

Safety Data Sheet

According to OSHA and ANSI

Printing date 11/20/2012

Reviewed on 11/19/2012

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

Product identifier
Product name: Beryllium, plasma standard solution, Specpure®, Be 1000µg/ml
Stock number: 13848

Relevant identified uses of the substance or mixture and uses advised against.
Sector of Use SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification

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


GHS08 Health hazard

Carc. 1B H350i May cause cancer by inhalation.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

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



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

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


T; Toxic

R49-45: May cause cancer by inhalation. May cause cancer.



C; Corrosive

R34: Causes burns.



Xn; Harmful

R20: Harmful by inhalation.

Label elements
Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms


GHS05



GHS07



GHS08

Signal word Danger

Hazard-determining components of labelling:

Nitric acid

Beryllium oxide acetate

Hazard statements

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

(Contd. on page 2)

USA

Safety Data Sheet

According to OSHA and ANSI

Printing date 11/20/2012

Reviewed on 11/19/2012

Product name: Beryllium, plasma standard solution, Specpure®, Be 1000µg/ml

(Contd. of page 1)

H350i May cause cancer by inhalation.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard description:**WHMIS classification**

D2A - Very toxic material causing other toxic effects

E - Corrosive material

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	3
FIRE	0
REACTIVITY	1

Health (acute effects) = 3

Flammability = 0

Reactivity = 1

Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures**Dangerous components:**

7697-37-2	Nitric acid	5.0%
	⚠ Ox. Liq. 3, H272; ⚠ Skin Corr. 1A, H314	
19049-40-2	Beryllium oxide acetate	1.13%
	⚠ Acute Tox. 3, H301; Acute Tox. 2, H330; ⚠ Carc. 1B, H350i; STOT RE 1, H372; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	

Additional information None known.**Non-Hazardous Ingredients**

7732-18-5	Water	93.87%
-----------	-------	--------

4 First aid measures

Description of first aid measures**General information** Immediately remove any clothing soiled by the product.**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek medical treatment.**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.

USA

(Contd. on page 3)

Safety Data Sheet

According to OSHA and ANSI

Printing date 11/20/2012

Reviewed on 11/19/2012

Product name: Beryllium, plasma standard solution, Specpure®, Be 1000µg/ml

(Contd. of page 2)

5 Firefighting measures

Extinguishing media
Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Toxic metal oxide fume

Nitrogen oxides (NOx)

Advice for firefighters
Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

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

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: The product is not flammable

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:

Store away from strong bases.

Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters
Components with limit values that require monitoring at the workplace:
7697-37-2 Nitric acid (5.0%)

PEL (USA)	5 mg/m ³ , 2 ppm
REL (USA)	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5 mg/m ³ , 2 ppm
TLV (USA)	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5.2 mg/m ³ , 2 ppm
EL (Canada)	Short-term value: 4 ppm Long-term value: 2 ppm
EV (Canada)	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5 mg/m ³ , 2 ppm

(Contd. on page 4)

USA

Safety Data Sheet

According to OSHA and ANSI

Printing date 11/20/2012

Reviewed on 11/19/2012

Product name: Beryllium, plasma standard solution, Specpure®, Be 1000µg/ml

(Contd. of page 3)

19049-40-2 Beryllium oxide acetate (1.13%)

PEL (USA)	Short-term value: C 0.005; 0.025* mg/m ³ Long-term value: 0.002 mg/m ³ as Be; *30 min peak per 8 hr shift
TLV (USA)	0.00005* mg/m ³ *as Be-inhalable fraction; NIC-SEN; Skin

CAS No.	Designation of material	%	Type	Value	Unit
---------	-------------------------	---	------	-------	------

Additional Occupational Exposure Limit Values for possible hazards during processing:**7440-41-7 Beryllium**

PEL (USA)	Short-term value: C 0.005; 0.025* mg/m ³ Long-term value: 0.002 mg/m ³ as Be; *30 min peak per 8-hr shift
REL (USA)	Short-term value: C 0.0005 mg/m ³ as Be; See Pocket Guide App. A
TLV (USA)	0.00005* mg/m ³ as Be; SEN; Skin; *as inhalable fraction
EL (Canada)	0.002 mg/m ³ as Be; ACIGH A1, IARC 1
EV (Canada)	Short-term value: 0.01 mg/m ³ Long-term value: 0.002 mg/m ³ as Be

Additional information: No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale dust / smoke / mist.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection:

Tightly sealed goggles

Full face protection

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:	Not determined
Odor threshold:	Not determined.

pH-value:	Not determined.
-----------	-----------------

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Product is not selfigniting.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 20°C (68 °F):	23 hPa (17 mm Hg)
Density:	Not determined
Relative density	Not determined.

(Contd. on page 5)

- USA -

Safety Data Sheet

According to OSHA and ANSI

Printing date 11/20/2012

Reviewed on 11/19/2012

Product name: Beryllium, plasma standard solution, Specpure®, Be 1000µg/ml

(Contd. of page 4)

Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible
Segregation coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.

Solvent content:	
Organic solvents:	0.0 %
Water:	93.9 %

Solids content:	1.1 %
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity

Chemical stability

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions Water reacts violently with alkali metals.

Incompatible materials:

Bases

Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

Hazardous decomposition products:

Nitrogen oxides

Metal oxide fume

Toxic metal oxide fume

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

7697-37-2 Nitric acid

Inhalative	LC50/4H	0.13 mg/l/4H (rat)
------------	---------	--------------------

Primary irritant effect:

on the skin: Corrosive effect on skin and mucous membranes.

on the eye: Strong corrosive effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity: Harmful if inhaled.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

EPA-L: Likely to produce cancer in humans.

EPA-B1: Probable human carcinogen, limited evidence of carcinogenicity from epidemiologic studies.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-K: Known to be carcinogenic: sufficient evidence from human studies.

ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive and/or mutation data for components in this product.

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Corrosive

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

(Contd. on page 6)

USA

Safety Data Sheet

According to OSHA and ANSI

Printing date 11/20/2012

Reviewed on 11/19/2012

Product name: Beryllium, plasma standard solution, Specpure®, Be 1000µg/ml

(Contd. of page 5)

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 product to reach ground water, water course or sewage system.

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

Do not allow material to be released to the environment without proper governmental permits.

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** Consult state, local or national regulations to ensure proper disposal.**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, ADR, IMDG, IATA

UN3264

UN proper shipping name

DOT, IMDG, IATA

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

ADR

3264 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

Danger code (Kemler):

80

EMS Number:

F-A, S-B

Segregation groups

Acids

(Contd. on page 7)

USA

Safety Data Sheet

According to OSHA and ANSI

Printing date 11/20/2012

Reviewed on 11/19/2012

Product name: Beryllium, plasma standard solution, Specpure®, Be 1000µg/ml

(Contd. of page 6)

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

Not applicable.

UN "Model Regulation":

UN3264, 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
National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

This product contains a chemical known to the state of California to cause cancer and/or reproductive toxicity.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use:

For use only by technically qualified individuals.

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.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations
Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients are listed.

REACH - Pre-registered substances

All ingredients are listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact:

Zachariah C. Holt

Global EHS Manager

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)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

USA