PerkinElmer
For the Better

acc. to ISO 11014

Printing date 02/08/2011 Review date 02/08/2011

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

· **Product identifier**

· **Trade name:** TWELVE ELEMENT ICPMS STANDARD
· **Article number** N9300235
· **Relevant identified uses of the substance or mixture and uses advised against**
· **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 U.S.) 800 424-9300
CHEMTREC (from outside U.S.) 1(703)-572-3887

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2 Hazards identification

· **Classification of the substance or mixture**

GHS06 Skull and crossbones

H311 Toxic in contact with skin.

GHS07

H302 Harmful if swallowed.

H333 May be harmful if inhaled.

· **Label elements**
· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS06
· **Signal word** Danger

· **Hazard-determining components of labelling:**
HYDROFLUORIC ACID
· **Hazard statements**
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H333 May be harmful if inhaled.
· **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P361 Remove/Take off immediately all contaminated clothing.
P322 Specific measures (see on this label).
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **Other hazards**
· **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:**			
7664-39-3	HYDROFLUORIC ACID	H300; H310; H330 H314	< 1%

· **Additional Components**			
7697-37-2	nitric acid	H272 H314	< 1%
10043-35-3	boric acid	H360	< 0.01%
7440-56-4	germanium		< 0.01%
1313-27-5	molybdenum trioxide	H373 H319; H335	< 0.01%
7440-03-1	niobium		< 0.01%
7722-76-1	ammonium dihydrogenorthophosphate		< 0.01%
7440-15-5	rhenium		< 0.01%
7440-21-3	silicon	H228	< 0.01%
7704-34-9	sulphur, precipitated, sublimed or colloidal	H228	< 0.01%
7440-25-7	tantalum		< 0.01%
7440-32-6	titanium	H251; H260	< 0.01%
1314-35-8	tungsten trioxide	H301	< 0.01%
7440-67-7	zirconium powder (pyrophoric)	H250; H260	< 0.01%
7732-18-5	Water		50-100%

· **SVHC**	
10043-35-3	boric acid

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4 First aid measures

· **Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
· **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:** 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.

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5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing 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:** Mouth respiratory protective device.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **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.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
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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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:** 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 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:**	
7664-39-3 HYDROFLUORIC ACID	
PEL	3 ppm as F
REL	Short-term value: C 5* mg/m³, C 6* ppm Long-term value: 2.5 mg/m³, 3 ppm *15-min, as F
TLV	Short-term value: C 1.64 mg/m³, C 2* ppm Long-term value: 0.41 mg/m³, 0.5* ppm *as F; Skin; BEI

· **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.
Wash hands before breaks and at the end of work.
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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· **Eye protection:** Goggles recommended during refilling.

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Dark brown to black
· **Odor:**	Characteristic
· **Odour 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.
· **Ignition temperature:**	
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 mm Hg)
· **Density at 20°C (68°F):**	1 g/cm³ (8.345 lbs/gal)
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Segregation coefficient (n-octonol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
Water:	100.0 %
· **Other information**	No further relevant information available.

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10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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· **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.

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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.

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12 Ecological information

· **Toxicity**
· **Acquatic 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:** Generally not hazardous for water
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

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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.

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14 Transport information

· **DOT regulations:**

· **Hazard class:** 8
· **Identification number:** UN3264

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· Packing group:	III
· Proper shipping name (technical name):	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID)
· Label	8

· Land transport ADR/RID (cross-border):

· ADR/RID class:	8 (C1) Corrosive substances
· Danger code (Kemler):	80
· UN-Number:	3264
· Packaging group:	III
· Label:	8
· UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID) 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROGEN FLUORIDE)

· Maritime transport IMDG:

· IMDG Class:	8
· UN Number:	3264
· Label	8
· Packaging group:	III
· EMS Number:	F-A,S-B
· Marine pollutant:	No
· Segregation groups	Acids
· Propper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID)

· Air transport ICAO-TI and IATA-DGR:

· ICAO/IATA Class:	8
· UN/ID Number:	3264
· Label	8
· Packaging group:	III
· Proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID)

· UN "Model Regulation": UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 8, III
· Special precautions for user Warning: Corrosive substances
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

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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

· **Section 313 (Specific toxic chemical listings):**	
7697-37-2	nitric acid
1313-27-5	molybdenum trioxide

· **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.

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**		
10043-35-3	boric acid	A4
7440-67-7	zirconium powder (pyrophoric)	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS06
· **Signal word** Danger

· **Hazard-determining components of labelling:**
HYDROFLUORIC ACID
· **Hazard statements**
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H333 May be harmful if inhaled.
· **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P361 Remove/Take off immediately all contaminated clothing.
P322 Specific measures (see on this label).
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

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P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P405 Store locked up.
P501 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

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.

· **Department issuing MSDS:** Safety and Health
· **Contact:**
With in the USA: 1-(800)-762-4000
Out side the USA: 1-(203)-712-8488
· **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)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
· ***** Data compared to the previous version altered.**