

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

Printing date 05/22/2020

Reviewed on 05/22/2020

## 1 Identification

- **Product identifier**
- **Trade name:** ICP Multielement Calibration Standard 10
- **Article number:** ICP-MCS-10
- **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**



GHS05 Corrosion

Met. Corr. 1 H290 May be corrosive to metals.  
Skin Corr. 1A H314 Causes severe skin burns and eye damage.  
Eye Dam. 1 H318 Causes serious eye damage.

- **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:**  
nitric acid
- **Hazard statements**  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**  
Keep only in original container.

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Do not breathe dusts or mists.  
Wash thoroughly after handling.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If swallowed: Rinse mouth. Do NOT induce vomiting.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
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/doctor.  
Specific treatment (see on this label).  
Wash contaminated clothing before reuse.  
Absorb spillage to prevent material damage.  
Store locked up.  
Store in corrosive resistant container with a resistant inner liner.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **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	4.0%
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· **Chemical identification of the substance/preparation**

7732-18-5	water, distilled, conductivity or of similar purity	95.37%
513-77-9	barium carbonate	0.2%
7429-90-5	aluminium	0.2%
7439-89-6	iron	0.1%
7440-48-4	cobalt	0.05%

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7803-55-6	Ammonium Vanadate	0.05%
7440-50-8	copper	0.025%
543-81-7	beryllium acetate	0.005%

**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:** Drink copious amounts of water and provide fresh air. Immediately call a 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**  
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
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 item 13.  
Ensure adequate ventilation.
- **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.

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**· Protective Action Criteria for Chemicals**

**· PAC-1:**

7697-37-2	nitric acid	0.16 ppm
513-77-9	barium carbonate	2.2 mg/m <sup>3</sup>
7439-89-6	iron	3.2 mg/m <sup>3</sup>
7440-48-4	cobalt	0.18 mg/m <sup>3</sup>
7803-55-6	Ammonium Vanadate	0.01 mg/m <sup>3</sup>
7440-50-8	copper	3 mg/m <sup>3</sup>

**· PAC-2:**

7697-37-2	nitric acid	24 ppm
513-77-9	barium carbonate	270 mg/m <sup>3</sup>
7439-89-6	iron	35 mg/m <sup>3</sup>
7440-48-4	cobalt	2 mg/m <sup>3</sup>
7803-55-6	Ammonium Vanadate	0.11 mg/m <sup>3</sup>
7440-50-8	copper	33 mg/m <sup>3</sup>

**· PAC-3:**

7697-37-2	nitric acid	92 ppm
513-77-9	barium carbonate	1,600 mg/m <sup>3</sup>
7439-89-6	iron	150 mg/m <sup>3</sup>
7440-48-4	cobalt	20 mg/m <sup>3</sup>
7803-55-6	Ammonium Vanadate	80 mg/m <sup>3</sup>
7440-50-8	copper	200 mg/m <sup>3</sup>

**7 Handling and storage**

**· Handling:**

**· Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

**· Information about protection against explosions and fires:** Keep respiratory protective device available.

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

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **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:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	colorless
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	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:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

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

· **Density at 20 °C (68 °F):** 1.04394 g/cm<sup>3</sup> (8.71168 lbs/gal)

· <b>Bulk density:</b>	1,034 kg/m <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.

· **Solubility in / Miscibility with**

· **Water:** Fully miscible.

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

· **Viscosity:**

· **Dynamic:** Not determined.

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<b>Kinematic:</b>	Not determined.
<b>Solvent content:</b>	
<b>Water:</b>	95.4 %
<b>VOC content:</b>	0.00 % 0.0 g/l / 0.00 lb/gal
<b>Solids content:</b>	0.6 %
<b>Other information</b>	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:**

<b>LD/LC50 values that are relevant for classification:</b>		
<b>7803-55-6 Ammonium Vanadate</b>		
Oral	LD50	160 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:**  
Strong caustic effect.  
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:  
Corrosive  
Irritant  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **Carcinogenic categories**

<b>IARC (International Agency for Research on Cancer)</b>		
7440-48-4	cobalt	2B
543-81-7	beryllium acetate	I

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**· NTP (National Toxicology Program)**

7440-48-4	cobalt	R
543-81-7	beryllium acetate	K

**· 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.
- **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

· <b>UN-Number</b>	UN3264
· <b>DOT, ADR, IMDG, IATA</b>	
· <b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
· <b>DOT</b>	

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· **ADR** 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)  
 · **IMDG, IATA** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

· **Transport hazard class(es)**

· **DOT**



· **Class** 8 Corrosive substances  
 · **Label** 8

· **ADR**



· **Class** 8 (C1) Corrosive substances  
 · **Label** 8

· **IMDG, IATA**



· **Class** 8 Corrosive substances  
 · **Label** 8

· **Packing group**

· **DOT, ADR, IMDG, IATA** III

· **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** Acids

· **Stowage Category** A

· **Stowage Code** SW2 Clear of living quarters.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

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**· Transport/Additional information:**

**· DOT**

**· Quantity limitations**

*On passenger aircraft/rail: 5 L  
On cargo aircraft only: 60 L*

**· ADR**

**· Excepted quantities (EQ)**

*Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml*

**· IMDG**

**· Limited quantities (LQ)**

**· Excepted quantities (EQ)**

*5L  
Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml*

**· UN "Model Regulation":**

*UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(NITRIC ACID), 8, III*

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

7697-37-2	nitric acid
513-77-9	barium carbonate
7429-90-5	aluminium
7440-48-4	cobalt
7803-55-6	Ammonium Vanadate
7440-50-8	copper
543-81-7	beryllium acetate

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

7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE
7697-37-2	nitric acid	ACTIVE
513-77-9	barium carbonate	ACTIVE
7429-90-5	aluminium	ACTIVE
7439-89-6	iron	ACTIVE
7440-48-4	cobalt	ACTIVE
7803-55-6	Ammonium Vanadate	ACTIVE

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7440-50-8	copper	ACTIVE
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**· Hazardous Air Pollutants**

7440-48-4	cobalt
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**· Proposition 65**

**· Chemicals known to cause cancer:**

7440-48-4	cobalt
543-81-7	beryllium acetate

**· 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)**

513-77-9	barium carbonate	D, CBD(inh), NL(oral)
7440-50-8	copper	D

**· TLV (Threshold Limit Value established by ACGIH)**

513-77-9	barium carbonate	A4
7429-90-5	aluminium	A4
7440-48-4	cobalt	A3

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

543-81-7	beryllium acetate
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**· 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:**

nitric acid

**· Hazard statements**

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

**· Precautionary statements**

Keep only in original container.  
Do not breathe dusts or mists.

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Wash thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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/doctor.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

Absorb spillage to prevent material damage.

Store locked up.

Store in corrosive resistant container with a resistant inner liner.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **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** 05/22/2020 / -

· **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

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)

LC50: Lethal concentration, 50 percent

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

Met. Corr. 1: Corrosive to metals – Category 1

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1