

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

1 Identification

- **Product identifier**
- **Trade name:** Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ □ NIST Traceable
- **Article number:** 1050
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586
- **Information department:**
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carc. 1B H350 May cause cancer.



GHS05 Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

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**



GHS05



GHS07



GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
Nitric Acid
beryllium

(Contd. on page 2)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 1)

· **Hazard statements**

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts or mists.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *3

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

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

· **Dangerous components:**

CAS: 7697-37-2	Nitric Acid	5.25%
CAS: 7440-41-7	beryllium	0.1%

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 2)

· Table of Nonhazardous Ingredients

CAS: 7732-18-5 Water

94.65%

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. Then consult a doctor.
- **After swallowing:** Drink copious amounts of water and provide fresh air. 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.

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

· PAC-1:

CAS: 7697-37-2 Nitric Acid

0.16 ppm

CAS: 7440-41-7 beryllium

0.0023 mg/m³

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

**Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable**

(Contd. of page 3)

· **PAC-2:**

CAS: 7697-37-2	Nitric Acid	24 ppm
CAS: 7440-41-7	beryllium	0.025 mg/m ³

· **PAC-3:**

CAS: 7697-37-2	Nitric Acid	92 ppm
CAS: 7440-41-7	beryllium	0.1 mg/m ³

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**

· **Components with limit values that require monitoring at the workplace:****CAS: 7697-37-2 Nitric Acid**

PEL	Long-term value: 5 mg/m ³ , 2 ppm
REL	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5 mg/m ³ , 2 ppm
TLV	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5.2 mg/m ³ , 2 ppm

CAS: 7440-41-7 beryllium

PEL	Short-term value: 0.002 mg/m ³ Long-term value: 0.0002; 0.002* mg/m ³ Ceiling limit value: 0.025*/** mg/m ³ , 0.005* ppm as Be; *see 1910.1024; **30 min peak/8-hr shift
REL	Ceiling limit value: 0.0005 mg/m ³ as Be; See Pocket Guide App. A
TLV	Long-term value: 0.00005 mg/m ³ as Be; inhalable; RSEN; soluble comp.: Skin, DSEN

- **Additional information:** The lists that were valid during the creation were used as basis.

(Contd. on page 5)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 4)

- **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.

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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Liquid

Color: Clear

- **Odor:** Odorless

- **Odor threshold:** Not determined.

- **pH-value at 20 °C (68 °F):** <2

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 83 °C (181.4 °F)

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 5)

· 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.
· 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):	1.02726 g/cm ³ (8.57248 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:	94.7 %
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
Solids content:	0.1 %
· 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.

US
(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 6)

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

· LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Oral	LD50	100,000 mg/kg
Dermal	LD50	51,000 mg/kg (rat)
Inhalative	LC50/4h	50 mg/l

CAS: 7440-41-7 beryllium

Oral	LD50	100 mg/kg (ATE)
Dermal	LD50	50 mg/kg (ATE)
Inhalative	LC50/4h	0.05 mg/l (ATE)

- Primary irritant effect:
- on the skin: Strong caustic effect on skin and mucous membranes.
- on the eye:
 - Strong caustic effect.
 - Strong irritant with the danger of severe eye injury.
- Sensitization: Sensitization possible through skin contact.
- 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)

CAS: 7440-41-7	beryllium	I
----------------	-----------	---

· NTP (National Toxicology Program)

CAS: 7440-41-7	beryllium	K
----------------	-----------	---

· 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:

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 7)

Danger to drinking water if even small quantities leak into the ground.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

· **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 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.

14 Transport information

· **UN-Number**

· **DOT, IMDG, IATA**

UN3264

· **UN proper shipping name**

· **DOT**

· **IMDG, IATA**

Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

· **Transport hazard class(es)**

· **DOT**



· **Class**

8 Corrosive substances

· **Label**

8

· **IMDG, IATA**



· **Class**

8 Corrosive substances

· **Label**

8

· **Packing group**

· **DOT, IMDG, IATA**

III

· **Environmental hazards:**

· **Marine pollutant:**

No

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 8)

· 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.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 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
- Sara

· Section 355 (extremely hazardous substances):

CAS: 7697-37-2	Nitric Acid
----------------	-------------

· Section 313 (Specific toxic chemical listings):

CAS: 7697-37-2	Nitric Acid
----------------	-------------

CAS: 7440-41-7	beryllium
----------------	-----------

· TSCA (Toxic Substances Control Act):

Water	ACTIVE
Nitric Acid	ACTIVE
beryllium	ACTIVE

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

CAS: 7440-41-7	beryllium
----------------	-----------

· 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.

(Contd. on page 10)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ NIST Traceable

(Contd. of page 9)

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 7440-41-7 beryllium

BI, K/L(inh), CBD(oral)

· **TLV (Threshold Limit Value)**

CAS: 7440-41-7 beryllium

AI

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

CAS: 7440-41-7 beryllium

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word** Danger

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

Nitric Acid

beryllium

· **Hazard statements**

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts or mists.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

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

Carcinogenic hazardous material group III (dangerous).

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/18/2021

Reviewed on 05/18/2021

Trade name: Beryllium AA Standard 1,000 ppm
in 0.5 mol/l HNO₃ □ NIST Traceable

(Contd. of page 10)

- **Information about limitation of use:**
 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.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Environment protection department.

- **Contact:**

- **Date of preparation / last revision**

Creation date for SDS 12-29-2014. STN
 05/18/2021 / 1.0

- **Abbreviations and acronyms:**

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 Corr. 1A: Skin corrosion/irritation – Category 1A
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Skin Sens. 1: Skin sensitisation – Category 1
 Carc. 1B: Carcinogenicity – Category 1B

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

US