi- fier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Na- tions
ΙΑΤΑ	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
SVHC	Substance of Very High Concern
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

# Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

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Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

# List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

#### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.