

**MSDS (Material Safety Data Sheet)  
Silver Solution Concentrate - C1145**

1		Product Identification	
	1	Manufacturer:	
		1 Name:	Angelgilding.com
		2 Street Address:	619 S. Clarence Ave
		3 City, State, and Zip:	Oak Park, IL 60304-1303
		4 24-hour Emergency Number	(708) 383-3340
	2	Product Code(s):	Silver Solution Concentrate - C1145
	3	Preparer:	
		1 Name:	M. G. King
		2 Phone Number:	(708) 383-3340
		3 Revision Information:	6/24/2008
2		Composition/Information on Ingredients	
		SILVER(I) nitrate	
		1 Synonyms:	Lunar caustic
		2 CAS Id:	7761-88-8
		3 Formula:	AgNO3
		4 Formula Weight:	169.87
		5 Percent:	17
		6 Hazardous:	
		Ammonia	
		1 Synonyms:	
		2 CAS Id:	1336-21-6
		3 Formula:	NH3 (aq.)
		4 Formula Weight:	35.05
		5 Percent:	9
		6 Hazardous:	
3		Hazards Identification	
	1	Overview:	POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED OR INHALED. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
	2	SAF-T-DATA Ratings:	
		1 Health Rating:	3 - Severe (Poison)
		2 Flammability Rating:	0
		3 Reactivity Rating:	3 - Severe (Oxidizer)
		4 Contact Rating:	4 - Extreme (Corrosive)
		5 Protective Equipment:	GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
		6 Storage Color Code:	White Stripe (Store Separately)
	3	Potential Health Effects:	
		1 Inhalation:	Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. May be absorbed into the body following inhalation with symptoms paralleling those from ingestion exposure.

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		2	Ingestion:	Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhea. Poison. Symptoms include pain and burning in the mouth, blackening of the skin and mucous membranes, throat, and abdomen, salivation, vomiting of black material, diarrhea, collapse, shock, coma and death.
		3	Skin Contact:	Corrosive. Symptoms of redness, pain, and severe burn can occur.
		4	Eye Contact:	Corrosive. Can cause blurred vision, redness, pain, severe tissue burns and eye damage.
		5	Chronic Exposure:	Repeated application or ingestion causes a permanent bluish discoloration of the skin, conjunctiva, and mucous membranes. Repeated inhalation may cause lung disease.
		6	Aggravation of Pre-existing Conditions:	Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.
4			First Aid Measures	
	1		Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
	2		Ingestion:	If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
	3		Skin Contact:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
	4		Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
	5		Note to Physician:	
5			Fire Fighting Measures:	
	1		Fire:	Autoignition temperature: 651 C. This oxidizing material can increase the flammability of adjacent combustible materials.
	2		Explosion:	Many reactions may cause explosion. Sensitive to mechanical shock.
	3		Fire Extinguishing Media:	Use flooding amounts of water. Do not use dry chemical, carbon dioxide or Halon. Do not allow water runoff to enter sewers or waterways.
	4		Special Information:	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6		Accidental Release Measures:	Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.
7		Handling and Storage:	Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Protect from light. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
8		Exposure Controls/Personal Protection:	
	1	Airborne Exposure Limits:	
		1 OSHA PEL:	
		Ammonia	500 ppm
		Total dust	
		2 ACGIH TLV:	
		Silver	0.05 mg /m <sup>3</sup> (TWA) for soluble silver compounds as Ag
		Ammonia	250 ppm (NH <sub>3</sub> ) (TWA) 350 ppm (STEL)
	2	Ventilation System:	A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.
	3	Personal Respirators (NIOSH Approved):	If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
	4	Skin Protection:	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
	5	Eye Protection:	Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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9		Physical and Chemical Properties:	
	1	Appearance:	Colorless solution
	2	Odor:	Ammonia
	3	Solubility in water:	Complete
	4	Density (g cm-3):	1.1
	5	pH:	10
	6	% Volatiles by volume @ 21C (70F):	
	7	Boiling Point: °C	100
	8	Melting Point (°C):	0
	9	Vapor Density (Air=1):	
	10	Vapor Pressure (mm Hg):	
	11	Evaporation Rate (BuAc=1):	
10		Stability and Reactivity:	
	1	Stability:	Stable at room temperature in sealed containers. Discolors on exposure to light.
	2	Hazardous Decomposition Products:	
	3	Hazardous Polymerization:	
	4	Incompatibilities:	Alkalis, antimony salts, arsenites, bromides, carbonates, chlorides, iodides, thiocyanates, ferrous salts, phosphates, tannic acid and tartrates.
	5	Conditions to Avoid:	Heat, flame, sources of ignition, light and incompatibles.
11		Toxicological Information:	
	1	Oral rat LD50:	7 g/kg
	2	Tumorigen:	Investigated
	3	Mutagen:	Investigated
	4	Reproductive effector:	Investigated
	5	Carcinogenicity:	
	6	IARC Category:	
	7	Skin rabbit:	
	8	Eye rabbit:	6 mg, severe
	9	Inhalation rat LC50	
12		Ecological Information	
	1	Environmental Fate:	
	2	Environmental Toxicity:	
13		Disposal Considerations:	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.
14		Transport Information:	
	1	Domestic (Land, D.O.T.):	
		1 Proper Shipping Name:	RQ, SILVER NITRATE
		2 Hazard Class:	5.1
		3 UN/NA:	UN1493
		4 Packing Group:	II

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		5	Information reported for product/size:	80 OZ
	2		International (Water, I.M.O.):	
		1	Proper Shipping Name:	RQ, SILVER NITRATE
		2	Hazard Class:	5.1
		3	UN/NA:	UN1493
		4	Packing Group:	II
		5	Information reported for product/size:	80 OZ
	3		International (Air, I.C.A.O.):	
		1	Proper Shipping Name:	RQ, SILVER NITRATE
		2	Hazard Class:	5.1
		3	UN/NA:	UN1493
		4	Packing Group:	II
		5	Information reported for product/size:	80 OZ
15			Regulatory Information:	
	1		TSCA:	Yes
	2		EC:	Yes
	3		Japan:	Yes
	4		Australia:	Yes
	5		Korea:	Yes
	6		Canada:	Yes
	7		Chemical Weapons Convention:	No
	8		Known to the State of California to cause cancer (Y/N):	
	9		Australian Hazchem Code:	2X
	10		Poison Schedule:	S6
	11		Controlled Products Regulations:	
16			Other Information	
	1		NFPA Ratings:	
		1	Health:	4
		2	Flammability:	0
		3	Reactivity:	0
	2		Label Hazard Warning:	POISON! DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.

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	3	Label Precautions:	<p>Keep from contact with clothing and other combustible materials.          Do not get in eyes, on skin, or on clothing.          Do not breathe dust.          Keep container closed.          Use only with adequate ventilation.          Wash thoroughly after handling.          Store in a tightly closed container.          Do not store near combustible materials.</p>
	4	Label First Aid:	<p>If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.</p>
	5	Product Use:	Commercial mirroring
	6	Disclaimer:	<p>Angelgilding.com provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Angelgilding.com. makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Angelgilding.com will not be responsible for damages resulting from use of or reliance upon this information.</p>