

*acc. to OSHA HCS*

Printing date 04/08/2021

Review date 04/08/2021

**1 Identification**

- **Product identifier**
- **Trade name:** **BERYLLIUM 1000 PPM A/S STANDARD**
- **Article number** N9300172
- **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**



Health hazard

Carc. 1B H350 May cause cancer.



Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS07, GHS08
- **Signal word** Danger

- **Hazard-determining components of labeling:**

beryllium

- **Hazard statements**  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H350 May cause cancer.

- **Precautionary statements**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 Wash thoroughly after handling.

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- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P302+P352 If on skin: Wash with plenty of water.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P321 Specific treatment (see on this label).
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- 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

· **EC number:** 231-791-2

· **Chemical characterization: Mixtures**

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

· **Hazardous components:**

7697-37-2	Nitric Acid ☠ Ox. Liq. 2, H272 ☠ Skin Corr. 1A, H314	2.0%
7440-41-7	beryllium ☠ Acute Tox. 3, H301; Acute Tox. 2, H330 ☠ Carc. 1B, H350; STOT RE 1, H372 ☠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	0.1%

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· **Additional Components**

7732-18-5	Water	97.9%
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**4 First-aid measures**

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**  
Supply fresh air and to be sure call for a doctor.  
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. If symptoms persist, consult a doctor.
- **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.

**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.
- **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.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

7697-37-2	Nitric Acid	0.16 ppm
7440-41-7	beryllium	0.0023 mg/m <sup>3</sup>

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· <b>PAC-2:</b>		
7697-37-2	Nitric Acid	24 ppm
7440-41-7	beryllium	0.025 mg/m <sup>3</sup>
· <b>PAC-3:</b>		
7697-37-2	Nitric Acid	92 ppm
7440-41-7	beryllium	0.1 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** 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**

· <b>Components with limit values that require monitoring at the workplace:</b>	
<b>7697-37-2 Nitric Acid</b>	
PEL	Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
REL	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5 mg/m <sup>3</sup> , 2 ppm
TLV	Short-term value: 10 mg/m <sup>3</sup> , 4 ppm Long-term value: 5.2 mg/m <sup>3</sup> , 2 ppm
<b>7440-41-7 beryllium</b>	
PEL	Short-term value: 0.002 mg/m <sup>3</sup> Long-term value: 0.0002; 0.002* mg/m <sup>3</sup> Ceiling limit value: 0.025**/** mg/m <sup>3</sup> , 0.005* ppm as Be; *see 1910.1024; **30 min peak/8-hr shift
REL	Ceiling limit value: 0.0005 mg/m <sup>3</sup> as Be; See Pocket Guide App. A
TLV	Long-term value: 0.00005 mg/m <sup>3</sup> as Be; inhalable; RSEN; soluble comp.: Skin, DSEN

- **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:**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Store protective clothing separately.  
 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.  
 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.
- **Eye protection:**



Tightly sealed goggles or safety glasses

**9 Physical and chemical properties**

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	Transparent
· <b>Odor:</b>	Odorless
· <b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· <b>Melting point/Melting range:</b>	0 °C (32 °F)
· <b>Boiling point/Boiling range:</b>	100 °C (212 °F)

· **Flash point:** Not applicable.

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· <b>Flammability (solid, gaseous):</b>	<i>Not applicable.</i>
· <b>Decomposition temperature:</b>	<i>Not determined.</i>
· <b>Auto igniting:</b>	<i>Product is not selfigniting.</i>
· <b>Danger of explosion:</b>	<i>Product does not present an explosion hazard. Not determined.</i>
· <b>Explosion limits:</b>	
<b>Lower:</b>	<i>Not determined.</i>
<b>Upper:</b>	<i>Not determined.</i>
· <b>Vapor pressure at 20 °C (68 °F):</b>	<i>23 hPa (17.3 mm Hg)</i>
· <b>Density at 20 °C (68 °F):</b>	<i>1 g/cm<sup>3</sup> (8.345 lbs/gal)</i>
· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not determined.</i>
· <b>Solubility in / Miscibility with Water:</b>	<i>Fully miscible.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
· <b>Solvent content:</b>	
<b>Water:</b>	<i>97.9 %</i>
<b>VOC content:</b>	<i>0.00 %</i>
<b>Solids content:</b>	<i>0.1 %</i>
· <b>Other information</b>	<i>No further relevant information available.</i>

### 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:** *Irritant to skin and mucous membranes.*

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- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

· **Carcinogenic categories**

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

7440-41-7	beryllium	I
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· **NTP (National Toxicology Program)**

7440-41-7	beryllium	K
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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:**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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.

**14 Transport information**

· <b>UN-Number</b>	UN3264
· <b>DOT, ADR, IMDG, IATA</b>	

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· **UN proper shipping name**  
 · **DOT** *Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)*  
 · **ADR** *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)**

· **DOT**



· **Class** *8 Corrosive substances*  
 · **Label** *8*

· **ADR**



· **Class** *8 (C1) Corrosive substances*  
 · **Label** *8*

· **IMDG, IATA**



· **Class** *8 Corrosive substances*  
 · **Label** *8*

· **Packing group**

· **DOT, ADR, IMDG, IATA** *III*

· **Environmental hazards:**

· **Marine pollutant:** *No*

· **Special precautions for user**

*Warning: Corrosive substances*

· **Hazard identification number (Kemler code):** *80*

· **EMS Number:** *F-A,S-B*

· **Segregation groups** *Acids*

· **Stowage Category** *A*

· **Stowage Code** *SW2 Clear of living quarters.*

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

*Not applicable.*

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· **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. (NITRIC ACID), 8, III

**15 Regulatory information**

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

7732-18-5	Water	97.9%
7697-37-2	Nitric Acid	2.0%
	 Ox. Liq. 2, H272  Skin Corr. 1A, H314	
7440-41-7	beryllium	0.1%
	 Acute Tox. 3, H301; Acute Tox. 2, H330  Carc. 1B, H350; STOT RE 1, H372  Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	

· **Sara**

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

7697-37-2	Nitric Acid
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· **Section 313 (Specific toxic chemical listings):**

7697-37-2	Nitric Acid
7440-41-7	beryllium

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

All ingredients are listed.

7732-18-5	Water	ACTIVE
7697-37-2	Nitric Acid	ACTIVE
7440-41-7	beryllium	ACTIVE

· **Hazardous Air Pollutants**

None of the ingredients is listed.

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· **Proposition 65**

· **Chemicals known to cause cancer:**

7440-41-7	beryllium
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· **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.

· **Carcerogenity categories**

· **EPA (Environmental Protection Agency)**

7440-41-7	beryllium	
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*B1, K/L(inh), CBD(oral)*

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

7440-41-7	beryllium	
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*AI*

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

7440-41-7	beryllium
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· **National regulations:**

· **Additional classification according to Decree on Hazardous Materials:**

*Carcinogenic hazardous material group III (dangerous).*

· **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.*

*Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. 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 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)*

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ICAO: International Civil Aviation Organisation  
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  
Ox. Liq. 2: Oxidizing liquids – Category 2  
Acute Tox. 3: Acute toxicity – Category 3  
Acute Tox. 2: Acute toxicity – Category 2  
Skin Corr. 1A: Skin corrosion/irritation – Category 1A  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A  
Skin Sens. 1: Skin sensitisation – Category 1  
Carc. 1B: Carcinogenicity – Category 1B  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1  
· **\* Data compared to the previous version altered.**

USA