1 Identification

Product identifier

Product name: Beryllium powder

Stock number: 00585
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.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/…
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
B4 - Flammable solid
D1A - Very toxic material causing immediate and serious toxic effects
D2A - Very toxic material causing other toxic effects

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Product name: Beryllium powder

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

Health (acute effects) = 3
Flammability = 2
Physical Hazard = 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.*
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:
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 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 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.

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Product name: Beryllium powder

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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/m³ Ceiling limit value: 0.005; 0.025* mg/m³ as Be; *30 min peak per 8-hr shift
REL (USA)	Ceiling limit value: 0.0005 mg/m³ as Be; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.00005* mg/m³ as Be;*inhalable; (SEN)NIC-DSEN;RSEN;Skin
EL (Canada)	Long-term value: 0.002 mg/m³ as Be; ACIGH A1, IARC 1
EV (Canada)	Short-term value: 0.01 mg/m³ Long-term value: 0.002 mg/m³ 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.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use self-contained respiratory protective device in emergency situations.
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.
Penetration time of glove material (in minutes) Not determined
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
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/cm³ (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
Bases
Halogens
Halocarbons
Hazardous decomposition products: Toxic metal oxide fume

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Fatal if inhaled.

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Product name: Beryllium powder

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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.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
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 material to be released to the environment without proper governmental permits.
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, IMDG, IATA**	UN1567
UN proper shipping name **DOT** **IMDG, IATA**	Beryllium, powder BERYLLIUM POWDER
Transport hazard class(es)	
DOT	
Class **Label** **Class** **Label**	6.1 Toxic substances. 6.1+4.1 6.1 (TF3) Toxic substances 6.1+4.1
IMDG, IATA	
Class **Label**	6.1 Toxic substances. 6.1+4.1
Packing group **DOT, IMDG, IATA**	II
Environmental hazards:	Not applicable.
Special precautions for user **EMS Number:**	Warning: Toxic substances F-G,S-G
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":	UN1567, Beryllium, powder, 6.1 (4.1), II

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)

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Product name: Beryllium powder

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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.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/…
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.
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
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.

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 11/24/2015 / -
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)
ICAO: International Civil Aviation Organization
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
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)