

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Selenium AA Standard, 1000 ppm (1mL = 1mg Se)
Product code : LC22370

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : For laboratory and manufacturing use only.

1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Met. Corr. 1 H290
Skin Corr. 1B H314
Eye Dam. 1 H318

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) : P234 - Keep only in original container
P260 - Do not breathe mist
P264 - Wash exposed skin thoroughly after handling
P280 - Wear protective gloves, protective clothing, eye protection, face protection
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 person to fresh air and keep 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/doctor
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P405 - Store locked up
P406 - Store in corrosive resistant container with a resistant inner liner
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Water	(CAS No) 7732-18-5	95.9	Not classified
Nitric Acid	(CAS No) 7697-37-2	4	Ox. Liq. 3, H272 Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318
Selenium	(CAS No) 7782-49-2	0.1	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation), H331 STOT RE 2, H373 Aquatic Chronic 4, H413

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.
- First-aid measures after eye contact : 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.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes severe skin burns and eye damage.
- Symptoms/injuries after inhalation : Irritation of the respiratory tract.
- Symptoms/injuries after skin contact : Burns. Yellow skin.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Burns. Central nervous system depression.
- Chronic symptoms : Central nervous system depression. Affection/discolouration of the teeth. Enlargement/affection of the liver. Emotional instability.

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Thermal decomposition generates : Corrosive vapors.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Safety glasses. Protective clothing. Gloves. Face-shield.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.

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Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Absorb spillage to prevent material damage.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : May be corrosive to metals.
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist.
Hygiene measures : Wash exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials, Direct sunlight. Keep container closed when not in use.
Incompatible products : Strong bases. Strong oxidizers.
Incompatible materials : Sources of ignition. Direct sunlight.
Packaging materials : Store in corrosive resistant/... container with a resistant inner liner.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Selenium AA Standard, 1000 ppm (1mL = 1mg Se)		
ACGIH	Not applicable	
OSHA	Not applicable	
Selenium (7782-49-2)		
ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	0.2 mg/m³
Nitric Acid, 70% w/w (7697-37-2)		
ACGIH	ACGIH TWA (ppm)	2 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	2 ppm
Water (7732-18-5)		
ACGIH	Not applicable	
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.
Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or face shield.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 105 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Miscible with water. Water: Solubility in water of component(s) of the mixture : • Nitric Acid, 70% w/w:
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong oxidizers. Strong bases. metals. May be corrosive to metals.

10.6. Hazardous decomposition products

Nitrogen oxides. Selenium and its oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Skin and eye contact
Acute toxicity	: Not classified

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Selenium (7782-49-2)	
LD50 oral rat	6700 mg/kg
ATE US (oral)	100.000 mg/kg body weight
ATE US (gases)	700.000 ppmV/4h
ATE US (vapors)	3.000 mg/l/4h
ATE US (dust, mist)	0.500 mg/l/4h

Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000.000 mg/kg body weight

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

Selenium (7782-49-2)	
IARC group	3 - Not classifiable

Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: Irritation of the respiratory tract.
Symptoms/injuries after skin contact	: Burns. Yellow skin.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Burns. Central nervous system depression.
Chronic symptoms	: Central nervous system depression. Affection/dicolouration of the teeth. Enlargement/affection of the liver. Emotional instability.

SECTION 12: Ecological information

12.1. Toxicity

Selenium (7782-49-2)	
LC50 fish 1	<
EC50 Daphnia 1	0.43 mg/l 48 h
EC50 other aquatic organisms 1	99 mg/l 72 h
LOEC (acute)	7.8 mg/l 96 h
NOEC (acute)	2 mg/l 96 h

Nitric Acid, 70% w/w (7697-37-2)	
LC50 fish 1	25 - 36 mg/l (96 h; Lepomis macrochirus; Pure substance)
EC50 Daphnia 1	180 mg/l (48 h; Daphnia magna; Pure substance)
LC50 fish 2	72 ppm (Gambusia affinis; Pure substance)
Threshold limit algae 1	> 19 mg/l (Algae; Pure substance)

12.2. Persistence and degradability

Selenium AA Standard, 1000 ppm (1mL = 1mg Se)	
Persistence and degradability	Not readily biodegradable in water.

Nitric Acid, 70% w/w (7697-37-2)	
Persistence and degradability	Biodegradability: not applicable. No test data on mobility of the components available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable

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Nitric Acid, 70% w/w (7697-37-2)	
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Water (7732-18-5)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Selenium AA Standard, 1000 ppm (1mL = 1mg Se)	
Bioaccumulative potential	Potential for bioaccumulation ($500 \leq \text{BCF} \leq 5000$).
Selenium (7782-49-2)	
BCF fish 1	0.64 mg/l 60 d
Bioconcentration factor (BCF REACH)	7.7
Log Pow	5
Nitric Acid, 70% w/w (7697-37-2)	
BCF fish 1	≤ 1 (Pisces)
Log Pow	-2.3 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential	Bioaccumulation: not applicable.
Water (7732-18-5)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming	: No known ecological damage caused by this product.
Other information	: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid), 8, II
UN-No.(DOT)	: UN3264
Proper Shipping Name (DOT)	: Corrosive liquid, acidic, inorganic, n.o.s.
Transport hazard class(es) (DOT)	: 8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT)	: 8 - Corrosive



Packing group (DOT)	: II - Medium Danger
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Symbols	: G - Identifies PSN requiring a technical name

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DOT Special Provisions (49 CFR 172.102)	: B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 30 L
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Selenium AA Standard, 1000 ppm (1mL = 1mg Se)

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Selenium	CAS No 7782-49-2	0.1
Nitric Acid, 70% w/w	CAS No 7697-37-2	4

Selenium (7782-49-2)

Listed on United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb
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SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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Nitric Acid, 70% w/w (7697-37-2)

Listed on United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists) 1000 lb

SARA Section 311/312 Hazard Classes Immediate (acute) health hazard

15.2. International regulations

CANADA

Selenium (7782-49-2)

Listed on the Canadian DSL (Domestic Substances List)

Nitric Acid, 70% w/w (7697-37-2)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification Class E - Corrosive Material
Class C - Oxidizing Material

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

National regulations

Nitric Acid, 70% w/w (7697-37-2)

Listed on the Canadian IDL (Ingredient Disclosure List)

Water (7732-18-5)

Not listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

California Proposition 65- This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Other information : None.

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Full text of H-phrases: see section 16:

Acute Tox. 3 (Inhalation)	Acute toxicity (inhalation) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Aquatic Chronic 4	Hazardous to the aquatic environment - Chronic Hazard Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Ox. Liq. 3	Oxidizing liquids Category 3
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
H272	May intensify fire; oxidizer
H290	May be corrosive to metals
H301	Toxic if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
H373	May cause damage to organs through prolonged or repeated exposure
H413	May cause long lasting harmful effects to aquatic life

NFPA health hazard

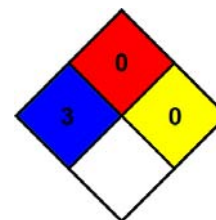
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

* - Chronic (long-term) health effects may result from repeated overexposure

Flammability

: 0 Minimal Hazard - Materials that will not burn

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal Protection

: D

D - Face shield and eye protection, Gloves, Synthetic apron

SDS US (GHS HazCom 2012)

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