SAFETY DATA SHEET

Revision date 26-May-2022

1. Identification		
Product identifier		
Product Name	SILVER NITRATE, TECHNICAL	
Other means of identification		
Product Code(s)	S1086	
UN/ID no	UN1493	
Synonyms	None	
Recommended use of the chemical and restrictions on use		
Recommended use	No information available	
Restrictions on use	No information available	
Details of the supplier of the safety	v data sheet	
<u>Supplier Address</u> Spectrum Chemical Mfg. Corp. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000		
Emergency telephone number		
Emergency Telephone	Chemtrec 1-800-424-9300	

2. Hazard(s) identification

Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Oxidizing solids	Category 2

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

Harmful if swallowed Causes severe skin burns and eye damage



Revision Number 2

Causes damage to organs through prolonged or repeated exposure May intensify fire; oxidizer



Odor Odorless

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling Do not eat, drink or smoke when using this product Wear protective gloves/protective clothing/eye protection/face protection Do not breathe dust/fume/gas/mist/vapors/spray Keep away from heat Keep/Store away from clothing/ combustible materials Take any precaution to avoid mixing with combustibles

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower Wash contaminated clothing before reuse IF INHALED: Remove person to fresh air and keep comfortable for breathing Immediately call a POISON CENTER or doctor IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell Rinse mouth Do NOT induce vomiting In case of fire: Use CO2, dry chemical, or foam to extinguish

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

No information available.

3. Composition/information on ingredients

Substance

Chemical name	CAS No	Weight-%	Trade secret
Silver Nitrate	7761-88-8	100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.	
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.	
Skin contact	IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. Get immediate medical advice/attention.	
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.	
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.	
Most important symptoms and effe	ffects, both acute and delayed	
Symptoms	Burning sensation.	
Indication of any immediate medical attention and special treatment needed		
Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.	

5. Fire-fighting measures			
Suitable Extinguishing Media	Use water. Do not use dry chemicals or foams. CO 2 or Halon may provide limited control. Flood fire area with water from a distance. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out.		
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.		
Unsuitable extinguishing media	Dry chemical. Foam.		
Specific hazards arising from the chemical	These substances will accelerate burning when involved in a fire. Some may decompose explosively when heated or involved in a fire. May ignite combustibles (wood paper, oil, clothing, etc.). Runoff may create fire or explosion hazard. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.		
Explosion data Sensitivity to mechanical impact none.			
Sensitivity to static discharge	yes.		
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. Do not move cargo or vehicle if cargo has been exposed to heat. oxidizer. May ignite combustibles (wood paper, oil, clothing, etc.). Move containers from fire area if you can do it without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.		

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See section 8 for more information. Stop leak if you can do it without risk. Attention! Corrosive material. Use personal protective equipment as required.
Other information	Keep combustibles (wood, paper, oil, etc) away from spilled material. DO NOT GET WATER INSIDE CONTAINERS. Ventilate the area. Refer to protective measures listed in Sections 7 and 8.
Methods and material for containm	ent and cleaning up
Methods for containment	Stop leak if you can do it without risk. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
Methods for cleaning up	With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Flush area with flooding quantities of water. Prevent product from entering drains. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

7. Handling and storage

Precautions for safe handling

Advice on safe handlingUse personal protection equipment. Avoid contact with skin, eyes or clothing. Keep away
from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do
not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.
Handle in accordance with good industrial hygiene and safety practice. In case of
insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed
system or provide appropriate exhaust ventilation. Take off contaminated clothing and wash
before reuse.Conditions for safe storage, including any incompatibilities

Storage ConditionsKeep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly
labeled containers. Do not store near combustible materials. Store in accordance with the
particular national regulations. Store in accordance with local regulations. Keep out of the
reach of children. Protect from moisture. Store locked up. Store away from other materials.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Appropriate engineering controls

Engineering controls

Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles. Face protection shield.	
Hand protection	Wear suitable gloves. Impervious gloves.	
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Wear fire/flame resistant/retardant clothing.	
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.	
General hygiene considerations	Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.	

9. Physical and chemical properties

Information on basic physical and o Physical state Appearance Color Odor Odor threshold	chemical properties Solid Crystals Colorless; White Odorless No information available	
<u>Property</u> pH Melting point / freezing point Boiling point / boiling range Flash point Evaporation rate	<u>Values</u> 6-7 212 °C / 413.6 °F 440 °C / 824 °F no data available no data available	Remarks • Method None known None known None known None known None known
Flammability (solid, gas) Flammability Limit in Air Upper flammability or explosive limits Lower flammability or explosive	no data available No data available No data available	None known None known
limits Vapor pressure Vapor density Relative density Water solubility	No data available 5.8 4.35 Easily soluble in hot water	None known None known None known None known
Solubility(ies) Partition coefficient Autoignition temperature Decomposition temperature Kinematic viscosity Dynamic viscosity	Easily soluble in cold water Very slightly soluble in acetone No data available no data available no data available No data available	None known None known None known None known None known None known
Other information Explosive properties Oxidizing properties Softening point Molecular weight VOC Content (%) Liquid Density Bulk density	No information available No information available No information available 169.87 No information available No information available No information available	

10. Stability and reactivity

Reactivity	Oxidizer.	
Chemical stability	May cause fire or explosion; strong oxidizer.	
Possibility of hazardous reactions	None under normal processing.	
Conditions to avoid	Heat, flames and sparks. Incompatible materials. Exposure to air or moisture over prolonged periods.	
Incompatible materials	Organic material. Combustible material. Hydrocarbons. Acids. Bases. Oxidizing agent.	
Hazardous decomposition products None known based on information supplied.		

11. Toxicological information

Information on likely routes of exposure

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.
Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.
Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

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Symptoms

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Numerical measures of toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Silver Nitrate	= 1173 mg/kg (Rat)	-	-
7761-88-8			

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Classification based on data available for ingredients. Causes burns.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Risk of serious damage to eyes.
	Causes burns.
Respiratory or skin sensitization	No information available.

Germ cell mutagenicity Carcinogenicity

No information available. No information available.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Silver Nitrate	-	Group 2A - Probably	-	-
7761-88-8		carcinogenic to humans -		
		Monograph 94 [2010]		
		(covers ingested nitrates		
		under conditions that		
		result in endogenous		
		nitrosation)(for nitrates)		

Legend

Reproductive toxicity	No information available.
STOT - single exposure STOT - repeated exposure Target organ effects	No information available. Causes damage to organs through prolonged or repeated exposure. Eyes, Skin, Nasal Septum.
Aspiration hazard	No information available.
Other adverse effects	No information available.
Interactive effects	No information available.

12. Ecological information

Ecotoxicity

Ecotoxicity	•			-
Chemical name	Algae/aquatic plants	Fish	Toxicity to	Crustacea
			microorganisms	
Silver Nitrate	-	LC50: 0.001339 -	-	EC50: 0.0008 -
7761-88-8		0.001637mg/L (96h,		0.001mg/L (48h, Daphnia
		Oncorhynchus mykiss)		magna) EC50: 0.0008 -
		LC50: 0.00181 -		0.0011mg/L (48h,
		0.00214mg/L (96h,		Daphnia magna) EC50:
		Pimephales promelas)		=0.0006mg/L (48h,
		LC50: 0.00452 -		Daphnia magna)
		0.00638mg/L (96h,		
		Pimephales promelas)		
		LC50: 0.00512 -		
		0.00787mg/L (96h,		
		Poecilia reticulata) LC50:		
		0.0064 - 0.0106mg/L		
		(96h, Pimephales		
		promelas) LC50: 0.00839		
		- 0.1802mg/L (96h,		
		Oncorhynchus mykiss)		
		LC50: 0.009 - 0.02mg/L		
		(96h, Lepomis		
		macrochirus) LC50:		
		0.0242 - 0.0484mg/L		
		(96h, Lepomis		
		macrochirus) LC50: 0.05		
		- 0.07mg/L (96h, Lepomis		
		macrochirus) LC50:		
		=0.0027mg/L (96h,		
		Cyprinus carpio) LC50:		
		=0.0075mg/L (96h,		
		Oncorhynchus mykiss)		
		LC50: =0.009mg/L (96h,		
		Pimephales promelas)		
L				

Persistence and degradability Bioaccumulation

No information available. Inherently biodegradable. No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. Transport information

DOT

UN/ID no Proper Shipping Name: Hazard class Packing group: Special Provisions Marine Pollutant Description: Emergency Response Guide Number	UN1493 Silver nitrate 5.1 II IB8, IP2, IP4, T3, TP33 Severe Marine Pollutant UN1493, Silver nitrate, 5.1, II 140
<u>TDG</u> UN-No: Proper Shipping Name: Hazard class Packing Group: Description:	UN1493 Silver nitrate 5.1 II UN1493, Silver nitrate, 5.1, II
<u>MEX</u> UN-No Proper Shipping Name Hazard class Packing Group Description	UN1493 Silver nitrate 5.1 II UN1493, Silver nitrate, 5.1, II
ICAO (air) UN-No: Proper Shipping Name: Hazard class Packing Group: Description:	UN1493 Silver nitrate 5.1 II UN1493, Silver nitrate, 5.1, II
IATA UN number Proper Shipping Name: Transport hazard class(es) Packing group Description:	UN1493 Silver nitrate 5.1 II UN1493, Silver nitrate, 5.1, II
IMDG UN number Proper shipping name Transport hazard class(es) Packing group EmS-No Marine pollutant	UN1493 Silver nitrate 5.1 II F-A, S-Q P

Description	UN1493, Silver nitrate, 5.1, II, Marine pollutant
<u>RID</u> UN number Proper Shipping Name: Transport hazard class(es) Packing group Classification code Description: Labels	UN1493 Silver nitrate 5.1 II O2 UN1493, Silver nitrate, 5.1, II, ENVIRONMENTALLY HAZARDOUS 5.1
ADR UN number Proper Shipping Name: Transport hazard class(es) Packing group Classification code Tunnel restriction code Description: Labels	1493 Silver nitrate 5.1 II O2 (E) 1493, Silver nitrate, 5.1, II, (E), ENVIRONMENTALLY HAZARDOUS 5.1
ADN UN/ID No Proper shipping name Transport hazard class(es) Packing Group Classification code Description Hazard label(s) Limited quantity (LQ) Equipment Requirements	UN1493 Silver nitrate 5.1 II O2 UN1493, Silver nitrate, 5.1, II, ENVIRONMENTALLY HAZARDOUS 5.1 1 kg PP

15. Regulatory information

International Inventories

TSCA

Complies

DSL/NDSL EINECS/ELINCS	Complies Complies
ENCS	This product complies with ENCS:
IECSC	This product complies with China:
KECL	Complies
PICCS	Complies
AICS	All the constituents of this material are listed on the Australian Inventory of Chemical
	Substances (AICS).

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances **ENCS** - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %	
Silver Nitrate - 7761-88-8	1.0	

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Silver Nitrate	1 lb final RQ	-
7761-88-8	0.454 kg final RQ	

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Silver Nitrate	1672	Present	Environmental hazard
7761-88-8			

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA Health hazards 3 Flammability 0 Instability 1 Physical and chemical properties OX HMIS Health hazards 3* Flammability 0 Physical hazards 1 Personal protection X Chronic Hazard Star Legend * = Chronic Health Hazard Key or legend to abbreviations and acronyms used in the safety data sheet Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION TWA (time-weighted average) STEL STEL (Short Term Exposure Limit) TWA Ceiling Maximum limit value Key literature references and sources for data used to compile the SDS Agency for Toxic Substances and Disease Registry (ATSDR) U.S. Environmental Protection Agency ChemView Database European Food Safety Authority (EFSA) EPA (Environmental Protection Agency) Acute Exposure Guideline Level(s) (AEGL(s)) U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals Food Research Journal Hazardous Substance Database International Uniform Chemical Information Database (IUCLID) Japan GHS Classification Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) NIOSH (National Institute for Occupational Safety and Health) National Library of Medicine's ChemID Plus (NLM CIP) National Library of Medicine's PubMed database (NLM PUBMED) National Toxicology Program (NTP) New Zealand's Chemical Classification and Information Database (CCID) Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development High Production Volume Chemicals Program Organization for Economic Co-operation and Development Screening Information Data Set World Health Organization

Revision date26-May-2022Revision NoteNo information available.Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet