

## 1 Identification

### Product identifier

**Product name:** Beryllium thinfoil

**Stock number:** 41555

**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.**

**Identified use:** SU24 Scientific research and development

### Details of the supplier of the safety data sheet

**Manufacturer/Supplier:**

Alfa Aesar

Thermo Fisher Scientific Chemicals, 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 business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Carc. 1B H350 May cause cancer.

STOT RE 1 H372 Causes damage to the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS06 GHS08

### Signal word

**Danger**

### Hazard statements

H301 Toxic if swallowed.

H330 Fatal if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H335 May cause respiratory irritation.

H372 Causes damage to the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.

### Precautionary statements

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

P284 Wear respiratory protection.

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

P320 Specific treatment is urgent (see on this label).

P405 Store locked up.

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

### WHMIS classification

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** 1 Health (acute effects) = 1

**FIRE** 0 Flammability = 0

**REACTIVITY** 0 Physical Hazard = 0

**Product name: Beryllium thinfoil**

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

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### 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.  
No special measures required.  
**After inhalation** Seek medical treatment in case of complaints.  
**After skin contact** Generally the product does not irritate the skin.  
**After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, 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.  
**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

### 5 Fire-fighting 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**  
If this product is involved in a fire, the following can be released:  
Beryllium oxide  
**Advice for firefighters**  
**Protective equipment:** No special measures required.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Not required.  
**Environmental precautions:** Do not allow product to reach sewage system or any water course.  
**Methods and material for containment and cleaning up:**  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
**Prevention of secondary hazards:** No special measures required.  
**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 special measures required.  
**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.  
**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:** No further data; see section 7.

#### Control parameters

**Components with limit values that require monitoring at the workplace:**

#### 7440-41-7 Beryllium (100.0%)

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

**Additional information:** No data

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USA

**Product name: Beryllium thinfoil**

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**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:**

Not required.

Use self-contained respiratory protective device in emergency situations.

**Protection of hands:** Not required.

**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:** Solid in various forms

**Odor:** Odorless

**Odor 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.

**Danger of explosion:** 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/cm<sup>3</sup> (15.422 lbs/gal)

**Relative density** Not determined.

**Vapor density** Not applicable.

**Evaporation rate** Not applicable.

**Solubility in / Miscibility with**

**Water:** Insoluble

**Partition 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** No information known.

**Chemical stability** Stable under recommended storage conditions.

**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

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** Acids

**Hazardous decomposition products:** Beryllium oxide

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

Fatal if inhaled.

Toxic if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** Causes skin irritation.

**Eye irritation or corrosion:** Causes serious eye irritation.

**Sensitization:** May cause an allergic skin reaction.

**Germ cell mutagenicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

**Carcinogenicity:**

May cause cancer.

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

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

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

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

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:**

Causes damage to the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.

**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**Carcinogenic categories**

**OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

**12 Ecological information**

**Toxicity**

**Aquatic toxicity:** No further relevant information available.

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Product name: **Beryllium thinfoil**

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**Persistence and degradability** No further relevant information available.**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 to reach ground water, water course or sewage system.

Avoid transfer into the environment.

**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, ADN, IMDG, IATA

Not applicable

**UN proper shipping name**

DOT, ADN, IMDG, IATA

Not applicable

**Transport hazard class(es)**

DOT, ADR, ADN, IMDG, IATA

Class

Not applicable

**Packing group**

DOT, IMDG, IATA

Not applicable

**Environmental hazards:**

Not applicable.

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.**Transport/Additional information:**

DOT

Marine Pollutant (DOT):

No

**UN "Model Regulation":**

-

**15 Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)**Hazard pictograms**

GHS06 GHS08

**Signal word** Danger**Hazard statements**

H301 Toxic if swallowed.

H330 Fatal if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H335 May cause respiratory irritation.

H372 Causes damage to the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.

**Precautionary statements**

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

P284 Wear respiratory protection.

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

P320 Specific treatment is urgent (see on this label).

P405 Store locked up.

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

**National regulations**

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

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

**SARA Section 313 (specific toxic chemical listings)**

7440-41-7 Beryllium

**California Proposition 65****Prop 65 - Chemicals known to cause cancer**

7440-41-7 Beryllium

**Prop 65 - Developmental toxicity** Substance is not listed.**Prop 65 - Developmental toxicity, female** Substance is not listed.**Prop 65 - Developmental toxicity, male** Substance is not listed.**Information about limitation of use:** For use only by technically qualified individuals.**Other regulations, limitations and prohibitive regulations****Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**Product name: Beryllium thinfoil**

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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 SDS:** Global Marketing Department

**Date of preparation / last revision** 01/04/2016 / -

### 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)

DOT: US Department of Transportation

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)

Acute Tox. 3: Acute toxicity, Hazard Category 3

Acute Tox. 2: Acute toxicity, Hazard Category 2

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Carc. 1B: Carcinogenicity, Hazard Category 1B

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

USA