

Safety Data Sheet
acc. to OSHA HCS

Printing date 07/08/2022

Reviewed on 07/08/2022

1 Identification

- **Product identifier**
- **Trade name:** 500 mL
- **Article number:** ICP-STD-1,2,3,7
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
High-Purity Standards
7221 Investment Drive, North Charleston, SC 29418 United States
Telephone: +1-843-767-7900
Fax: +1-843-767-7906
highpuritystandards.com
Email: *info@highpuritystandards.com*
- **Information department:** *Product safety department*
- **Emergency telephone number:**
INFOTRAC
Emergency telephone numbers 1-800-535-5053
Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

- **Classification of the substance or mixture**

*Skin Irrit. 2 H315 Causes skin irritation.**Eye Irrit. 2A H319 Causes serious eye irritation.*

- **Label elements**
- **GHS label elements** *The product is classified and labeled according to the Globally Harmonized System (GHS).*
- **Hazard pictograms**



GHS07

- **Signal word** *Warning*
- **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
- **Precautionary statements**
Wash thoroughly after handling.
Wear protective gloves / eye protection / face protection.
If on skin: Wash with plenty of water.
Specific treatment (see on this label).

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If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

If eye irritation persists: Get medical advice/attention.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

7697-37-2	nitric acid	2.0%
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· **Chemical identification of the substance/preparation**

7732-18-5	water, distilled, conductivity or of similar purity	97.9853%
7440-55-3	gallium	0.001%
7440-69-9	bismuth	0.001%
7440-74-6	indium	0.001%
7429-90-5	aluminium	0.0005%
7439-89-6	iron	0.0005%
7439-92-1	lead	0.0005%
7439-95-4	magnesium	0.0005%
7439-96-5	manganese	0.0005%
7440-02-0	nickel	0.0005%
7440-09-7	potassium	0.0005%
7440-17-7	rubidium	0.0005%
7440-21-3	silicon	0.0005%

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7440-22-4	silver	0.0005%
7440-23-5	sodium	0.0005%
7440-28-0	thallium	0.0005%
7440-38-2	arsenic	0.0005%
7440-41-7	beryllium	0.0005%
7440-42-8	boron	0.0005%
7440-43-9	cadmium	0.0005%
7440-47-3	chromium	0.0005%
7440-48-4	cobalt	0.0005%
7440-50-8	copper	0.0005%
7440-62-2	vanadium	0.0005%
7440-66-6	zinc	0.0005%
7440-70-2	calcium	0.0005%
7782-49-2	selenium	0.0005%
7439-93-2	lithium	0.0001%
7440-39-3	barium	0.00005%
7440-24-6	strontium	0.00005%

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

7697-37-2	nitric acid	0.16 ppm
7440-55-3	gallium	30 mg/m ³
7440-69-9	bismuth	15 mg/m ³
7440-74-6	indium	0.3 mg/m ³
7439-89-6	iron	3.2 mg/m ³
7439-92-1	lead	0.15 mg/m ³
7439-95-4	magnesium	18 mg/m ³
7439-96-5	manganese	3 mg/m ³
7440-02-0	nickel	4.5 mg/m ³
7440-09-7	potassium	2.3 mg/m ³
7440-17-7	rubidium	3.9 mg/m ³
7440-21-3	silicon	45 mg/m ³
7440-22-4	silver	0.3 mg/m ³
7440-23-5	sodium	13 mg/m ³
7440-28-0	thallium	0.06 mg/m ³
7440-38-2	arsenic	1.5 mg/m ³
7440-41-7	beryllium	0.0023 mg/m ³
7440-42-8	boron	1.9 mg/m ³
7440-43-9	cadmium	0.10 mg/m ³
7440-47-3	chromium	1.5 mg/m ³
7440-48-4	cobalt	0.18 mg/m ³
7440-50-8	copper	3 mg/m ³
7440-62-2	vanadium	3 mg/m ³
7440-66-6	zinc	6 mg/m ³

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7782-49-2	selenium	0.6 mg/m ³
7439-93-2	lithium	3.3 mg/m ³
7440-24-6	strontium	30 mg/m ³
7440-39-3	barium	1.5 mg/m ³

PAC-2:

7697-37-2	nitric acid	24 ppm
7440-55-3	gallium	330 mg/m ³
7440-69-9	bismuth	170 mg/m ³
7440-74-6	indium	3.3 mg/m ³
7439-89-6	iron	35 mg/m ³
7439-92-1	lead	120 mg/m ³
7439-95-4	magnesium	200 mg/m ³
7439-96-5	manganese	5 mg/m ³
7440-02-0	nickel	50 mg/m ³
7440-09-7	potassium	25 mg/m ³
7440-17-7	rubidium	43 mg/m ³
7440-21-3	silicon	100 mg/m ³
7440-22-4	silver	170 mg/m ³
7440-23-5	sodium	140 mg/m ³
7440-28-0	thallium	3.3 mg/m ³
7440-38-2	arsenic	17 mg/m ³
7440-41-7	beryllium	0.025 mg/m ³
7440-42-8	boron	21 mg/m ³
7440-43-9	cadmium	0.76 mg/m ³
7440-47-3	chromium	17 mg/m ³
7440-48-4	cobalt	2 mg/m ³
7440-50-8	copper	33 mg/m ³
7440-62-2	vanadium	5.8 mg/m ³
7440-66-6	zinc	21 mg/m ³
7782-49-2	selenium	6.6 mg/m ³
7439-93-2	lithium	36 mg/m ³
7440-24-6	strontium	330 mg/m ³
7440-39-3	barium	180 mg/m ³

PAC-3:

7697-37-2	nitric acid	92 ppm
7440-55-3	gallium	2,000 mg/m ³
7440-69-9	bismuth	990 mg/m ³

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7440-74-6	indium	20 mg/m ³
7439-89-6	iron	150 mg/m ³
7439-92-1	lead	700 mg/m ³
7439-95-4	magnesium	1,200 mg/m ³
7439-96-5	manganese	1,800 mg/m ³
7440-02-0	nickel	99 mg/m ³
7440-09-7	potassium	150 mg/m ³
7440-17-7	rubidium	260 mg/m ³
7440-21-3	silicon	630 mg/m ³
7440-22-4	silver	990 mg/m ³
7440-23-5	sodium	870 mg/m ³
7440-28-0	thallium	20 mg/m ³
7440-38-2	arsenic	100 mg/m ³
7440-41-7	beryllium	0.1 mg/m ³
7440-42-8	boron	130 mg/m ³
7440-43-9	cadmium	4.7 mg/m ³
7440-47-3	chromium	99 mg/m ³
7440-48-4	cobalt	20 mg/m ³
7440-50-8	copper	200 mg/m ³
7440-62-2	vanadium	35 mg/m ³
7440-66-6	zinc	120 mg/m ³
7782-49-2	selenium	40 mg/m ³
7439-93-2	lithium	220 mg/m ³
7440-24-6	strontium	2,000 mg/m ³
7440-39-3	barium	1,100 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

7697-37-2 nitric acid

PEL	Long-term value: 5 mg/m ³ , 2 ppm
REL	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5 mg/m ³ , 2 ppm
TLV	Short-term value: 4 ppm Long-term value: 2 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· **Eye protection:**


Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Liquid
· Color:	According to product specification
· Odor:	Characteristic
· Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	100 °C (212 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

· **Density:** Not determined.

· **Relative density** Not determined.

· **Vapor density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with Water:**

Fully miscible.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined.

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· Solvent content:	
Water:	98.0 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
· Solids content:	0.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
7439-92-1	lead	2B
7440-02-0	nickel	2B
7440-38-2	arsenic	1
7440-41-7	beryllium	1
7440-43-9	cadmium	1
7440-47-3	chromium	3
7440-48-4	cobalt	2B
7782-49-2	selenium	3

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· NTP (National Toxicology Program)

7439-92-1	lead	R
7440-02-0	nickel	R
7440-38-2	arsenic	K
7440-41-7	beryllium	K
7440-43-9	cadmium	K
7440-48-4	cobalt	R

· OSHA-Ca (Occupational Safety & Health Administration)

7440-38-2	arsenic
7440-43-9	cadmium

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not hazardous for water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN2922

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· **UN proper shipping name**
 · **DOT**
 · **ADR**
 · **IMDG, IATA**

Corrosive liquids, toxic, n.o.s. (Nitric acid)
 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (NITRIC ACID)
 CORROSIVE LIQUID, TOXIC, N.O.S. (NITRIC ACID)

· **Transport hazard class(es)**

· **DOT**



· **Class**
 · **Label**

8 Corrosive substances
 8, 6.1

· **ADR**



· **Class**
 · **Label**

8 (CT1) Corrosive substances
 8+6.1

· **IMDG**



· **Class**
 · **Label**

8 Corrosive substances
 8/6.1

· **IATA**



· **Class**
 · **Label**

8 Corrosive substances
 8 (6.1)

· **Packing group**

· **DOT, ADR, IMDG, IATA**

III

· **Environmental hazards:**

Not applicable.

· **Special precautions for user**
 · **Hazard identification number (Kemler code):**
 · **EMS Number:**
 · **Segregation groups**

Warning: Corrosive substances
 86
 F-A,S-B
 Strong acids

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· Stowage Category	<i>B</i>
· Stowage Code	<i>SW2 Clear of living quarters.</i>
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	<i>Not applicable.</i>
· Transport/Additional information:	
· DOT	
· Quantity limitations	<i>On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L</i>
· ADR	
· Excepted quantities (EQ)	<i>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</i>
· IMDG	
· Limited quantities (LQ)	<i>5L</i>
· Excepted quantities (EQ)	<i>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</i>
· UN "Model Regulation":	<i>UN 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (NITRIC ACID), 8 (6.1), III</i>

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Sara**

· **Section 355 (extremely hazardous substances):**

7697-37-2	nitric acid
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· **Section 313 (Specific toxic chemical listings):**

7697-37-2	nitric acid
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7429-90-5	aluminium
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7439-92-1	lead
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7439-96-5	manganese
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7440-02-0	nickel
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7440-22-4	silver
-----------	--------

7440-28-0	thallium
-----------	----------

7440-38-2	arsenic
-----------	---------

7440-41-7	beryllium
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7440-43-9	cadmium
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7440-47-3	chromium
7440-48-4	cobalt
7440-50-8	copper
7440-62-2	vanadium
7440-66-6	zinc
7782-49-2	selenium
7440-39-3	barium

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

7439-92-1	lead
7439-96-5	manganese
7440-48-4	cobalt

· **Proposition 65**

· **Chemicals known to cause cancer:**

7439-92-1	lead
7440-02-0	nickel
7440-38-2	arsenic
7440-41-7	beryllium
7440-43-9	cadmium
7440-48-4	cobalt

· **Chemicals known to cause reproductive toxicity for females:**

7439-92-1	lead
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· **Chemicals known to cause reproductive toxicity for males:**

7439-92-1	lead
7440-43-9	cadmium

· **Chemicals known to cause developmental toxicity:**

7439-92-1	lead
7440-43-9	cadmium

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

7439-92-1	lead	B2
7439-96-5	manganese	D
7440-22-4	silver	D
7440-38-2	arsenic	A
7440-41-7	beryllium	B1, K/L(inh), CBD(oral)
7440-42-8	boron	I (oral)

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7440-43-9	cadmium	BI
7440-47-3	chromium	D
7440-50-8	copper	D
7440-66-6	zinc	D, I, II
7782-49-2	selenium	D
7440-39-3	barium	D, CBD(inh), NL(oral)

· **TLV (Threshold Limit Value)**

7429-90-5	aluminium	A4
7439-92-1	lead	A3
7440-02-0	nickel	A5
7440-38-2	arsenic	A1
7440-41-7	beryllium	A1
7440-43-9	cadmium	A2
7440-47-3	chromium	A4
7440-48-4	cobalt	A3
7440-39-3	barium	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

7440-02-0	nickel
7440-38-2	arsenic
7440-41-7	beryllium
7440-43-9	cadmium

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Precautionary statements**

Wash thoroughly after handling.

Wear protective gloves / eye protection / face protection.

If on skin: Wash with plenty of water.

Specific treatment (see on this label).

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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*If eye irritation persists: Get medical advice/attention.**· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.***16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

*· Department issuing SDS: Environment protection department.**· Contact:**High-Purity Standards**Tel: 843-767-7900**Fax: 843-767-7906**· Date of preparation / last revision 07/08/2022 / -**· Abbreviations and acronyms:**ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**VOC: Volatile Organic Compounds (USA, EU)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*