

## Safety Data Sheet acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

### 1 Identification

- **Product identifier**
- **Trade name:** ICP-MS-SS-1
- **Article number:** ICP-MS-SS-1
- **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](http://highpuritystandards.com)  
Email: [info@highpuritystandards.com](mailto: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**



- **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).

(Contd. on page 2)

US

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

**Trade name: ICP-MS-SS-1**

(Contd. of page 1)

*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)**



· **HMIS-ratings (scale 0 - 4)**



· **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	1.0%
543-81-7	beryllium acetate	0.0000001%
1306-38-3	cerium dioxide	0.0000001%
7439-89-6	iron	0.0000001%
7440-74-6	indium	0.0000001%
554-13-2	lithium carbonate	0.0000001%
7439-95-4	magnesium	0.0000001%
7439-92-1	lead	0.0000001%
10102-06-4	Uranyl nitrate	0.0000001%

· **Chemical identification of the substance/preparation**

7732-18-5	water, distilled, conductivity or of similar purity	98.9999992%
-----------	---	-------------

(Contd. on page 3)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

Trade name: ICP-MS-SS-1

(Contd. of page 2)

**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.
- **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
554-13-2	lithium carbonate	3.1 mg/m <sup>3</sup>
1306-38-3	cerium dioxide	3 mg/m <sup>3</sup>
7439-89-6	iron	3.2 mg/m <sup>3</sup>
7439-92-1	lead	0.15 mg/m <sup>3</sup>
7439-95-4	magnesium	18 mg/m <sup>3</sup>
7440-74-6	indium	0.3 mg/m <sup>3</sup>
10102-06-4	Uranyl nitrate	0.99 mg/m <sup>3</sup>

(Contd. on page 4)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

**Trade name: ICP-MS-SS-1**

(Contd. of page 3)

· <b>PAC-2:</b>		
7697-37-2	nitric acid	24 ppm
554-13-2	lithium carbonate	34 mg/m <sup>3</sup>
1306-38-3	cerium dioxide	33 mg/m <sup>3</sup>
7439-89-6	iron	35 mg/m <sup>3</sup>
7439-92-1	lead	120 mg/m <sup>3</sup>
7439-95-4	magnesium	200 mg/m <sup>3</sup>
7440-74-6	indium	3.3 mg/m <sup>3</sup>
10102-06-4	Uranyl nitrate	5.5 mg/m <sup>3</sup>
· <b>PAC-3:</b>		
7697-37-2	nitric acid	92 ppm
554-13-2	lithium carbonate	210 mg/m <sup>3</sup>
1306-38-3	cerium dioxide	200 mg/m <sup>3</sup>
7439-89-6	iron	150 mg/m <sup>3</sup>
7439-92-1	lead	700 mg/m <sup>3</sup>
7439-95-4	magnesium	1,200 mg/m <sup>3</sup>
7440-74-6	indium	20 mg/m <sup>3</sup>
10102-06-4	Uranyl nitrate	33 mg/m <sup>3</sup>

## 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.

## 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:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the other constituents have no known exposure limits.

(Contd. on page 5)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

**Trade name: ICP-MS-SS-1**

(Contd. of page 4)

**7697-37-2 nitric acid**

PEL	Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
REL	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
TLV	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5.2 mg/m <sup>3</sup> , 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.

· **Eye protection:**



Tightly sealed goggles

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

Trade name: ICP-MS-SS-1

(Contd. of page 5)

**9 Physical and chemical properties**

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

· **General Information**

· **Appearance:**

· **Form:** Liquid  
 · **Color:** colorless  
 · **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 at 20 °C (68 °F):** 1.00508 g/cm<sup>3</sup> (8.38739 lbs/gal)

· **Bulk density:** 1,005 kg/m<sup>3</sup>  
 · **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.

· **Solvent content:**

· **Water:** 99.0 %  
 · **VOC content:** 0.00 %  
 0.0 g/l / 0.00 lb/gal

· **Solids content:** 0.0 %

(Contd. on page 7)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

**Trade name: ICP-MS-SS-1**

(Contd. of page 6)

· **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)**

543-81-7	beryllium acetate	I
7439-92-1	lead	2B

· **NTP (National Toxicology Program)**

543-81-7	beryllium acetate	K
7439-92-1	lead	R

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**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.

(Contd. on page 8)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

**Trade name: ICP-MS-SS-1**



(Contd. of page 7)

- **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**

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN3264
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
· <b>ADR</b>	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· <b>IMDG, IATA</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>ADR</b>	
	
· <b>Class</b>	8 (C1) Corrosive substances

(Contd. on page 9)




**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

Trade name: ICP-MS-SS-1

(Contd. of page 8)

· <b>Label</b>	8
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	8 Corrosive substances
· <b>Label</b>	8
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Warning: Corrosive substances
· <b>Hazard identification number (Kemler code):</b>	80
· <b>EMS Number:</b>	F-A,S-B
· <b>Segregation groups</b>	Acids
· <b>Stowage Category</b>	A
· <b>Stowage Code</b>	SW2 Clear of living quarters.
· <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations</b>	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III

(Contd. on page 10)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

Trade name: ICP-MS-SS-1

(Contd. of page 9)

**15 Regulatory information**

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

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

7697-37-2	nitric acid
-----------	-------------

· **Section 313 (Specific toxic chemical listings):**

7697-37-2	nitric acid
543-81-7	beryllium acetate
554-13-2	lithium carbonate
7439-92-1	lead

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

7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE
7697-37-2	nitric acid	ACTIVE
554-13-2	lithium carbonate	ACTIVE
1306-38-3	cerium dioxide	ACTIVE
7439-89-6	iron	ACTIVE
7439-92-1	lead	ACTIVE
7439-95-4	magnesium	ACTIVE
7440-74-6	indium	ACTIVE
10102-06-4	Uranyl nitrate	ACTIVE

· **Hazardous Air Pollutants**

7439-92-1	lead
-----------	------

· **Proposition 65**

· **Chemicals known to cause cancer:**

543-81-7	beryllium acetate
7439-92-1	lead

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

7439-92-1	lead
-----------	------

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

7439-92-1	lead
-----------	------

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

554-13-2	lithium carbonate
7439-92-1	lead

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

1306-38-3	cerium dioxide	II
-----------	----------------	----

(Contd. on page 11)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/21/2021

Reviewed on 07/21/2021

**Trade name: ICP-MS-SS-1**

(Contd. of page 10)

7439-92-1	lead	B2
· <b>TLV (Threshold Limit Value established by ACGIH)</b>		
7439-92-1	lead	A3
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
543-81-7	beryllium acetate	
10102-06-4	Uranyl nitrate	

- **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.  
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** 07/21/2021 / -
- **Abbreviations and acronyms:**  
ADR: Accord européen sur le transport 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

(Contd. on page 12)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 07/21/2021

Reviewed on 07/21/2021

**Trade name: ICP-MS-SS-1**

(Contd. of page 11)

*ACGIH: American Conference of Governmental Industrial Hygienists*  
*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*

US