

## Safety Data Sheet

acc. to OSHA HCS

Printing date 03/29/2019

Version Number 2

Reviewed on 03/27/2019

### 1 Identification

- **Product identifier**
- **Trade name:** ICP-MS Plasma Setup Standard
- **Part number:** IMS-133, IMS-133-L
- **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**  
The product is not classified, according to the Globally Harmonized System (GHS).

- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **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:** Void

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#### 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **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:** 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).
- **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                |
| 7664-39-3  | hydrogen fluoride                       | 1.0 ppm                 |
| 3251-23-8  | copper dinitrate                        | 8.9 mg/m <sup>3</sup>   |
| 1310-53-8  | germanium dioxide                       | 3.8 mg/m <sup>3</sup>   |
| 10022-68-1 | Nitric acid, cadmium salt, tetrahydrate | 0.27 mg/m <sup>3</sup>  |
| 12037-01-3 | terbium oxide                           | 30 mg/m <sup>3</sup>    |
| 10102-45-1 | thallium nitrate                        | 0.078 mg/m <sup>3</sup> |
| 10099-74-8 | lead dinitrate                          | 0.24 mg/m <sup>3</sup>  |
| 12060-08-1 | scandium oxide                          | 30 mg/m <sup>3</sup>    |
| 13446-18-9 | magnesium nitrate hexahydrate           | 16 mg/m <sup>3</sup>    |

- **PAC-2:**

|           |                   |        |
|-----------|-------------------|--------|
| 7697-37-2 | nitric acid       | 24 ppm |
| 7664-39-3 | hydrogen fluoride | 24 ppm |

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|            |   |                       |
|------------|---|-----------------------|
| 3251-23-8  | copper dinitrate                        | 31 mg/m <sup>3</sup>  |
| 1310-53-8  | germanium dioxide                       | 41 mg/m <sup>3</sup>  |
| 10022-68-1 | Nitric acid, cadmium salt, tetrahydrate | 2.1 mg/m <sup>3</sup> |
| 12037-01-3 | terbium oxide                           | 330 mg/m <sup>3</sup> |
| 10102-45-1 | thallium nitrate                        | 4.3 mg/m <sup>3</sup> |
| 10099-74-8 | lead dinitrate                          | 180 mg/m <sup>3</sup> |
| 12060-08-1 | scandium oxide                          | 330 mg/m <sup>3</sup> |
| 13446-18-9 | magnesium nitrate hexahydrate           | 180 mg/m <sup>3</sup> |

**· PAC-3:**

|            |   |                         |
|------------|---|-------------------------|
| 7697-37-2  | nitric acid                             | 92 ppm                  |
| 7664-39-3  | hydrogen fluoride                       | 44 ppm                  |
| 3251-23-8  | copper dinitrate                        | 190 mg/m <sup>3</sup>   |
| 1310-53-8  | germanium dioxide                       | 250 mg/m <sup>3</sup>   |
| 10022-68-1 | Nitric acid, cadmium salt, tetrahydrate | 13 mg/m <sup>3</sup>    |
| 12037-01-3 | terbium oxide                           | 2,000 mg/m <sup>3</sup> |
| 10102-45-1 | thallium nitrate                        | 26 mg/m <sup>3</sup>    |
| 10099-74-8 | lead dinitrate                          | 1,100 mg/m <sup>3</sup> |
| 12060-08-1 | scandium oxide                          | 2,000 mg/m <sup>3</sup> |
| 13446-18-9 | magnesium nitrate hexahydrate           | 1,100 mg/m <sup>3</sup> |

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **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:** None.
- **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 product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.

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- **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:** Goggles recommended during refilling.

### 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Fluid

Color: Colorless

- **Odor:** Odorless

- **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.

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- |   |  |
|---|--|
| <b>· Solubility in / Miscibility with Water:</b>  | Not miscible or difficult to mix.          |
| <b>· Partition coefficient (n-octanol/water):</b> | Not determined.                            |
| <b>· Viscosity:</b>                               |  |
| <b>Dynamic:</b>                                   | Not determined.                            |
| <b>Kinematic:</b>                                 | Not determined.                            |
| <b>· Solvent content:</b>                         |  |
| <b>Water:</b>                                     | 99.2 %                                     |
| <b>VOC content:</b>                               | 0.00 %                                     |
|   | 0.0 g/l / 0.00 lb/gal                      |
| <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>ATE (Acute Toxicity Estimate)</b>                          |          |                       |
| Oral  | LD50     | 1,276,000 mg/kg (rat) |
| Dermal  | LD50     | 5,000 mg/kg           |
| Inhalative  | LC50/4 h | 500 mg/L              |
| <b>7664-39-3 hydrogen fluoride</b>                            |          |                       |
| Oral  | LD50     | 1,276 mg/kg (rat)     |

|   |          |                       |
|---|----------|-----------------------|
| <b>· LD/LC50 values that are relevant for classification:</b> |          |                       |
| <b>ATE (Acute Toxicity Estimate)</b>                          |          |                       |
| Oral  | LD50     | 1,276,000 mg/kg (rat) |
| Dermal  | LD50     | 5,000 mg/kg           |
| Inhalative  | LC50/4 h | 500 mg/L              |

|                                    |      |                   |
|------------------------------------|------|-------------------|
| <b>7664-39-3 hydrogen fluoride</b> |      |                   |
| Oral                               | LD50 | 1,276 mg/kg (rat) |

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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**· Carcinogenic categories**
**· IARC (International Agency for Research on Cancer)**

|            |   |    |
|------------|---|----|
| 10022-68-1 | Nitric acid, cadmium salt, tetrahydrate | 1  |
| 10099-74-8 | lead dinitrate                          | 2A |

**· NTP (National Toxicology Program)**

|            |   |   |
|------------|---|---|
| 10022-68-1 | Nitric acid, cadmium salt, tetrahydrate | K |
| 10099-74-8 | lead dinitrate                          | 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.

**· 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.

**· 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:** Smaller quantities can be disposed of with household waste.

**· Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

**· UN-Number**

- **DOT, ADN, IMDG, IATA** not regulated

**· UN proper shipping name**

- **DOT, ADN, IMDG, IATA** not regulated

**· Transport hazard class(es)**

- **DOT, ADN, IMDG, IATA**
- **Class** not regulated

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|   |                 |
|---|-----------------|
| · <b>Packing group</b>  |                 |
| · <b>DOT, IMDG, IATA</b>  | not regulated   |
| · <b>Environmental hazards:</b>   | Not applicable. |
| · <b>Special precautions for user</b>   | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL/73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>   | not regulated   |

### 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       |
| 7664-39-3 | hydrogen fluoride |

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

|            |   |
|------------|---|
| 7697-37-2  | nitric acid                             |
| 7664-39-3  | hydrogen fluoride                       |
| 3251-23-8  | copper dinitrate                        |
| 10022-68-1 | Nitric acid, cadmium salt, tetrahydrate |
| 10102-45-1 | thallium nitrate                        |
| 10099-74-8 | lead dinitrate                          |
| 13446-18-9 | magnesium nitrate hexahydrate           |

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

|            |                   |
|------------|-------------------|
| 7697-37-2  | nitric acid       |
| 7664-39-3  | hydrogen fluoride |
| 3251-23-8  | copper dinitrate  |
| 1310-53-8  | germanium dioxide |
| 12037-01-3 | terbium oxide     |
| 10102-45-1 | thallium nitrate  |
| 10099-74-8 | lead dinitrate    |
| 12060-08-1 | scandium oxide    |
| 7732-18-5  | water             |

**· Proposition 65**
**· Chemicals known to cause cancer:**

|            |   |
|------------|---|
| 10022-68-1 | Nitric acid, cadmium salt, tetrahydrate |
| 10099-74-8 | lead dinitrate                          |

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

None of the ingredients is listed.

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**· 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)**

|            |                  |    |
|------------|------------------|----|
| 10102-45-1 | thallium nitrate | II |
| 10099-74-8 | lead dinitrate   | B2 |

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

|            |                |    |
|------------|----------------|----|
| 10099-74-8 | lead dinitrate | A3 |
|------------|----------------|----|

**· 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:** regulatory@ultrasci.com

**· Date of preparation / last revision** 03/29/2019 / 1

**· 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 &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

**· \* Data compared to the previous version altered.**