

acc. to OSHA HCS

Printing date 06/20/2022

Review date 06/20/2022

1 Identification

- **Product identifier**
- **Trade name:** STD-2 ICPMS MULTIELEMENT CAL
- **Article number** N9300232
- **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**



Corrosion

Skin Corrosion 1B H314 Causes severe skin burns and eye damage.
Eye Damage 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**
H314 Causes severe skin burns and eye damage.

- **Precautionary statements**

P260 Do not breathe dusts or mists.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).
P363 Wash contaminated clothing before reuse.
P405 Store locked up.

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P501 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**
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.

3 Composition/information on ingredients

- **CAS No. Description**
7732-18-5 Water
- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Hazardous components:**

7697-37-2	nitric acid	5.0%
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· **Additional Components**

7732-18-5	Water	94.983%
1312-81-8	lanthanum oxide	0.001%
1314-36-9	yttrium oxide	0.001%
7429-91-6	dysprosium	0.001%
7439-94-3	LUTETIUM	0.001%
7440-00-8	neodymium	0.001%
7440-10-0	Praseodymium	0.001%
7440-19-9	samarium	0.001%
7440-29-1	thorium	0.001%
7440-30-4	THULIUM	0.001%
7440-45-1	cerium	0.001%
7440-52-0	erbium	0.001%
7440-53-1	europium	0.001%
7440-54-2	gadolinium	0.001%

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7440-60-0	holmium	0.001%
7440-64-4	ytterbium	0.001%
12037-01-3	TERBIUM OXIDE	0.001%
12060-08-1	scandium oxide	0.001%

* **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.
- **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:**
Inform respective authorities in case of seepage into water course or sewage system.
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).
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:**

1312-81-8	lanthanum oxide	4 mg/m ³
1314-36-9	yttrium oxide	3.8 mg/m ³
7429-91-6	dysprosium	30 mg/m ³
7439-94-3	LUTETIUM	30 mg/m ³
7440-00-8	neodymium	30 mg/m ³
7440-10-0	Praseodymium	1.2 mg/m ³
7440-19-9	samarium	30 mg/m ³
7440-29-1	thorium	30 mg/m ³
7440-30-4	THULIUM	30 mg/m ³
7440-45-1	cerium	30 mg/m ³
7440-53-1	europium	30 mg/m ³
7440-54-2	gadolinium	30 mg/m ³
7440-60-0	holmium	12 mg/m ³
12037-01-3	TERBIUM OXIDE	30 mg/m ³
12060-08-1	scandium oxide	30 mg/m ³

· **PAC-2:**

1312-81-8	lanthanum oxide	44 mg/m ³
1314-36-9	yttrium oxide	43 mg/m ³
7429-91-6	dysprosium	330 mg/m ³
7439-94-3	LUTETIUM	330 mg/m ³
7440-00-8	neodymium	330 mg/m ³
7440-10-0	Praseodymium	13 mg/m ³
7440-19-9	samarium	330 mg/m ³
7440-29-1	thorium	330 mg/m ³
7440-30-4	THULIUM	330 mg/m ³
7440-45-1	cerium	330 mg/m ³
7440-53-1	europium	330 mg/m ³
7440-54-2	gadolinium	330 mg/m ³
7440-60-0	holmium	130 mg/m ³
12037-01-3	TERBIUM OXIDE	330 mg/m ³
12060-08-1	scandium oxide	330 mg/m ³

· **PAC-3:**

1312-81-8	lanthanum oxide	270 mg/m ³
1314-36-9	yttrium oxide	260 mg/m ³
7429-91-6	dysprosium	2,000 mg/m ³
7439-94-3	LUTETIUM	2,000 mg/m ³
7440-00-8	neodymium	2,000 mg/m ³
7440-10-0	Praseodymium	79 mg/m ³

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7440-19-9	samarium	2,000 mg/m ³
7440-29-1	thorium	2,000 mg/m ³
7440-30-4	THULIUM	2,000 mg/m ³
7440-45-1	cerium	2,000 mg/m ³
7440-53-1	europium	2,000 mg/m ³
7440-54-2	gadolinium	2,000 mg/m ³
7440-60-0	holmium	790 mg/m ³
12037-01-3	TERBIUM OXIDE	2,000 mg/m ³
12060-08-1	scandium oxide	2,000 mg/m ³

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:**
*The product is not flammable.
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.*

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:**
*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.*

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· **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.

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 or safety glasses

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.
Not determined.

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· 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):	1.00079 g/cm ³ (8.35159 lbs/gal)
· 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:	95.0 %
VOC content:	0.00 %
Solids content:	0.0 %
· 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:**

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

7697-37-2 nitric acid

Inhalative	LC50/4 h	2.65 mg/l (ATE)
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· **Primary irritant effect:**

· **on the skin:** Caustic effect on skin and mucous membranes.

· **on the eye:**

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

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· **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**

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

7440-29-1 | thorium

I

· **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.

· **Additional ecological information:**

· **General notes:**

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:**

Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**

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

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

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14 Transport information

· UN-Number · DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name · DOT · ADR · IMDG, IATA	Corrosive liquid, acidic, inorganic, n.o.s. 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
· Transport hazard class(es) · DOT	
	
· Class · Label	8 Corrosive substances 8
· ADR	
	
· Class · Label	8 (C1) Corrosive substances 8
· IMDG, IATA	
	
· Class · Label	8 Corrosive substances 8
· Packing group · DOT, ADR, IMDG, IATA	III
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Stowage Code · Segregation Code	Warning: Corrosive substances 80 F-A,S-B Acids A SW2 Clear of living quarters. SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides

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· 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: 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)	5L
· Excepted quantities (EQ)	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., 8, III

15 Regulatory information

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

7732-18-5	Water	94.983%
7697-37-2	nitric acid	5.0%
1312-81-8	lanthanum oxide	0.001%

· **Sara**

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

All ingredients are listed.

7732-18-5	Water	ACTIVE
1312-81-8	lanthanum oxide	ACTIVE
1314-36-9	yttrium oxide	ACTIVE
7429-91-6	dysprosium	ACTIVE
7439-94-3	LUTETIUM	ACTIVE
7440-00-8	neodymium	ACTIVE
7440-10-0	Praseodymium	ACTIVE
7440-19-9	samarium	ACTIVE
7440-29-1	thorium	ACTIVE

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7440-30-4	THULIUM	ACTIVE
7440-45-1	cerium	ACTIVE
7440-52-0	erbium	ACTIVE
7440-53-1	europium	ACTIVE
7440-54-2	gadolinium	ACTIVE
7440-60-0	holmium	ACTIVE
7440-64-4	ytterbium	ACTIVE
12037-01-3	TERBIUM OXIDE	ACTIVE
12060-08-1	scandium oxide	ACTIVE

· Hazardous Air Pollutants

None of the ingredients is listed.

· 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.

· Cancerogenity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

None of the ingredients is listed.

· 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: Water hazard class 1 (Self-assessment): slightly 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

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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

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

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

Skin Corrosion 1B: Skin corrosion/irritation – Category 1B

Eye Damage 1: Serious eye damage/eye irritation – Category 1

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