

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.11.2015

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Silver Chloride, Reagent Grade

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : Silver Chloride, Reagent Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25524

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



Environmentally Damaging

Chronic hazards to the aquatic environment, category 1
Acute hazards to the aquatic environment, category 1



Corrosive

Corrosive to metals, category 1

Aquatic Chronic Toxicity 1

Corrosive to Metals 1

Aquatic Acute Toxicity 1

Signal word :Warning

Hazard statements:

May be corrosive to metals

Very toxic to aquatic life with long lasting effects

Precautionary statements:

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

Do not eat, drink or smoke when using this product

Keep only in original container

Avoid release to the environment

Collect spillage

Absorb spillage to prevent material damage

Store in corrosive resistant stainless steel container with a resistant inner liner

Dispose of contents and container as instructed in Section 13

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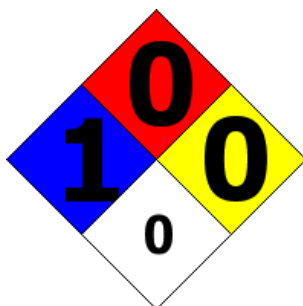
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Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 7783-90-6	Silver Chloride, ACS	100 %
Percentages are by weight		

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

After skin contact: Seek medical advice if discomfort or irritation persists. Rinse/flush exposed area gently using water for 15-20 minutes.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention immediately.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Targets eyes, skin, mucous membranes. Irritation- all routes of exposure. Causes respiratory tract irritation. May cause eye and skin irritation. May cause digestive tract irritation with nausea, vomiting, and diarrhea. Headache, Shortness of breath. Burning of eyes. Redness, tearing; Chronic inhalation or ingestion of silver salts may cause argyria characterized by a permanent blue-gray discoloration of the eyes, skin, mucous membranes, and internal organs.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. The use of a metal chelator should be

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determined only by qualified medical personnel

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:

Other toxic vapors include zinc and sulfur oxides. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes

Advice for firefighters:

Protective equipment: Use NIOSH-approved respiratory protection/breathing apparatus. Wear protective clothing and equipment.

Additional information (precautions): Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Do not allow fire protection water to enter sewer or discharge to open water. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. This material is very toxic to aquatic life with long lasting effects.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Keep away from combustibles. Use spark-proof tools and explosion-proof equipment. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Collect liquids using vacuum or by use of non-combustible absorbents.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Collect solids in powder form using vacuum with (HEPA filter). Avoid dust formation

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid dust formation

Conditions for safe storage, including any incompatibilities:

The product has a corrosive effect on steel and aluminum. Store only in original container. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store in cool, dry conditions in well sealed containers. Do not store near combustible materials or strong bases.

SECTION 8 : Exposure controls/personal protection

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Control Parameters:

, Silver (metal dust and soluble compounds, as Ag), NIOSH IDLH: 10 mg/m³ (as Ag)
, Silver (metal dust and soluble compounds, as Ag), NIOSH REL: TWA (as Ag) 0.01 mg/m³
, Silver (metal dust and soluble compounds, as Ag), OSHA PEL: TWA (as Ag) 0.01 mg/m³
, Silver (metal dust and soluble compounds, as Ag), ACGIH TLV: (metal): 0.1 mg/m³

Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. For spills, respiratory protection may be advisable. Use suitable respiratory protective device when dust or mist is formed. Powered, air-purifying respirator with a high-efficiency particulate filter or continuous-flow mode or SCBA

Protection of skin:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. Wear protective equipment to prevent contact with skin, eyes, or hair. Wear protective clothing

Eye protection:

Safety glasses with side shields or goggles.

General hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin. Launder clothing that has come in contact with the substance before reuse

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	White solid	Explosion limit lower: Explosion limit upper:	Not determined Not determined
Odor:	Odorless	Vapor pressure:	The vapour pressure of silver chloride is negligible at ambient temperatures; 1Pa at 670°C, 10 pa at 769°C, 100Pa at 873°C 1kPa at 1052°C 10kPa at 1264°C and 100kPa at 1561°C
Odor threshold:	Not determined	Vapor density:	Not determined
pH-value:	~6 (1% soln/water)	Relative density:	Not determined
Melting/Freezing point:	455°C (851.00°F)	Solubilities:	Soluble in water. 1.9mg/L at 25°C.

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Boiling point/Boiling range:	1550°C (2,822°F)	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not applicable	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid,gaseous):	Not applicable	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density: 5.54 at 20C Specific Gravity: :5.56			

SECTION 10 : Stability and reactivity

Reactivity: Nonreactive under normal conditions.

Chemical stability: No decomposition if used and stored according to specifications.

Possible hazardous reactions: None under normal processing

Conditions to avoid: Dust. Excess heat. Incompatible materials. Contamination. heating to decomposition

Incompatible materials: Ammonia, aluminum, bromine trifluoride, potassium sodium, and sodium peroxide+ charcoal

Hazardous decomposition products: Chlorine, silver fumes

SECTION 11 : Toxicological information

Acute Toxicity:		
Oral:	7761-88-8	LD50 oral-rat 1173 mg/kg
Chronic Toxicity: No additional information.		
Corrosion Irritation:		
Ocular:	Section 2	Classified as eye damage
Dermal:	Section 2	Classified as a skin irritant
Ocular:	Section 2	Classified as an eye irritant
Sensitization:		No additional information.
Single Target Organ (STOT):		No additional information.
Numerical Measures:		No additional information.
Carcinogenicity:		Not listed as a carcinogen (ACGIH, IARC, NTP): Silver Nitrate
Mutagenicity:		No additional information.
Reproductive Toxicity:		No additional information.

SECTION 12 : Ecological information

Ecotoxicity

Fish (acute Silver): : LC50 (96 hr) Pimephales promelas (fathead minnow) 510 ug/l

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Fish acute (silver): : LC50 (96h) P. promelas (aged 1-4 days) 1.2 µg dissolved Ag/L

Fish acute (silver): : LC50 (96h) P. promelas (aged 41 days) 10.4 µg dissolved Ag/L

Fish chronic (silver): : EC10 (mortality)196 day O. mykiss 0.17 ug dissolved Ag/L

Algae acute (7783-90-6 AgCl): EC10 (15 d) (yield) Nostoc muscorum 0.57 µg Ag/L

Persistence and degradability:

Bioaccumulative potential:

Mobility in soil:

Other adverse effects: Very toxic to aquatic life with long lasting effects

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

SECTION 14 : Transport information

UN-Number

1493

UN proper shipping name

Silver Nitrate

Transport hazard class(es)

Packing group:II

Environmental hazard:

Transport in bulk:

Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Reactive, Acute

SARA Section 313 (Specific toxic chemical listings):

7783-90-6 Silver Compounds (N740)

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

Silver Compounds No RQ assigned

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

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Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients is listed

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

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