

SAFETY DATA SHEET

Preparation Date: 08/04/2015

Revision Date: 08/04/2015

Revision Number: g1

1. IDENTIFICATION

Product identifier

Product code: AA280
Product Name: SILVER ATOMIC ABSORPTION STANDARD

Other means of identification

Synonyms: No information available
CAS #: Mixture
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Laboratory reagent.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements

Causes severe skin burns and eye damage
May be corrosive to metals



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

Specific treatment (see .? on this label)

Absorb spillage to prevent material damage

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/physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Water 7732-18-5	7732-18-5	98.5	*
Nitric Acid, fuming 7697-37-2	7697-37-2	1.4	*

3. COMPOSITION/INFORMATION ON INGREDIENTS

Silver 7440-22-4	7440-22-4	0.1	*
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4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact:

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact:

Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Immediate medical attention is required.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes severe skin burns. Causes serious eye damage. May cause irritation to mucous membranes. May cause irritation of respiratory tract. May cause coughing and shortness of breath. Choking sensation. Severe over-exposure can result in death.

Indication of any immediate medical attention and special treatment needed

Notes to Physician:

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media:

No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products:

No information available.

Specific hazards:

Slightly explosive to explosive in presence of reducing materials, of combustibles materials, of organic materials

Special Protective Actions for Firefighters

Specific Methods:

No information available.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Evacuate personnel to safe areas.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container.

Methods for cleaning up Neutralize the residue with a dilute solution of sodium carbonate. Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. May corrode metallic surfaces. Do not store in uncoated metallic containers. Store in a coated fiberboard drum using a strong polyethylene inner package. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Water 7732-18-5	None	None	None	None
Nitric Acid, fuming 7697-37-2	2 ppm TWA 5 mg/m ³ TWA	2 ppm TWA 5 mg/m ³ TWA 4 ppm STEL 10 mg/m ³ STEL	4 ppm STEL 2 ppm TWA	None

Silver 7440-22-4	0.01 mg/m ³ TWA	= 0.01 mg/m ³ TWA	= 0.1 mg/m ³ TWA dust and fume	None
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Canada

Components	Alberta	British Columbia	Ontario	Quebec
Water 7732-18-5	None	None	None	None
Nitric Acid, fuming 7697-37-2	2 ppm TWA 5.2 mg/m ³ TWA 4 ppm STEL 10 mg/m ³ STEL	2 ppm TWA 4 ppm STEL	2 ppm TWA	2 ppm TWAEV 5.2 mg/m ³ TWAEV 4 ppm STEV 10 mg/m ³ STEV
Silver 7440-22-4	= 0.1 mg/m ³ TWA	= 0.01 mg/m ³ TWA	0.1 mg/m ³ TWA dust and fume	0.1 mg/m ³ TWAEV

Australia and Mexico

Components	Australia	Mexico
Water 7732-18-5	None	None
Nitric Acid, fuming 7697-37-2	None	2 ppm TWA 5 mg/m ³ TWA 4 ppm STEL 10 mg/m ³ STEL
Silver 7440-22-4	0.1 mg/m ³ TWA	= 0.1 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Face-shield or Goggles
- Skin and body protection:** Chemical resistant protective suit. Gloves. boots.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid.	Appearance: No information available	Color: Clear. Colorless.
Odor: No information available	Taste No information available	Molecular/Formula weight: No information available
Formula: No information available	Flammability: No information available	Flash point (°C): No data available
Flashpoint (°C/°F): No information available.	Flash Point Tested according to: Not available	Lower Explosion Limit (%): No information available
Autoignition Temperature (°C/°F): No information available	Upper Explosion Limit (%): No information available	pH: Acidic
Melting point/range(°C/°F): -41.6°C/ -42.9°F (Nitric acid, fuming)	Boiling point/range(°C/°F): 82.6°C/ 180.7°F (Nitric acid). Weighted average: 99.76°C/ 211.6°F	Decomposition temperature(°C/°F): No information available
Bulk density: No information available	Specific gravity: (Water = 1)	Vapor pressure @ 20°C (kPa): 6 (Nitric acid, fuming). Weighted average: 2.39
Density (g/cm3): No information available	Evaporation rate: No information available	Vapor density: 0.62 (Air = 1) (Water)
VOC content (g/L): No information available	Odor threshold (ppm): 0.29 (Nitric acid, fuming)	Partition coefficient (n-octanol/water): No information available
Viscosity: No information available	Miscibility: No information available	Solubility: Easily soluble in cold water

10. STABILITY AND REACTIVITY

Reactivity

Highly reactive with alkalis.

Slightly reactive with reducing agents, combustible materials, organic materials, metals, acids, and bases.

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Incompatible materials.

Incompatible Materials: Alkalis.

Hazardous decomposition products: No information available

Other Information

Corrosivity: Highly corrosive in the presence of aluminum, of zinc
Highly corrosive in presence of copper
Slightly corrosive in presence of stainless steel (304)
Slightly corrosive in presence of stainless steel (316)
Non-corrosive in the presence of glass

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Skin. Eyes. Inhalation. Ingestion.

Acute Toxicity

Component Information

Water - 7732-18-5

LD50/oral/rat = > 90 mL/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Nitric Acid, fuming - 7697-37-2

LD50/oral/rat = No information available
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = 67 ppm Inhalation LC50 Rat 4 h
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Silver - 7440-22-4

LD50/oral/rat = > 2000 mg/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

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VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Corrosive. Causes severe irritation and burns.
Eye Contact: Corrosive. Causes severe irritation and burns.
Inhalation Inhalation of mist or vapors may cause respiratory tract irritation and mucous membrane irritation.
Ingestion Corrosive. May cause digestive (gastrointestinal) tract irritation.
Aspiration hazard No information available

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

Chronic Toxicity No information available
Sensitization: No information available
Mutagenic Effects: No information available
Carcinogenic effects: Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Water	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Nitric Acid, fuming	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Silver	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available
Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure No information available
Target Organs: Urinary Tract. Central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Silver - 7440-22-4

Freshwater Fish Species Data: 0.064 mg/L LC50 Lepomis macrochirus 96 h static 1
0.00155-0.00293 mg/L LC50 Pimephales promelas 96 h static 1
0.0062 mg/L LC50 Oncorhynchus mykiss 96 h flow-through 1

Water Flea Data: 0.00024 mg/L EC50 Daphnia magna 48 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Water	None	None	None	None
Nitric Acid, fuming	None	None	None	None
Silver	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2031
Proper Shipping Name: Nitric acid (Solution)
Hazard Class: 8
Subsidiary Risk:
Packing Group: II
ERG No: 157
Marine Pollutant: No data available
DOT RQ (lbs): No information available

Symbol(s):

TDG (Canada)

UN-No: UN2031
Proper Shipping Name: Nitric acid
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

ADR

UN-No: UN2031
Proper Shipping Name: Nitric acid
Hazard Class: 8

14. TRANSPORT INFORMATION

Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN2031
Proper Shipping Name: Nitric acid
Hazard Class: 8
Subsidiary Risk: 5.1
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN2031
Proper Shipping Name: Nitric acid
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN2031
Proper Shipping Name: Nitric acid
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA

UN-No: UN2031
Proper Shipping Name: Nitric acid
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 8L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Water</i>	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
<i>Nitric Acid, fuming</i>	Present	Present KE-25911	Present	Present (1)-394	Present	Present	Present 231-714-2
<i>Silver</i>	Present	Present KE-31261	Present	Not present	Present	Present	Present 231-131-3

U.S. Regulations

Nitric Acid, fuming

Massachusetts RTK: Present

New Jersey RTK Hazardous Substance List: 1356

New Jersey (EHS) List: 1356 500 lb TPQ

New Jersey - Discharge Prevention - List of Hazardous Substances: Present

New Jersey TCPA - EHS: 15000lbTQ

450lbTQ

Pennsylvania RTK: Environmental hazard

Pennsylvania RTK - Environmental Hazard List Present

Minnesota - Hazardous Substance List: Present

New York Release Reporting - List of Hazardous Substances:

1000 lb RQ

100 lb RQ

Louisiana Reportable Quantity List for Pollutants: 1000lbfinal RQAs listed in 40 CFR 117.3 Table 117.3 and 40 CFR 302.4 Table 302.4

454kgfinal RQAs listed in 40 CFR 117.3 Table 117.3 and 40 CFR 302.4 Table 302.4

1000lbRQAs listed in Louisiana Administrative Code, Title 33, Part 1, Subpart 2, Chapter 39, Subchapter E. Applies to unauthorized emissions based on total mass emitted into or onto all media within any consecutive 24-hour period

100lbRQAs listed in Louisiana Administrative Code, Title 33, Part 1, Subpart 2, Chapter 39, Subchapter E. Applies to unauthorized emissions based on total mass emitted into the atmosphere

California Directors List of Hazardous Substances: Present

Silver

Massachusetts RTK: Present

New Jersey RTK Hazardous Substance List: 1669

New Jersey (EHS) List: 1669 500 lb TPQ

New Jersey - Discharge Prevention - List of Hazardous Substances: Present

Pennsylvania RTK: Environmental hazard

Pennsylvania RTK - Environmental Hazard List Present

Pennsylvania RTK - Special Hazardous Substances Present

Michigan - Critical Materials List: Present

Minnesota - Hazardous Substance List: Present

New York Release Reporting - List of Hazardous Substances:

= 1000 lb RQ

Louisiana Reportable Quantity List for Pollutants: Listed

California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Water	Not Listed	Not Listed	Not Listed	Not Listed
Nitric Acid, fuming	Not Listed	Not Listed	Not Listed	Not Listed
Silver	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Water	None	None	None	None	None
Nitric Acid, fuming	1000 lb final RQ 454 kg final RQ	1000 lb TPQ	None	None	1.0 % de minimis concentration
Silver	= 1000 lb final RQ	None	None	None	1.0 % de minimis concentration

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Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Water	Not Applicable	Not Applicable
Nitric Acid, fuming	Not Applicable	Not Applicable
Silver	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

E Corrosive material

Water

Uncontrolled product according to WHMIS classification criteria

Nitric Acid, fuming

C E including 61.3%, 67.18%, 70%
E 0.63%, 6.3%

Silver

Uncontrolled product according to WHMIS classification criteria

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Nitric Acid, fuming	1 %
Silver	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Water	Present	Not Listed
Nitric Acid, fuming	Present	Not Listed
Silver	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Water	Not listed	Not listed
Nitric Acid, fuming	Not listed	Not listed
Silver	Not listed	Not listed

EU Classification

R-phrase(s)

R 8 - Contact with combustible material may cause fire.

R35 - Causes severe burns.

S -phrase(s)

S23 - Do not breathe gas/fumes/vapor/spray.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36 - Wear suitable protective clothing.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 1/2 - Keep locked up and out of the reach of children.

Components	Classification	Concentration Limits:	Safety Phrases
Water		No information	

Nitric Acid, fuming	C; R35 O; R8	No information	S1/2 S23 S26 S36 S45
Silver		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

C - Corrosive.



16. OTHER INFORMATION

Preparation Date: 08/04/2015
Revision Date: 08/04/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet