

acc. to OSHA HCS

Printing date 10/04/2018

Review date 10/04/2018

1 Identification

- **Product identifier**
- **Trade name:** STD-5 ICPMS MULTIELEMENT CAL
- **Article number** N9300235
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600

- **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

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**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Hazardous components:** Void

· Additional Components

7697-37-2	Nitric Acid  Ox. Liq. 2, H272  Skin Corr. 1A, H314	0.9%
7664-39-3	hydrofluoric acid  Flam. Liq. 1, H224	0.2%
7440-03-1	niobium	0.001%
7440-15-5	rhenium  Ox. Sol. 2, H272	0.001%
7440-21-3	alkali fluorosilicates (NH4)	0.001%
7440-25-7	tantalum	0.001%
7440-32-6	titanium  Self-heat. 1, H251; Water-react. 1, H260	0.001%
7440-33-7	tungsten	0.001%
7440-42-8	boron  Acute Tox. 3, H301	0.001%
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	0.001%
7440-67-7	zirconium  Pyr. Sol. 1, H250; Water-react. 1, H260	0.001%
7723-14-0	red phosphorus  Flam. Sol. 1, H228	0.001%
7783-20-2	ammonium sulphate  Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.001%
7439-98-7	molybdenum	0.001%
7732-18-5	Water	98.888%

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.
- **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** Not required.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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).
- **Reference to other sections**
No dangerous substances are released.
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	hydrofluoric acid	1.0 ppm
7440-03-1	niobium	30 mg/m ³
7440-25-7	tantalum	10 mg/m ³
7440-32-6	titanium	30 mg/m ³
7440-33-7	tungsten	10 mg/m ³
7440-42-8	boron	1.9 mg/m ³
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	3.2 mg/m ³
7440-67-7	zirconium	10 mg/m ³
7723-14-0	red phosphorus	0.27 mg/m ³
7783-20-2	ammonium sulphate	13 mg/m ³
7439-98-7	molybdenum	30 mg/m ³

· **PAC-2:**

7697-37-2	Nitric Acid	24 ppm
7664-39-3	hydrofluoric acid	24 ppm
7440-03-1	niobium	330 mg/m ³
7440-25-7	tantalum	11 mg/m ³
7440-32-6	titanium	330 mg/m ³
7440-33-7	tungsten	330 mg/m ³

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7440-42-8	boron	21 mg/m ³
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	35 mg/m ³
7440-67-7	zirconium	83 mg/m ³
7723-14-0	red phosphorus	3 mg/m ³
7783-20-2	ammonium sulphate	140 mg/m ³
7439-98-7	molybdenum	330 mg/m ³

PAC-3:

7697-37-2	Nitric Acid	92 ppm
7664-39-3	hydrofluoric acid	44 ppm
7440-03-1	niobium	2,000 mg/m ³
7440-25-7	tantalum	64 mg/m ³
7440-32-6	titanium	2,000 mg/m ³
7440-33-7	tungsten	2,000 mg/m ³
7440-42-8	boron	130 mg/m ³
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	170 mg/m ³
7440-67-7	zirconium	500 mg/m ³
7723-14-0	red phosphorus	18 mg/m ³
7783-20-2	ammonium sulphate	840 mg/m ³
7439-98-7	molybdenum	2,000 mg/m ³

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.

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
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:** Goggles recommended during refilling.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Liquid
Color:	Transparent
Odor:	Characteristic
Odor threshold:	Not determined.
- **pH-value:** Not determined.
- **Change in condition**

Melting point/Melting range:	0 °C (32 °F)
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 g/cm³ (8.345 lbs/gal)
- **Relative density** Not determined.
- **Vapor density** Not determined.

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· 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:	98.9 %
VOC content:	0.00 %
· 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:** 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.

· **Carcinogenic categories**

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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· **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:** 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:** Smaller quantities can be disposed of with household waste.
- **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 | Void |
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · UN proper shipping name | Void |
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · Transport hazard class(es) | Void |
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · Class | Void |
| · Packing group | Void |
| · DOT, ADR, IMDG, IATA | Void |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |

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- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** *Not applicable.*
- **UN "Model Regulation":** *Non regulated according to above specifications. Void*

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

7732-18-5	Water		98.888%
7697-37-2	Nitric Acid	 Ox. Liq. 2, H272  Skin Corr. 1A, H314	0.9%
7664-39-3	hydrofluoric acid	 Flam. Liq. 1, H224	0.2%

· **Sara**

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

7697-37-2	Nitric Acid
7664-39-3	hydrofluoric acid
7723-14-0	red phosphorus

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

7697-37-2	Nitric Acid
7664-39-3	hydrofluoric acid
7723-14-0	red phosphorus
7783-20-2	ammonium sulphate

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

All ingredients are listed.

7697-37-2	Nitric Acid
7664-39-3	hydrofluoric acid
7440-03-1	niobium
7440-15-5	rhenium
7440-25-7	tantalum
7440-32-6	titanium
7440-33-7	tungsten
7440-42-8	boron
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)
7440-67-7	zirconium
7723-14-0	red phosphorus
7783-20-2	ammonium sulphate
7439-98-7	molybdenum
7732-18-5	Water

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· **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.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

7440-42-8	boron	I (oral)
7723-14-0	red phosphorus	D

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

7440-67-7	zirconium	A4
7439-98-7	molybdenum	A3

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

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Generally not hazardous for water.

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

16 Other information

Disclaimer

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety

· **Contact:**

Within the USA: 1-(800)-762-4000

Outside the USA: 1-(203)-712-8488

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

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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)

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

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

USA