

Safety Data Sheet

acc. to OSHA HCS

Revision date: 06/25/2025

1 Identification

- **Product identifier**
- **Product Name:** ICP-MS Calibration Standard (125 mL)
- **Part no. :** IMS-103
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA
- **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Corrosive to Metals 1 H290 May be corrosive to metals.
Eye Damage 1 H318 Causes serious eye damage.



GHS07

Skin Irritation 2 H315 Causes skin irritation.

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



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**
hydrochloric acid
nitric acid
- **Hazard statements**
H290 May be corrosive to metals.
H315 Causes skin irritation.
H318 Causes serious eye damage.
- **Precautionary statements**
P280 Wear protective gloves / eye protection / face protection.
P234 Keep only in original container.
P264 Wash thoroughly after handling.

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- P310 Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P302+P352 If on skin: Wash with plenty of water.
P390 Absorb spillage to prevent material damage.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362+P364 Take off contaminated clothing and wash it before reuse.
P406 Store in corrosive resistant container with a resistant inner liner.

· **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:**

7647-01-0	hydrochloric acid	4.38%
7697-37-2	nitric acid	1.98%
7664-39-3	hydrogen fluoride	0.1%

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. Then 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.

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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**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
- **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:

7647-01-0	hydrochloric acid	1.8 ppm
7697-37-2	nitric acid	0.16 ppm
87-69-4	(+)-tartaric acid	1.6 mg/m ³
7664-39-3	hydrogen fluoride	1.0 ppm
7446-07-3	tellurium dioxide	0.38 mg/m ³
12055-23-1	hafnium dioxide	0.59 mg/m ³
7440-06-4	platinum	3 mg/m ³
7440-36-0	antimony	1.5 mg/m ³
7440-57-5	gold, soluble compounds as Au	0.46 mg/m ³

· PAC-2:

7647-01-0	hydrochloric acid	22 ppm
7697-37-2	nitric acid	24 ppm
87-69-4	(+)-tartaric acid	17 mg/m ³
7664-39-3	hydrogen fluoride	24 ppm
7446-07-3	tellurium dioxide	10 mg/m ³
12055-23-1	hafnium dioxide	6.5 mg/m ³
7440-06-4	platinum	33 mg/m ³
7440-36-0	antimony	13 mg/m ³
7440-57-5	gold, soluble compounds as Au	5.1 mg/m ³

· PAC-3:

7647-01-0	hydrochloric acid	100 ppm
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7697-37-2	nitric acid	92 ppm
87-69-4	(+)-tartaric acid	100 mg/m ³
7664-39-3	hydrogen fluoride	44 ppm
7446-07-3	tellurium dioxide	63 mg/m ³
12055-23-1	hafnium dioxide	39 mg/m ³
7440-06-4	platinum	200 mg/m ³
7440-36-0	antimony	80 mg/m ³
7440-57-5	gold, soluble compounds as Au	30 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.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

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

7647-01-0 hydrochloric acid

PEL	Ceiling limit value: 7 mg/m ³ , 5 ppm
REL	Ceiling limit value: 7 mg/m ³ , 5 ppm
TLV	Ceiling limit value: 2 ppm
	A4

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: 10 mg/m ³ , 4 ppm
	Long-term value: 5.2 mg/m ³ , 2 ppm

7664-39-3 hydrogen fluoride

PEL	Long-term value: 1* mg/m ³ , 3 ppm as F, *sulfuric acid
REL	Long-term value: 2.5 mg/m ³ , 3 ppm
	Ceiling limit value: 5* mg/m ³ , 6* ppm
	*15-min, as F

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TLV	Long-term value: 0.5 ppm Ceiling limit value: 2 ppm as F; Skin, BEI
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Ingredients with biological limit values:
7664-39-3 hydrogen fluoride

BEI	2 mg/L Medium: urine Time: prior to shift Parameter: Fluorides (background, non-specific)
	3 mg/L Medium: urine Time: end of shift Parameter: Fluorides (background, non-specific)

· **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 skin.
Avoid contact with the eyes and skin.

· **Breathing equipment:**

When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

· **Protection of hands:**

Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

· **Material of gloves**

For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· **Penetration time of glove material**

For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: >4 hours

· **Eye protection:**



Tightly sealed goggles

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9 Physical and chemical properties

· Information on basic physical and chemical properties	
· General Information	
· Appearance:	
Form:	Fluid
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:	Not applicable.
· Decomposition temperature:	Not determined.
· Ignition temperature:	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:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	
Not determined.	
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Water:	93.3 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	0.2 %
· Other information	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

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- **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:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	20,222 mg/kg
Dermal	LD50	5,000 mg/kg
Inhalative	LC50/4 h	500 mg/L

7647-01-0 hydrochloric acid

Oral	LD50	900 mg/kg (rabbit)
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7697-37-2 nitric acid

Inhalative	LC50/4 h	67 mg/L (rat)
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7664-39-3 hydrogen fluoride

Oral	LD50	1,276 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **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)**

7647-01-0	hydrochloric acid	3
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- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **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.

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- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **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.

14 Transport information

- | | |
|---|--|
| · UN-Number | UN3264 |
| · DOT, IMDG, IATA | |
| · UN proper shipping name | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid) |
| · DOT | |
| · IMDG, IATA | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROCHLORIC ACID) |
| · Transport hazard class(es) | |
| · DOT | |
|  | |
| · Class | 8 Corrosive substances |
| · Label | 8 |
| · IMDG, IATA | |
|  | |
| · Class | 8 Corrosive substances |
| · Label | 8 |
| · Packing group | |
| · DOT, IMDG, IATA | II |

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· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Corrosive substances
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG1) Acids
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Segregation Code	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROCHLORIC ACID), 8, II

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):

7647-01-0	hydrochloric acid
7697-37-2	nitric acid
7664-39-3	hydrogen fluoride

· Section 313 (Specific toxic chemical listings):

7647-01-0	hydrochloric acid
7697-37-2	nitric acid
7664-39-3	hydrogen fluoride
7440-36-0	antimony

· TSCA (Toxic Substances Control Act):

7732-18-5	water	ACTIVE
7647-01-0	hydrochloric acid	ACTIVE
7697-37-2	nitric acid	ACTIVE
87-69-4	(+)-tartaric acid	ACTIVE

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7664-39-3	hydrogen fluoride	ACTIVE
7446-07-3	tellurium dioxide	ACTIVE
12055-23-1	hafnium dioxide	ACTIVE
7440-06-4	platinum	ACTIVE
7440-36-0	antimony	ACTIVE
7440-57-5	gold, soluble compounds as Au	ACTIVE

· Hazardous Air Pollutants

7647-01-0	hydrochloric acid
7664-39-3	hydrogen fluoride

· Proposition 65
· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories
· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

7647-01-0	hydrochloric acid	A4
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· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Department issuing SDS: Document Control / Regulatory

· Contact: pdl-acg-regulatory-cq@agilent.com

· Date of preparation / last revision 06/25/2025 / 6

· 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)

LC50: Lethal concentration, 50 percent

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LD50: Lethal dose, 50 percent
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
BEI: Biological Exposure Limit
Corrosive to Metals 1: Corrosive to metals – Category 1
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Damage 1: Serious eye damage/eye irritation – Category 1
· *** Data compared to the previous version altered.**

US