

This document is not a safety data sheet, but it is based on the GHS regulations.

Version 4.0 Revision Date: 29.07.2020 Date of last issue: 20.11.2018
Date of first issue: 20.06.2017

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

1.1 Product identifier

Trade name : Silver Grains min. 99.99 %

Product code : 81059923

REACH Registration Number : 01-2119555669-21-0028
Company : Heraeus Deutschland GmbH & Co. KG

01-2119555669-21-0009
Company : Heraeus Metals Germany GmbH & Co. KG

01-2119555669-21-0006
Company : Argor-Heraeus Deutschland GmbH

Heraeus companies not listed here do not have a REACH registration, because the companies either are located outside the EU or they are not required to register due to the annual amount of produced/imported substance.

Substance name : silver

CAS-No. : 7440-22-4

EC-No. : 231-131-3

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

Use of the Sub- : Industrial use
stance/Mixture

1.3 Details of the supplier of the safety data sheet

Company : Heraeus Deutschland GmbH & Co. KG
Heraeusstr. 12-14
63450 Hanau

Telephone : +496181351

E-mail address of person : sds@heraeus.com
responsible for the SDS (Heraeus Holding: EHS Chemical Safety)

1.4 Emergency telephone number

Emergency telephone num- : +49 6132-84463
ber International Emergency Number
This telephone number is available 24 hours per day, 7 days
per week.

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SECTION 2: Hazards identification

Not a hazardous substance or mixture.

SECTION 3: Composition/information on ingredients

Substance name : silver

Hazardous components

Chemical name	CAS-No. EC-No. Index-No.	Concentration (% w/w)
Substances with a workplace exposure limit :		
silver	7440-22-4 231-131-3	>= 90 - <= 100

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : First aider needs to protect himself.
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
- If inhaled : Move to fresh air.
- In case of skin contact : Take off all contaminated clothing immediately.
Wash off with soap and plenty of water.
- In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Keep eye wide open while rinsing.
Protect unharmed eye.
Call a physician immediately.
- If swallowed : Immediately give large quantities of water to drink.
Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Exposure to decomposition products may be a hazard to health.

Hazardous combustion products : Metal oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Further information : Use a water spray to cool fully closed containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Follow safe handling advice and personal protective equipment recommendations. Ensure adequate ventilation. Evacuate personnel to safe areas. Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water. Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up and arrange disposal without creating dust. Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.

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Wear personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.

Hygiene measures : Keep away from food and drink. Wash hands before breaks and at the end of workday. Keep working clothes separately. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep tightly closed in a dry, cool and well-ventilated place.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
silver	7440-22-4	TWA	0,1 mg/m3	2000/39/EC
Further information	Indicative			
		AGW (Inhalable fraction)	0,1 mg/m3	DE TRGS 900
Peak-limit: excursion factor (category)	8;(II)			
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission), European Union (The EU has established a limit value: deviations in value and peak limit are possible)			
		TWA	0,01 mg/m3 (Silver)	2006/15/EC
Further information	Indicative			

8.2 Exposure controls

Engineering measures

Provide sufficient air exchange and/or exhaust in work rooms.

Personal protective equipment

Eye protection : Safety glasses with side-shields

Hand protection

Remarks

: Before removing gloves clean them with soap and water. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

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Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection : No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : solid
Colour : grey
Odour : odourless
Odour Threshold : No data available

pH : Not applicable

Melting point/range : 961,93 °C
 (1.013 hPa)

Boiling point/boiling range : 2.187 °C
 (1.013 hPa)

Flash point : Not applicable

Evaporation rate : Not applicable

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Relative density : No data available

Density : 10,49 g/cm³ (23 °C, 1.013 hPa)

Solubility(ies)
 Water solubility : < 0,1 mg/l insoluble (20 °C, 1.013 hPa)

 Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : Not applicable
Auto-ignition temperature : The substance or mixture is not classified as self heating. The substance or mixture is not classified as pyrophoric.

Decomposition temperature : The substance or mixture is not classified self-reactive.

Viscosity

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Viscosity, dynamic : Not applicable
Viscosity, kinematic : Not applicable
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information

Molecular weight : 107,87 g/mol
Metal corrosion rate : Not corrosive to metals
Particle size : > 1 mm
Self-ignition : The substance or mixture is not classified as self heating. The substance or mixture is not classified as pyrophoric.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : No data available

10.6 Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Components:

silver:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

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Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5,16 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Components:

silver:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:

silver:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

silver:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative
Remarks : Based on data from similar materials

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Germ cell mutagenicity

Not classified based on available information.

Components:

silver:

- Genotoxicity in vitro : Test Type: in vitro micronucleus test
Method: OECD Test Guideline 487
Result: negative
Remarks: Based on data from similar materials
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Ingestion
Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

Components:

silver:

- Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials
- Effects on foetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

silver:

- Species : Rat
NOAEL : >= 250 mg/kg
Application Route : Ingestion
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Exposure time	:	52 Days
Method	:	OECD Test Guideline 422
Remarks	:	Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

SECTION 12: Ecological information

12.1 Toxicity

Components:

silver:

Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	No toxicity at the limit of solubility
Long-term (chronic) aquatic hazard	:	No toxicity at the limit of solubility

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Components:

silver:

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 70 Remarks: Based on data from similar materials
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12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..
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12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	If recycling is not practicable, dispose of in compliance with local regulations.
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Contaminated packaging : Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances

SAFETY INFORMATION SHEET
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es; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

DE / EN