



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/10/2015

Version 1.5

## SECTION 1. Identification

### Product identifier

Product number	110580
Product name	ICP multi-element standard solution VI for ICP-MS (30 elements in dilute nitric acid) CertiPUR®

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Use restricted under TSCA to research and development or as analytical reagent. Uses regulated under FDA or FIFRA are not affected. Reagent for analysis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Corrosive to Metals, Category 1, H290  
Skin corrosion, Category 1B, H314  
Serious eye damage, Category 1, H318  
Skin sensitization, Category 1, H317  
Carcinogenicity, Category 1B, Inhalation, H350i

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Danger

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### *Hazard Statements*

H350i May cause cancer by inhalation.  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.

### *Precautionary Statements*

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P234 Keep only in original container.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
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): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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 or doctor/ physician.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.  
P405 Store locked up.  
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.  
P501 Dispose of contents/ container to an approved waste disposal plant.

### **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Chemical nature	Nitric acid solution.
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### **Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.

*nitric acid* ( $\geq 5\%$  -  $< 10\%$ )

7697-37-2

Exact percentages are being withheld as a trade secret.

*beryllium acetate, basic* ( $\geq 0.1\%$  -  $< 1\%$ )

19049-40-2

Exact percentages are being withheld as a trade secret.

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### SECTION 4. First aid measures

#### Description of first-aid measures

##### *General advice*

First aider needs to protect himself.

##### *Inhalation*

After inhalation: fresh air. Call in physician.

##### *Skin contact*

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

##### *Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

##### *Ingestion*

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

#### Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Allergic reactions, Cough, Shortness of breath

The following applies to nitrites/nitrates in general: methemoglobinemia after the uptake of large quantities.

Risk of blindness!

#### Indication of any immediate medical attention and special treatment needed

No information available.

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### SECTION 5. Fire-fighting measures

#### Extinguishing media

##### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

##### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

#### Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

#### Advice for firefighters

##### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

##### *Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### SECTION 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

#### Environmental precautions

Do not let product enter drains.

#### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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### SECTION 7. Handling and storage

#### Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

#### Conditions for safe storage, including any incompatibilities

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at +15°C to +25°C (+59°F to +77°F).

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Ingredients

Basis	Value	Threshold limits	Remarks
<i>nitric acid 7697-37-2</i>			
ACGIH	Time Weighted Average (TWA):	2 ppm	
	Short Term Exposure Limit (STEL):	4 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	2 ppm 5 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	4 ppm 10 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	2 ppm 5 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	2 ppm 5 mg/m <sup>3</sup>	
	Short Term Exposure Limit (STEL):	4 ppm 10 mg/m <sup>3</sup>	
<i>beryllium acetate , basic 19049-40-2</i>			
NIOSH/GUIDE	Ceiling Limit Value and Time Period (if specified):	0.0005 mg/m <sup>3</sup>	Expressed as: as Be
OSHA/Z2	Time Weighted Average (TWA):	0.002 mg/m <sup>3</sup>	
	Ceiling Limit Value:	0.005 mg/m <sup>3</sup>	
	Maximum concentration:	0.025 mg/m <sup>3</sup>	Ceiling Limit Value 30 minutes
ACGIH	Time Weighted Average (TWA):	0.00005 mg/m <sup>3</sup>	Form of exposure: Inhalable fraction. Expressed as: as Be

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

### Eye/face protection

Tightly fitting safety goggles

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### *Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

### *Other protective equipment:*

Acid-resistant protective clothing.

### *Respiratory protection*

required when vapors/aerosols are generated.

Recommended Filter type: filter E-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	No information available.
pH	ca. 0.5 at 20 °C (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	Not applicable
Evaporation rate	No information available.

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Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	1.03 g/cm <sup>3</sup> at 20 °C (20 °C)
Relative density	No information available.
Water solubility	at 20 °C (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Corrosion	May be corrosive to metals.

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### SECTION 10. Stability and reactivity

#### Reactivity

See below

#### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### Possibility of hazardous reactions

Violent reactions possible with:

The generally known reaction partners of water.

increased reactivity with:

oxidizable substances, organic solvent, Metals, metal alloys, Alkali metals, Alkaline earth metals, Ammonia, alkalines, acids

#### Conditions to avoid

no information available

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### Incompatible materials

Metals, metal alloys

### Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Eye contact, Skin contact

#### *Target Organs*

Eyes

Skin

Respiratory system

teeth

#### *Acute oral toxicity*

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute toxicity estimate: > 2,000 mg/kg

Calculation method

#### *Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Irritation symptoms in the respiratory tract., Possible damages:, damage of respiratory tract

Acute toxicity estimate: > 5 mg/l; 4 h ; dust/mist

Calculation method

#### *Skin irritation*

Mixture causes burns.

#### *Eye irritation*

Mixture causes serious eye damage.

Risk of blindness!

#### *Sensitization*

Mixture may cause an allergic skin reaction.

#### *CMR effects*

Carcinogenicity:

May cause cancer by inhalation.

#### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

#### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

#### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.



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### Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	A1: Confirmed human carcinogen beryllium acetate , basic 19049-40-2

### Further information

Systemic effects:

After uptake:

Irritation and corrosion, Allergic reactions, Cough, Shortness of breath

The following applies to beryllium compounds in general: carcinogenic in animal experiments.

Metal-fume fever after inhalation of large quantities. Poor tendency for wounds to heal following penetration by substance.

The following applies to nitrites/nitrates in general: methemoglobinemia after the uptake of large quantities.

Risk of blindness!

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

### Ingredients

#### *nitric acid*

*Skin irritation*

Rabbit

Result: Causes severe burns.

(IUCLID)

*Eye irritation*

Rabbit

Result: Causes burns.

(IUCLID)

*Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

#### *beryllium acetate , basic*

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### *Acute oral toxicity*

Acute toxicity estimate: 100.1 mg/kg

Expert judgment

### *Acute inhalation toxicity*

Acute toxicity estimate: 0.051 mg/l; dust/mist

Expert judgment

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## SECTION 12. Ecological information

### **Ecotoxicity**

No information available.

### **Persistence and degradability**

No information available.

### **Bioaccumulative potential**

No information available.

### **Mobility in soil**

No information available.

### *Additional ecological information*

Biological effects:

Hazard for drinking water supplies. Harmful effect due to pH shift.

Discharge into the environment must be avoided.

### **Ingredients**

#### *nitric acid*

##### *Toxicity to fish*

LC50 *Gambusia affinis* (Mosquito fish): 72 mg/l; 96 h (IUCLID)

##### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

##### *Henry constant*

2482 Pa·m<sup>3</sup>/mol

Method: (calculated)

(Lit.) Distribution preferentially in air.

#### *beryllium acetate , basic*

No information available.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 2031
Proper shipping name	NITRIC ACID
Class	8
Packing group	II
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 2031
Proper shipping name	NITRIC ACID
Class	8
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes Not permitted for transport

### Sea transport (IMDG)

UN number	UN 2031
Proper shipping name	NITRIC ACID NOT MORE THAN 20%
Class	8
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-B

## SECTION 15. Regulatory information

### United States of America

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

#### *Ingredients*

nitric acid	7697-37-2	6.12 %
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#### SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

#### *Ingredients*

nitric acid	7697-37-2
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### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

#### *Ingredients*

Copper(II) nitrate  
Zinc nitrate  
iron(III) nitrate  
Lead(II) nitrate  
Divanadium pentaoxide  
Uranyl nitrate  
Silver nitrate  
nitric acid  
nickel(II) nitrate

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

#### *Ingredients*

Copper(II) nitrate  
Zinc nitrate  
iron(III) nitrate  
Lead(II) nitrate  
Divanadium pentaoxide  
Uranyl nitrate  
Silver nitrate  
nitric acid  
nickel(II) nitrate

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

### US State Regulations

#### Massachusetts Right To Know

##### *Ingredients*

nitric acid  
Selenious acid  
Divanadium pentaoxide

#### Pennsylvania Right To Know

##### *Ingredients*

nitric acid

#### New Jersey Right To Know

##### *Ingredients*

nitric acid  
beryllium acetate , basic

#### California Prop 65 Components

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

##### *Ingredients*

Lead(II) nitrate  
Cadmium nitrate

#### California Prop 65 Components

WARNING: this product contains a chemical known in the State of California to cause cancer.

##### *Ingredients*

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Lead(II) nitrate  
Divanadium pentaoxide  
Arsenic acid  
Cadmium nitrate  
nickel(II) nitrate

### Notification status

TSCA:	Not Listed on TSCA inventory. For Research and Development Use only. Not For Manufacturing or Commercial Purposes.
DSL:	This product contains one or several components that are not on the Canadian DSL nor NDSL.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Full text of H-Statements referred to under sections 2 and 3.

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H350i	May cause cancer by inhalation.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Revision Date 08/10/2015

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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