

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** TWENTY-NINE ELEMENT ICPMS STANDARD
- **Article number:** N9300233
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
PerkinElmer Life and Analytical Sciences
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
- **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

R34: Causes burns.

- **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **Label elements**

- **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Code letter and hazard designation of product:**
C Corrosive
- **Hazard-determining components of labelling:**
nitric acid
- **Risk phrases:**
34 Causes burns.
- **Safety phrases:**
 - 17 Keep away from combustible material.
 - 20 When using do not eat or drink.
 - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 - 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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60 This material and its container must be disposed of as hazardous waste.

· **Additional information:** Void

· **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

· **Chemical characterization:** Mixtures

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 7697-37-2 EINECS: 231-714-2	nitric acid	C R35; O R8 Ox. Liq. 3, H272 Skin Corr. 1A, H314	2.5-10%
· Additional Components			
CAS: 7440-22-4 EINECS: 231-131-3	silver		< 0.01%
CAS: 7429-90-5 EINECS: 231-072-3	aluminium F R15-17 Pyr. Sol. 1, H250; Water-react. 2, H261		< 0.01%
CAS: 7440-38-2 EINECS: 231-148-6	Arsenic T R23/25; N R50/53 Acute Tox. 3, H301; Acute Tox. 3, H331 Aquatic Acute 1, H400; Aquatic Chronic 1, H410		< 0.01%
CAS: 513-77-9 EINECS: 208-167-3	barium carbonate Xn R22 Acute Tox. 4, H302		< 0.01%
CAS: 7440-41-7 EINECS: 231-150-7	beryllium T+ R26; T R49-25-48/23; Xi R36/37/38; Xi R43 Carc. Cat. 2 Acute Tox. 3, H301; Acute Tox. 2, H330 Carc. 1B, H350i; STOT RE 1, H372 Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335		< 0.01%
CAS: 7440-69-9 EINECS: 231-177-4	bismuth		< 0.01%





































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CAS: 7440-43-9 EINECS: 231-152-8	cadmium (non-pyrophoric) T+ R26; T Carc. Cat. 2 R45-48/23/25; Xn R62-68-63; N R50/53 Muta. Cat. 3, Repr. Cat. 3 ----- Acute Tox. 2, H330 Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361fd; STOT RE 1, H372 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	< 0.01%
CAS: 7440-48-4 EINECS: 231-158-0	cobalt Xn R42/43 R53 ----- Resp. Sens. 1, H334 Skin Sens. 1, H317 Aquatic Chronic 4, H413	< 0.01%
CAS: 7789-02-8 EINECS: 236-921-1	Chromium Nitrate Nonahydrate Xn R20/21/22; Xi R36/37/38; O R8 ----- Ox. Sol. 2, H272 Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	< 0.01%
CAS: 7789-18-6 EINECS: 232-146-8	caesium nitrate Ox. Sol. 3, H272	< 0.01%
CAS: 7440-50-8 EINECS: 231-159-6	copper	< 0.01%
CAS: 7439-89-6 EINECS: 231-096-4	iron	< 0.01%
CAS: 7440-55-3 EINECS: 231-163-8	gallium	< 0.01%
CAS: 7439-97-6 EINECS: 231-106-7	mercury T R23; N R50/53 R33 ----- Acute Tox. 3, H331 STOT RE 2, H373 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	< 0.01%
CAS: 7440-74-6 EINECS: 231-180-0	Indium	< 0.01%
CAS: 7757-79-1 EINECS: 231-818-8	potassium nitrate O R8 ----- Ox. Sol. 2, H272	< 0.01%
CAS: 554-13-2 EINECS: 209-062-5	lithium carbonate Xn R22; Xi R36 ----- Acute Tox. 4, H302; Eye Irrit. 2, H319	< 0.01%
CAS: 7439-95-4 EINECS: 231-104-6	magnesium F R15-17 ----- Pyr. Sol. 1, H250; Water-react. 1, H260	< 0.01%
CAS: 7439-96-5 EINECS: 231-105-1	manganese Xn R48	< 0.01%

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CAS: 497-19-8 EINECS: 207-838-8	sodium carbonate  Xi R36  Eye Irrit. 2, H319	< 0.01%
CAS: 1317-36-8 EINECS: 215-267-0	lead monoxide  T Repr. Cat. 1, 3 R61;  Xn R62-20/22;  N R50/53 R33  Repr. 1A, H360Df; STOT RE 2, H373  Aquatic Acute 1, H400; Aquatic Chronic 1, H410  Acute Tox. 4, H302; Acute Tox. 4, H332	< 0.01%
CAS: 13126-12-0 EINECS: 236-060-1	rubidium nitrate  O R9  Ox. Sol. 1, H271	< 0.01%
CAS: 7782-49-2 EINECS: 231-957-4	selenium  T R23/25 R33-53  Acute Tox. 3, H301; Acute Tox. 3, H331  STOT RE 2, H373 Aquatic Chronic 4, H413	< 0.01%
CAS: 1633-05-2 EINECS: 216-643-7	strontium carbonate	< 0.01%
CAS: 10102-45-1 EINECS: 233-273-1	thallium nitrate  T+ R26/28;  N R51/53 R33  Acute Tox. 2, H300; Acute Tox. 2, H330  STOT RE 2, H373  Aquatic Chronic 2, H411	< 0.01%
CAS: 7803-55-6 EINECS: 232-261-3	ammonium trioxovanadate  T+ R28;  Xi R36/37/38  Acute Tox. 2, H300  Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	< 0.01%
CAS: 7440-66-6 EINECS: 231-175-3	zinc  F R15-17;  N R50/53  Pyr. Sol. 1, H250; Water-react. 1, H260  Aquatic Acute 1, H400; Aquatic Chronic 1, H410	< 0.01%
CAS: 7440-61-1 EINECS: 231-170-6	uranium  T+ R26/28 R33-53  Acute Tox. 2, H300; Acute Tox. 2, H330  STOT RE 2, H373 Aquatic Chronic 4, H413	< 0.01%
CAS: 7440-70-2 EINECS: 231-179-5	calcium  F R15  Water-react. 2, H261	< 0.01%
CAS: 7440-02-0 EINECS: 231-111-4	nickel  T R48/23;  Xn R40;  Xi R43 Carc. Cat. 3  Carc. 2, H351  Skin Sens. 1, H317	< 0.01%
CAS: 7732-18-5 EINECS: 231-791-2	Water	92.5-95%

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· **Additional information:** For the wording of the listed risk phrases refer to section 16.

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 plenty of water and provide fresh air. Call for a doctor immediately.
- **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 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **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 product to reach sewage system or any water course.
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).
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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.

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- **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 container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

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

7697-37-2 nitric acid

WEL () Short-term value: 2.6 mg/m³, 1 ppm

- **Additional information:** The lists valid during the making 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 and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **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.

· **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:	Liquid
Colour:	Colourless
· Odour:	Odourless
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	0 °C
Boiling point/Boiling range:	100 °C
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	
Decomposition temperature:	Not determined.
· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure at 20 °C:	23 hPa
· Density at 20 °C:	1 g/cm ³
· Relative density	Not determined.
· Vapour 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:	
Organic solvents:	0.0 %
Water:	95.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **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.

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- **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:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour 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 sewage 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 together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.



14 Transport information

- **UN-Number**
- **ADR, IMDG, IATA** UN3264

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· UN proper shipping name	
· ADR	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
	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)	
· ADR	
	
· Class	8 (C1) Corrosive substances.
· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances.
· Label	8
· Packing group	
· ADR, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Corrosive substances.
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Transport category	2
· Tunnel restriction code	E
· UN "Model Regulation":	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, II

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Code letter and hazard designation of product:**
C Corrosive
- **Hazard-determining components of labelling:**
nitric acid
- **Risk phrases:**
34 Causes burns.
- **Safety phrases:**
 - 17 Keep away from combustible material.
 - 20 When using do not eat or drink.
 - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 - 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 - 60 This material and its container must be disposed of as hazardous waste.
- **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.
- **Waterhazard 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 these are the only hazards which exist. PerkinElmer Life and Analytical Sciences shall not be held liable for any damage resulting from handling or from contact with the product.

Relevant phrases

- H272 May intensify fire; oxidiser.
- H314 Causes severe skin burns and eye damage.
- R35 Causes severe burns.
- R8 Contact with combustible material may cause fire.

Department issuing MSDS:

PerkinElmer
Chalfont Road
Buckinghamshire
Seer Green
HP9 2FX
United Kingdom

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Telephone : 0800-89 60 46

FAX : 0800-89 17 14

· **Contact:**

With in the USA: 1-(800)-762-4000

Out side 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 Organization

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

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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

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