

Safety data sheet
According to Regulation n. 1907/2006 and Regulation 878/2020
SILVER POWDER



Revision n. III of 21.11.2022
Replaces revision II of 08.08.2022

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

1.1 Product identifier

Chemical name Silver
Product code 28
CAS 7440-22-4
EC 231-131-3
Atomic weight 107.87
Raw formula Ag
Reach number 01-2119555669-21-XXXX

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

Recommended uses Industrial use
Uses advised against See section 15

1.3 Details of the supplier of the safety data sheet

Name FAGGI ENRICO S.P.A.
Address Via Majorana, 101/103 50019 Sesto Fiorentino FI
Telephone number 055311861
Fax number 055311791
Competent person responsible for the safety data sheet lorenzo.magaldi@faggi.it

1.4 Emergency telephone number 111 - Medical helpline operating in England, in Scotland (NHS 24) and in Wales (NHS Direct Wales)

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture according to Regulation (EC) n. 1272/2008

Hazard classes	Category codes	Danger indications
Aquatic Acute	1	H400
Aquatic Chronic	1	H410

2.2 Label elements

Pictograms



Signal word

WARNING

Hazard statements

H400 very toxic to aquatic organisms
H410 very toxic to aquatic organisms with longlasting effects

Precautionary advice

P273 Do not disperse in the environment
P391 Collect spillage
P501 Dispose of contents/container in accordance with current legislation d.lgs 152/2066 and d.lgs 4/2008

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- 2.3 Other hazards** It does NOT contain PBT / vPvB substances according to Regulation (EC) 1907/2006, annex XIII
It does NOT contain substances that interfere with the endocrine system in accordance with Regulation (EC) 1907/2006 art.59 paragraph 1 and in accordance with the criteria established in Regulation (EU) 2017/2100 and Regulation (EU) 2018/605.

3. COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 Substance: SILVER**
CAS number 7440-22-4
CE Number 231-131-3
INDEX Not available
ATE: LD50 orale > 5000 mg/kg,
LD50 dermico > 2000 mg/kg
LC 50 inalazione > 5.16 mg/L
Acute M factor 10
Cronic M factor : 10

4. FIRST AID MEASURES

4.1 Description of first aid measures

- | | |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation | In case of inhalation of dusts or fumes from combustion or heating, immediately take the injured person to fresh air. |
| Ingestion | do not give drinks even if the injured person is conscious. If the injured feel unwell, call a doctor immediately. |
| Contact with skin | cover any wounds with sterile gauze |
| Contact with eyes | rinse with plenty of running water for at least 15 minutes keeping the eyelids open (remove contact lenses if it is easy to do so). If irritation persists, consult a doctor. |

Recommendations:

- | | |
|--------------------------------------------------------------------------|-------------|
| • Need to see a doctor immediately | NO |
| • Possibility of delayed effects following exposure | YES |
| • Move the exposed individual from the place of exposure to the open air | YES |
| • Remove the clothing and shoes of the exposed individual | YES |
| • How to handle contaminated clothing | With gloves |
| • For first aiders, wear PPE | YES |

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

Consult a doctor immediately in case of persistent discomfort

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

- | | |
|--------------------------------|------------------------------------------------|
| Suitable extinguishing media | CO2 fire extinguishers, powder or water spray. |
| Unsuitable extinguishing media | high pressure air jets |

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- 5.2 Special hazards arising from the substance or mixture**
the substance does not produce dangerous substances if involved in a fire
- 5.3 Advice for firefighters**
no special clothing required. Use normal fire fighting procedures in relation to local circumstances.
- 6. ACCIDENTAL RELEASE MEASURES**
- 6.1 Personal precautions, protective equipment and emergency procedures**
- 6.1.1. For non-emergency personnel**
Leave contaminated area
- 6.1.2. For emergency responders**
isolate the area until complete collection of the substance
- 6.2 Environmental precautions**
Minimize the affected area by containing the leak. Collect the material and store it in a suitable container, pending disposal. Do not allow the spill to reach sewers or natural water courses and if it was not possible, immediately notify the competent authorities.
- 6.3 Methods and material for containment and cleaning up**
- 6.3.1. Advice in order to contain a spill**
Limit the spreading with sand, bentonite or similar. Collect with brooms or shovel.
- 6.3.2. Advice in order to clean-up a spill**
Wash contaminated area with water.
- 6.3.3 Other information**
None
- 6.4 Reference to other sections**
None
- 7. HANDLING AND STORAGE**
- 7.1. Precautions for safe handling**
- 7.1.1. Recommendations in order to manipulate the substance or the mixture in a safe manner, such as containment measures and prevention of fire and aerosol and powders formation**
Use the substance only in the presence of adequate ventilation and suction and with emergency eye washers nearby
- 7.1.2. General recommendation on work hygiene**
Do not eat, drink and smoke in work areas. Wash your hands after use. Remove contaminated clothing and protective equipment before entering eating areas
- 7.2. Conditions Safe storage, including any incompatibilities**
- 7.2.1. Risk management associated with explosive atmospheres, corrosive conditions, flammability hazards, incompatible substances or mixtures, evaporative conditions, potential ignition sources**
Keep containers sealed and labelled
- 7.2.2. Containment of the effects of weather conditions, pressure, temperature, sunlight, humidity and vibrations**
no precautions necessary
- 7.2.3. Conditions for keeping substances / mixtures intact**
Keep in cool and dry place
- 7.2.4. Provisions relating to ventilation, specific design of storage rooms or containers, quantitative limits in storage conditions, compatibility of packaging**
The storage rooms must be ventilated and closed

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- 7.3. Specific end use(s)**
Industrial use
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
- 8.1. Control parameters (related to metallic Silver species)**
MAK: 0,001 ng/m³
AGW: 0,1 E mg/m³
- 8.2. Exposure controls**
- 8.2.1. Appropriate engineering controls**
Use under a fume hood. Periodically check the range of the hood.
- 8.2.2. Individual protection measures, such as personal protective equipment**
- | | |
|--------------------------------|------------------------------------------------------------------------------------|
| Eye/face protection | Splash goggles compliant with Directive 89/686 / EEC and with standard EN166: 2001 |
| Skin protection (hands) | Gloves compliant with EN420 E374 norms |
| Skin protection (body) | Protective antiacid clothing compliant with UNI EN 13034: 2006 type 6 |
| Respiratory protection | Mask with P2 filters or P3 or self-contained breathing apparatus |
| Thermal hazards | Protective clothing compliant with UNI EN ISO 11612:2009 A1-B1-C1-E1 |
- 8.2.3. Environmental exposure controls**
Maintain suction in all environments where the substance is used.
Convey the aspirated volumes to an abatement system and then into the atmosphere.
Do not use recirculating air suction systems. Avoid any spillage into the environment.
- 9. PHYSICAL AND CHEMICAL PROPERTIES**
- 9.1 Information on basic physical and chemical properties**
- | | |
|----------------------------------------------------------|-----------------|
| Physical state | Dust |
| Color | Grey |
| Odor | Odorless |
| Melting point / freezing point | Not applicable |
| Boiling point or initial boiling point and boiling range | 962 °C |
| Flammability | 2187°C |
| Lower and upper explosive limits | Not explosive |
| Flash point | Not inflammable |
| Self-ignition temperature | Not applicable |
| Decomposition temperature | Not applicable |
| pH | Not applicable |
| Cinematic viscosity | Not applicable |
| Solubility | Insoluble |

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Production coefficient n-octanol / water (logarithmic value)	Not applicable
Vapor pressure	Not applicable
Density and / or relative density	5.34-10.5 g/cm ³
Relative vapor density	0.013 Pa a 840 ° C
Characteristics of the particles	The particle size parameters for the two representative samples of silver metal powders(non-nano PMC 1+2) are presented in the following format: Batch: D10 D50 D90; Mass Median Aereodynamic Diameter of airborne dust (geometric standard deviation): Batch PMC 1: 12 µm, 30 µm, 50 µm; 30.1 µm (1.7). Batch PMC 2:08 µm, 2 µm, 11 µm; 25.4 µm (2.8)

9.2. Other information

None

10. STABILITY AND REACTIVITY

10.1 Reactivity

The product is stable under normal environmental and temperature conditions

10.2 Chemical stability

the product does not decompose under normal environmental conditions of pressure and temperature

10.3 Possibility of hazardous reactions

None known

10.4 Conditions to avoid

Heating

10.5 Incompatible materials

Acetylene (danger of formation of explosive substances)

10.6 Hazardous decomposition products

None

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

LD50 (oral) > 5000 mg/kg bw

LD50 (skin) >2000 mg/kg bw

LC50 (inhalation) > 5.16 mg/L

Skin corrosion / irritation

Based on available data, the classification criteria are not met

Serious eye damage/irritation

Based on available data, the classification criteria are not met

Respiratory or skin sensitization

Based on available data, the classification criteria are not met

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	Germ cell mutagenicity	Based on available data, the classification criteria are not met
	Carcinogenicity	Not classified, based on reg. (EC) no.1272/2008 ("CLP") , annex I, part 3.6.
	Reproductive toxicity	Based on available data, the classification criteria are not met
	STOT – single exposure	No data available
	STOT – repeated exposure	NOAEC (inhalation): 133 µg/m ³
11.2	Information on other hazards	
	None	
12.	ECOLOGICAL INFORMATION	
12.1	Toxicity	PNEC aqua (freshwater) 0.04 µg/L PNEC aqua (marine water) 0.86 µg/L PNEC STP 0.025 mg/L PNEC sediment (freshwater) 438.13 mg/kg sediment dw PNEC sediment (marine water) 438.13 mg/kg sediment dw PNEC soil 1.41 mg/kg soil dw LC50 96 h (fish) 1.2 µg/L The 28 day NOEC (mortality and growth) is 130 µg dissolved Ag/L
12.2	Persistence and degradability	Non degradable
12.3	Bioaccumulative potential	Log Pow =- N/A
12.4	Mobility in soil	scientifically not justified studies
12.5	Results of PBT and vPvB assessment	No PBT nor vPvB
12.6	Endocrine disrupting properties	The substance is currently being evaluated as an endocrine disruptor
12.7	Other adverse effects	No effect known
13.	DISPOSAL CONSIDERATIONS	
13.1.	Waste treatment methods	dispose of both the substance and its packaging as hazardous waste and deliver them to an authorized facility
14.	TRANSPORT INFORMATION	
14.1	UN number or ID number	3077
14.2	UN proper shipping name	environmentally hazardous material, solid, n.o.s (silver powder)
14.3	Transport hazard class(es)	9
14.4	Packing group	III
14.5	Environmental hazards	yes
14.6	Special precautions for user	Not available
14.7	Maritime transport in bulk according to IMO instruments	Not available
15.	REGULATORY INFORMATION	

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

Applicability

Reg. (EC) 1907/2006 / EC Reach	YES
Reg. (EC) 1272/2008 CLP and subsequent changes and additions	YES
Reg. (CE) 2037/2000 "Substances that deplete the ozone layer"	NO
Reg. (EC) 850/2004 "Persistent organic pollutants"	NO
Reg. (EC) 689/2008 "export and import of dangerous chemicals"	NO
Substance listed in Annex I of Dir. 2012/18 / EU so-called Seveso	YES
Legislative Decree 81/2008 Consolidated Law on health and safety at work	YES
Directive 2014/103 / EU "Adr"	YES
Reg. (CE) 1907/2006/CE Reach art. 59 – Candidate List of Substances of Very High Concern (SVHC)	NO
Reg. (CE) 1907/2006/CE Reach - Annex XIV – Authorisation List	NO
Reg. (CE) 1907/2006/CE Reach - Annex XVII – Restriction List	NO
https://echa.europa.eu/it/substances-restricted-under-reach	

15.2 Chemical safety assessment

A chemical safety assessment was not carried out

16.

OTHER INFORMATION

Changes compared to the previous edition

Regulamentary update

Acronim and abbreviation legend

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

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstract Service

Main references and data sources

ECHA's data bank on registered substances and soon to be registered substances:

<http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances>

Adequate training for workers in order to ensure the protection of human health and the environment

- Chemical Risk Training pursuant to Legislative Decree 81/08 Title IX dangerous substances
- DPI training