Material Safety Data Sheets

Revision 3

1. IDENTIFICATION

Product Name	**Silver nitrate**
Other Names	silver(I) nitrate; Argenti nitras; Nitric acid, silver salt
Uses	No Data Available
Chemical Family	No Data Available
Chemical Formula	$AgNO_3$
Chemical Name	No Data Available
Product Description	No Data Available
Company	**Arman sina.co**
Contact Information	info@armansina.com **www.armansina.com**

2. HAZARD IDENTIFICATION

Hazard Categories

Acute Toxicity -Oral	Category 4
Skin Corrosion/Irritation	Category 1 Sub-category B
Serious Eye Damage/Eye Irritation	Category 1
Oxidizing solids	Category 2

Signal Word

No Data Available

Hazard Statements

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H272	May intensify fire; oxidizer

Precautionary Statements

Prevention

P260	Do not breathe dust/fume/gas/mist/vapors/spray
P264	Wash face, hands and any exposed skin thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P280	Wear protective gloves/protective clothing/eye protection/face protection

Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310	Immediately call a POISON CENTER or doctor/physician
P321	Specific treatment (see supplemental first aid instructions on this label)
P330	Rinse mouth
P363	Wash contaminated clothing before reuse

Storage

P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

symbol

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Silver nitrate	$AgNO_3$	7761-88-8	95-100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Consult a physician.

Eye Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician..

Inhaled Move to fresh air. If not breathing, give artificial respiration. Consult a physician.

Advice to Doctor Consult a doctor in case of discomfort showing the SDS for the product.

5. FIRE FIGHTING MEASURES

General Measures No Data Available

Flammability Conditions No Data Available

Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water Spray or Fog.

Fire and Explosion Hazard Oxidizing material. In case of fire and/or explosion do not breathe fumes.

Hazardous Products of Combustion Contact with metals may evolve flammable hydrogen gas. Fire may produce irritating, corrosive and/or toxic gases. Nitrogen oxides (NOx). Silver/Silver oxide. Container explosion may occur under fire conditions.

Special Fire Fighting Instructions Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out..

Personal Protective Equipment Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Flash Point No Data Available

Lower Explosion Limit No Data Available

Upper Explosion Limit No Data Available

Auto Ignition Temperature No Data Available

Hazchem Code No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Clear spills immediately.
Clean Up Procedures	Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
Containment	Prevent further leakage or spillage if safe to do so.
Decontamination	No Data Available
Environmental Precautionary Measures	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Evacuation Criteria	No Data Available
Personal Precautionary Measures	Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

7. HANDLING AND STORAGE

Handling	Use personal protective equipment as required. Do not breathe mist or vapor. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the SDS for Personal Protective Equipment. Avoid contact with eyes. Avoid contact with skin.
Storage	Keep container tightly closed in a dry and well-ventilated place. Protect from light. Protect from moisture. **Incompatible Products :** Chlorides. Carbonates. Isocyanates. Ferrous Salts. Chlorosulfonic Acid. Arsenic Powder. Fluorine. Sodium chlorate. Reaction with Acetaldehyde, Acetylene or other terminal alkynes may produce explosive compounds. A dry mixture of powdered magnesium and silver nitrate has been reported to ignite explosively on contact with a drop of water. A mixture with charcoal ignites when struck ,while mixtures with phosphorous or sulfer explode when struck. passage of phoshine gas into a solution of silver nitrate resulted in an explosion..
Container	Keep container tightly closed and in a well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
Exposure Limits	No information available.
Biological Limits	No information available.
Engineering Measures	Technical measures and the application of suitable work processes have priority over personal protection equipment. Showers; Eyewash stations; Ventilation systems.
Personal Protection Equipment	Eye/Face Protection Safety glasses with side-shields. Face-shield. Skin and Body Protection Wear protective gloves/clothing. Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Special Hazards Precaustions	No Data Available
Work Hygienic Practices	Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Crystalline Powder
Appearance	Fine White
Odour	No Data Available
Colour	White
pH	5.4-6.4 (10% H_2O, 20 ° C)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	444 ° C (decomposition)
Melting Point	212 °C
Freezing Point	No Data Available
Solubility	Solubility in water: 2160 g/l (20°C)
Specific Gravity	No Data Available
Flash Point	No information available.
Auto Ignition Temp	No Data Available
Evaporation Rate	No information available.
Bulk Density	2350 kg/ m3
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	4.35 g/cm³(20° C)
Specific Heat	No Data Available
Molecular Weight	169.87 g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.

Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	No information available.
Reactions That Release Gases or Vapours	No information available.
Release of Invisible Flammable Vapours and Gases	No information available. No information available.

10. STABILITY AND REACTIVITY

General Information	No dangerous reaction known under conditions of normal use.
Chemical Stability	Stable; however, may decompose if heated.
Conditions to Avoid	Heat. Sunlight. Contact with combustibles. Contact with incompatible materials.
Materials to Avoid	Organic compounds. Sulfur oxides. Alkalies.
Hazardous Decomposition Products	Nitrogen Oxides May decompose upon heating to produce corrosive and/or toxic fumes.
Hazardous Polymerisation	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

General Information	**Product Information** **Inhalation** Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns. **Eye Contact** Corrosive to the eyes and may cause severe damage including blindness. **Skin Contact** Contact causes severe skin irritation and possible burns. **Ingestion** Harmful if swallowed..
Acute	Acute toxicity (list all possible routes of exposure) Oral Product: LD 50 (Rat): 3,702 - 3,970 mg/kg Dermal Product: No data available. Inhalation Product: No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Very toxic to aquatic life with long lasting effects.
Persistence/Degradability	No Data Available
Mobility	The product is water soluble and may spread in water systems.
Environmental Fate	Acute hazards to the aquatic environment: Fish Product: No data available. Specified substance(s): Silver nitrate LC 50 (Fathead minnow (Pimephales promelas), 96 h): 0.00181 - 0.0111 mg/l LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 0.002936 - 0.0119 mg/l LC 50 (Bluegill (Lepomis macrochirus), 96 h): 0.009 - 0.07 mg/l
Bioaccumulation Potential	No Data Available
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Since emptied containers retain product residue, follow label warnings even after container is emptied.
Special Precautions for Land Fill	Dispose of material in accordance with all federal, state, and local regulations.

14. TRANSPORT INFORMATION

Land Transport

Proper Shipping Name	Silver nitrate
Class	5.1
Subsidiary Risk(s)	No Data Available
EPG	No Data Available
UN Number	UN 1493
Hazchem	No Data Available
Pack Group	II
Special Provision	No Data Available

Sea Transport

Proper Shipping Name	Silver nitrate
Class	5.1
Subsidiary Risk(s)	No Data Available
UN Number	UN 1493
Hazchem	No Data Available
Pack Group	II
Special Provision	No Data Available
EMS	No Data Available

Marine Pollutant	Marine pollutants when transported in single or combination packagings containing a net quantity per single or inner packaging of 5 Kg or less for solids are not subject to any other provisions of the IATA regulations relevant to marine pollutants provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Air Transport

Proper Shipping Name	Silver nitrate
Class	5.1
Subsidiary Risk(s)	No Data Available
UN Number	UN 1493
Hazchem	No Data Available
Pack Group	II
Special Provision	No Data Available

15. OTHER INFORMATION

Revision	3
Key/Legend	**< Less Than** **> Greater Than** **AICS Australian Inventory of Chemical Substances** **atm Atmosphere** **CAS Chemical Abstracts Service (Registry Number)** **cm² Square Centimetres** **CO2 Carbon Dioxide** **COD Chemical Oxygen Demand** **deg C (° C) Degrees Celcius** **deg F (° F) Degrees Farenheit** **g Grams** **g/cm³ Grams per Cubic Centimetre** **g/l Grams per Litre** **HSNO Hazardous Substance and New Organism** **IDLH Immediately Dangerous to Life and Health** **immiscible Liquids are insoluable in each other.** **inHg Inch of Mercury** **inH2O Inch of Water** **K Kelvin** **kg Kilogram** **kg/m³ Kilograms per Cubic Metre** **lb Pound** **LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50%** (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. **LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one** half) of a group of test animals. **ltr or L Litre** **m³ Cubic Metre** **mbar Millibar** **mg Milligram** **mg/24H Milligrams per 24 Hours** **mg/kg Milligrams per Kilogram** **mg/m³ Milligrams per Cubic Metre** **Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.** **mm Millimetre** **mmH2O Millimetres of Water** **mPa.s Millipascals per Second** **N/A Not Applicable** **NIOSH National Institute for Occupational Safety and Health** **NOHSC National Occupational Heath and Safety Commission** **OECD Organisation for Economic Co-operation and Development** **Oz Ounce** **PEL Permissible Exposure Limit** **Pa Pascal** **ppb Parts per Billion** **ppm Parts per Million** **ppm/2h Parts per Million per 2 Hours** **ppm/6h Parts per Million per 6 Hours** **psi Pounds per Square Inch** **R Rankine** **RCP Reciprocal Calculation Procedure** **STEL Short Term Exposure Limit** **TLV Threshold Limit Value** **tne Tonne** **TWA Time Weighted Average** **ug/24H Micrograms per 24 Hours** **UN United Nations** **wt Weight**