Safety Data Sheet

Silver powder

Revision Date: 10/29/2018
Date Issued: 10/29/2018

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

Product name	Silver powder
Product code	NM-0038
CAS	7440-22-4
REACH No. :	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
Identified uses	Laboratory chemicals, Manufacture of substances
Supplier	IoLiTec Ionic Liquids Technologies GmbH Salzstrasse 184 D – 74076 Heilbronn Germany
Telephone	+49 (0)7131-89839-0
Fax	+49 (0)7131-89839-109
Emergency telephone	+49 (0)176-84850874
Email	msds@iolitec.de

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.

Not a dangerous substance according to GHS.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008, GHS)

Not a dangerous substance according to GHS.

Label for supply none

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray .
P280	Wear protectic gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338: IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P273	Avoid release to the environment.

Labelling (67/548/EEC or 1999/45/EC)

Label for supply none

S-phrase(s)

S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.

Caution - substance not yet tested completely.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient name	Contents	Health(Class)	Risk(R/No.)
Silver coated with fatty acid	99.9%	Substance not yet fully tested!	

Formula
Ag

Molecular Weight
107.87 g/mol

4 FIRST AID MEASURES

General	Contaminated clothing should be removed and washed before being reused.
Inhalation	Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/ oxygen.
Ingestion	Immediately rinse mouth and provide fresh air. Get medical attention immediately.
Skin	Wash the skin immediately with water.
Eyes	Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention immediately. Continue to rinse for at least 15 minutes.

5 FIRE FIGHTING MEASURES

Extinguishing media	Use: Fire-extinguishing powder. Dry sand.
Special risks	Flammable powder. Emission of toxic fumes under fire conditions possible.
Protective measures in fire	Wear self-contained breathing apparatus and protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions during spill	Evacuate area. Shut off all heat or ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Wear self-contained breathing apparatus, rubber boots and gloves.

Spill cleanup methods	Avoid contact with skin or inhalation of spillage, dust or vapor, Avoid dust formation. Collect and reclaim or dispose in sealed containers in license waste.

7 HANDLING AND STORAGE

Usage precautions	Handle under dry Argon. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks and open flame. Do not use in confined spaces without adequate ventilation and/or respirator.
Storage precautions	Store in a closed container at moderate temperatures in dry, well ventilated area. Protect against electrostatic charges.
Special storage criteria	Pressure development possible. Store away from acids and alkalies.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Exposure limits

RECOMMENDATIONS OF MAK-COMMISSION
This data is recommended by scientific experience and is not established law.
0.1 mg/m³ with reference to the inhalable fraction Limitation of exposure peaks:
Excursion factor 8 Duration 15 min, mean; 4 times per shift; interval 1 hour
Pregnancy: Group D
A classification according to groups A-C is not possible, because either there is no data available or the available data is insufficient for a final evaluation.

9 PHYSICAL AND CHEMICAL PROPERTIES

Color	grey
Odor/taste	No characteristic odor.
Melting Point	960.8°C
Boiling Point	2210°C
Density	10.491 g/cm^3 (20°C)
Solubility in water	Insoluble

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10 STABILITY AND REACTIVITY

Hazardous chemical reactions:
Silver in it's solid state is stable and non-combustible, the powder is combustible and reactive. Explosive silver acetylide can be generated by reaction of acetylene with silver powder and even with the solid metal. In reaction with ammonia and hydrazine, explosive compounds can be formed, especially with silversalt solutions. Peroxides, ozonides and other oxidants can be decomposed by silver powder. Various silver compounds, especially, when dry, are explosive.

Risk of explosion in contact with:
acetylene compounds; ammonia compounds; aziridine; bromine azide; 1-bromo-3-propyne; ethanol + nitric acid; ethylenehydroperoxide; ethylene oxide; oxalic acid (heat); tartaric acid (heat);

The substance can react dangerously with:
halogens, nitric acid, chlorine trifluoride; iodoform; conc. sulphuric-acid;

11 TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral – rat – male > 5.000 mg/kg
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
no data available

Reproductive toxicity
no data available
Specific target organ toxicity - single exposure
no data available
Specific target organ toxicity - repeated exposure
no data available
Aspiration hazard
no data available
Subacute to chronic toxicity
Absorption of silver compounds by ingestion, inhalation or through broken skin can cause argyria, a permanent bluish-grey discoloration of the skin, conjustiva and mucous membranes.

Potential health effects

Ingestion	no data available
Inhalation	no data available
Skin	no data available
Eyes	no data available

Additional Information
RTECS: Not available
Full Data on the toxicity of this product are not available. Hazardous properties cannot be excluded.

12 ECOLOGICAL INFORMATION

LC50 Fish (96 hours)

Minimum:	0,00213 mg/l
Maximum:	58 mg/l
Median:	0,00807 mg/l
Study number:	26

Reference for median: Klaine, S.J., T.W. La Point, G.P. Cobb, B.L. Forsythe II, T.P. Bills, M.D. Wenholz, and R.D. Jeffers 1996. Influence of Water Quality Parameters on Silver Toxicity: Preliminary Result. In: A.W.Andren and T.W.Bober (Eds.), 3rd Int.Conf.Proc.Transport, Fate and Effects of Silver in the Environment, Aug.6-9, 1995, Washington, D.C. :65-77; Goettl, J.P.Jr., P.H. Davies, and J.R. Sinley 1976. Water Pollution Studies. In: D.B.Cope (Ed.), Colorado Fish.Res.Rev.1972-1975, DOW-R-R-F72-75, Colorado Div.of Wildl., Boulder, CO :68-75

LC50 Crustaceans (48 hours)

Minimum:	0,0015 mg/l
Maximum:	4,5 mg/l
Median:	0,015 mg/l
Study number:	7

Reference for median: Mount, D.I., and T.J. Norberg 1984. A Seven-Day Life-Cycle Cladoceran Toxicity Test. Environ.Toxicol.Chem. 3(3):425-434 (Author Communication Used)

EC50 Crustaceans (48 hours)

Minimum:	0,00024 mg/l
Maximum:	0,0095 mg/l
Median:	0,0092 mg/l
Study number:	3

Reference for median: Office of Pesticide Programs 2000. Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)). Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.

EC50 Algae (72 or 96 hours)

Test duration:	96	Stunden
Minimum:	0,00163 mg/l	
Maximum:	0,00234 mg/l	
Median:	0,00198 mg/l	
Study number:	2	

Reference for median: Hiriart-Baer, V.P., C. Fortin, D.Y. Lee, and P.G.C. Campbell 2006. Toxicity of Silver to Two Freshwater Algae, Chlamydomonas reinhardtii and Pseudokirchneriella subcapitata, Grown Under Continuous Culture Conditions: Influence of Thiosulphate. Aquat.Toxicol. 78(2):136-148

Safety Data Sheet

Silver powder

Revision Date: 10/29/2018
Date Issued: 10/29/2018

13 DISPOSAL CONSIDERATIONS

Disposal method Non-hazardous waste according to Waste Catalogue Ordinance (AVV). If there is no way of recycling it must be disposed of in compliance with the respective national and local regulations.

14 TRANSPORT INFORMATION

General	Not classified as dangerous for transport purposes.
Road transport notes	Not classified as dangerous for road transport.
Rail transport notes	Not classified as dangerous for rail transport.
Sea transport notes	Not classified as dangerous for sea transport.
Air transport notes	Not classified as dangerous for air transport.

15 REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

Classification according to German Regulation KBwS:
Reg.no. 979: German Regulation WGK 1 (Water hazard class 1)
severe hazard to waters. Do not allow to enter waters, waste water, or soil.

Safety Data Sheet

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16 OTHER INFORMATION

DISCLAIMER

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