

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 10/25/2011

Reviewed on 10/21/2011

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Product name:** Beryllium powder**Stock number:** 10108**CAS Number:**

7440-41-7

EC number:

231-150-7

Index number:

004-001-00-7

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**

GHS06 Skull and crossbones

H301 Toxic if swallowed.

H330 Fatal if inhaled.



GHS08 Health hazard

H350 May cause cancer.

H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

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

T+; Very toxic

R26: Very toxic by inhalation.



T; Toxic

R49-25-48/23: May cause cancer by inhalation. Toxic if swallowed. Toxic; danger of serious damage to health by prolonged exposure through inhalation.



Xi; Irritant

R36/37/38-43: Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.

Carc. Cat. 2

Information concerning particular hazards for human and environment: Not applicable

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Product name: Beryllium powder

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Label elements**Labelling according to EU guidelines:****Code letter and hazard designation of product:**

T+ Very toxic

Risk phrases:

- 49 May cause cancer by inhalation.
 25 Also toxic if swallowed.
 26 Also very toxic by inhalation.
 36/37/38 Irritating to eyes, respiratory system and skin.
 43 May cause sensitization by skin contact.
 48/23 Also toxic: danger of serious damage to health by prolonged exposure through inhalation.

Safety phrases:

- 53 Avoid exposure - obtain special instructions before use.
 45 In case of accident or if you feel unwell, seek medical advice immediately.

Hazard description:**WHMIS classification**

B4 - Flammable solid

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

**Classification system****HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	3
FIRE	2
REACTIVITY	1

Health (acute effects) = 3

Flammability = 2

Reactivity = 1

Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients**Chemical characterization: Substances****CAS# Description:**

7440-41-7 Beryllium

Identification number(s):

EC number: 231-150-7

Index number: 004-001-00-7

4 First aid measures**Description of first aid measures****General information**

Immediately remove any clothing soiled by the product.
 Remove breathing apparatus only after contaminated clothing has been completely removed.
 In case of irregular breathing or respiratory arrest provide artificial respiration.

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 Do not induce vomiting; immediately call for medical help.

Information for doctor**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

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Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures**Extinguishing media**

Suitable extinguishing agents Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents Water

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Toxic metal oxide fume

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:

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: No information known.

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:

Do not store together with acids.

Store away from strong bases.

Store away from halogens.

Store away from halocarbons.

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:****7440-41-7 Beryllium (100.0%)**

PEL () Short-term value: C 0.005; 0.025* mg/m³

Long-term value: 0.002 mg/m³

as Be; *30 min peak per 8-hr shift

REL () Short-term value: C 0.0005 mg/m³

as Be; See Pocket Guide App. A

TLV () 0.00005* mg/m³

as Be; SEN; Skin; *as inhalable fraction

Additional information: No data

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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.

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.

Material of gloves

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

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Powder
Color:	Grey
Odor:	Odorless
Odour threshold:	Not determined.

pH-value: Not applicable.**Change in condition**

Melting point/Melting range:	1278°C (2332 °F)
Boiling point/Boiling range:	2471°C (4480 °F)
Sublimation temperature / start:	Not determined

Flammability (solid, gaseous) Not determined.**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Auto igniting:** Not determined.**Explosion limits:**

Lower:	Not determined
Upper:	Not determined

Vapor pressure at 990°C (1814 °F): 0.000133 hPa**Density at 20°C (68 °F):** 1.848 g/cm³ (15.422 lbs/gal)**Relative density** Not determined.**Vapour density** Not applicable.**Evaporation rate** Not applicable.**Solubility in / Miscibility with****Water:** Insoluble**Segregation coefficient (n-octanol/water):** Not determined.**Viscosity:**

dynamic:	Not applicable.
kinematic:	Not applicable.

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 No dangerous reactions known**Incompatible materials:**

Acids

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Bases

Halogens

Halocarbons

Hazardous decomposition products: Toxic metal oxide fume**11 Toxicological information****Information on toxicological effects****Acute toxicity:****Primary irritant effect:****on the skin:**

May cause irritation

Irritating effect.

on the eye:

May cause irritation

Irritating effect.

Sensitization: Sensitization possible through skin contact.**Additional toxicological information:**

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

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

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

NTP-1: 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 Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

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.

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.**14 Transport information****UN-Number****DOT, ADR, IMDG, IATA****ADN**

UN1567

Not applicable

UN proper shipping name**DOT, IMDG, IATA****ADR****ADN**

BERYLLIUM POWDER

1567 BERYLLIUM POWDER

Not applicable

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Transport hazard class(es)

DOT, IMDG, IATA

**Class**

6.1 Toxic substances.

Label

6.1+4.1

ADR

**Class**

6.1 (TF3) Toxic substances

Label

6.1+4.1

ADN/R Class:

Not applicable

Packing group

DOT, ADR, IMDG, IATA

II

Environmental hazards:**Marine pollutant:**

No

Special precautions for user

Warning: Toxic substances

Danger code (Kemler):

64

EMS Number:

F-G, S-G

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

Not applicable.

UN "Model Regulation":

UN1567, BERYLLIUM POWDER, 6.1 (4.1), II

15 Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****Product related hazard informations:****Hazard symbols:**

T+ Very toxic

Risk phrases:

49 May cause cancer by inhalation.

25 Also toxic if swallowed.

26 Also very toxic by inhalation.

36/37/38 Irritating to eyes, respiratory system and skin.

43 May cause sensitization by skin contact.

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Safety phrases:

53 Avoid exposure - obtain special instructions before use.

45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

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

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

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**REACH - Pre-registered substances** Substance is listed.**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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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)

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

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

EINECS: European Inventory of Existing Commercial Chemical Substances

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

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

USA