

Cobalt Balls	Pricing >
Cobalt Band	Pricing >
Cobalt Bars	Pricing >
Cobalt Block	Pricing >
Cobalt Chunk	Pricing >
Cobalt Coil	Pricing >
Cobalt Concentrate	Pricing >
Cobalt Crucibles	Pricing >
Cobalt Cube	Pricing >
Cobalt Cylinder	Pricing >
Cobalt Disc	Pricing >
Cobalt Flake	Pricing >
Cobalt Flange	Pricing >
Cobalt Foam	Pricing >
Cobalt Foil	Pricing >
Cobalt Granules	Pricing >
Cobalt Honeycomb	Pricing >
Cobalt Ingot	Pricing >
Cobalt Lump	Pricing >
Cobalt Mesh	Pricing >
Cobalt Metal	Pricing >
Cobalt Microfoil	Pricing >
Cobalt Microleaf	Pricing >
Cobalt Nanoparticle Dispersion	Pricing >
Cobalt Nanoparticles	Pricing >
Cobalt Nanorods	Pricing >
Cobalt Nanowire Dispersion	Pricing >
Cobalt Nanowires	Pricing >
Cobalt Particles	Pricing >
Cobalt Parts	Pricing >

Cobalt Pellets	Pricing >
Cobalt Pieces	Pricing >
Cobalt Plate	Pricing >
Cobalt Powder	Pricing >
Cobalt Puck	Pricing >
Cobalt Ribbon	Pricing >
Cobalt Ring	Pricing >
Cobalt Rod	Pricing >
Cobalt Rotatable Sputtering Target	Pricing >
Cobalt Samples	Pricing >
Cobalt Shavings	Pricing >
Cobalt Sheet	Pricing >
Cobalt Shot	Pricing >
Cobalt Single Crystal	Pricing >
Cobalt Sleeves	Pricing >
Cobalt Slugs	Pricing >
Cobalt Specimen	Pricing >
Cobalt Spheres	Pricing >
Cobalt Sponge	Pricing >
Cobalt Spring	Pricing >
Cobalt Sputtering Target	Pricing >
Cobalt Strip	Pricing >
Cobalt Tape	Pricing >
Cobalt Tube	Pricing >
Cobalt Wafer	Pricing >
Cobalt Wire	Pricing >
Cobalt Wool	Pricing >
Ultra Thin Cobalt Nanoscale Foil	Pricing >

Linear Formula	Co
Pubchem CID	104730
MDL Number	MFCD00010935
EC No.	231-158-0
Beilstein/Reaxys No.	N/A
SMILES	[Co]

Inchl Identifier	InChI=1S/Co
Inchl Key	GUTLYIVDDKVIGB-UHFFFAOYSA-N
Signal Word	Danger
Hazard Statements	H228-H400
Hazard Codes	F
Precautionary Statements	N/A
Flash Point	Not applicable
Risk Codes	11
Safety Statements	16
RTECS Number	GL5325000
Transport Information	UN 3089 4.1/PG 2
WGK Germany	3

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SAFETY DATA SHEET

Date Accessed: 04/20/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #7440-48-4

Relevant identified uses of the substance:
Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:
Domestic, North America +1 800-424-9300
International +1 703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
GHS08 Health hazard
Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

GHS07

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

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

Xn; Sensitizing

R42/43: May cause sensitization by inhalation and skin contact.

R53: May cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment:

N/A

Hazards not otherwise classified

No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms



GHS08

Signal word

Danger

Hazard statements

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

Precautionary statements

P284 In case of inadequate ventilation wear respiratory protection.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P342+P311 If experiencing respiratory symptoms:

Call a POISON CENTER/doctor/...

P363 Wash contaminated clothing before reuse.

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

WHMIS classification

D2A - Very toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

0

0

0

Health (acute effects) = 0
Flammability = 0
Physical Hazard = 0
Other hazards
Results of PBT and vPvB assessment
PBT:
N/A
vPvB:
N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
7440-48-4 Cobalt
Identification number(s):
EC number:
231-158-0

SECTION 4. FIRST AID MEASURES

Description of first aid measures
General information
No special measures required.
If inhaled:
Supply fresh air and to be sure call for a doctor.
Seek medical treatment in case of complaints.
In case of skin contact:
Generally the product does not irritate the skin.
In case of eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
If swallowed:
If symptoms persist consult doctor.
Information for doctor
Most important symptoms and effects, both acute and delayed
No data available
Indication of any immediate medical attention and special treatment needed
No data available

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

Metal oxide fume

Advice for firefighters

Protective equipment:

No special measures required

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Not required.

Environmental precautions:

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

Do not allow product to enter drains, sewage systems, or other water courses.

Do not allow material to penetrate the ground or soil.

Methods and materials for containment and cleanup:

Dispose of contaminated material as waste according to section 13.

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.

SECTION 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.

Prevent formation of dust.

Information about protection against explosions and fires:

No special measures required.

Conditions for safe storage, including any incompatibilities

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 data available

SECTION 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:

7440-48-4 Cobalt (100.0%)

PEL (USA) Long-term value: 0.1^* mg/m^3
as Co; *for metal dust and fume

REL (USA) Long-term value: 0.05 mg/m^3
as Co; metal dust & fume

TLV (USA) Long-term value: 0.02 mg/m^3
as Co, BEI

EL (Canada) Long-term value: 0.02 mg/m^3
IARC 2B

EV (Canada) Long-term value: 0.1 mg/m^3
Ingredients with biological limit values:

7440-48-4 Cobalt (100.0%)

BEI (USA) $15 \text{ } \mu\text{g/L}$

Medium: urine

Time: end of shift at end of workweek

Parameter: Cobalt (background)

$1 \text{ } \mu\text{g/L}$

Medium: blood

Time: end of shift at end of workweek

Parameter: Cobalt (background, semi-quantitative)

Additional information:

No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Not required.

Protection of hands:

Not required.

Penetration time of glove material (in minutes)

No data available

Eye protection:

Safety glasses

Body protection:

Protective work clothing

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Solid in various forms

Color: Grey

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 1495 °C (2723 °F)

Boiling point/Boiling range: 2927 °C (5301 °F)

Sublimation temperature / start: No data available

Flammability (solid, gas)

No data available.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure at 994 °C (1821 °F): 0.0000001 hPa

Density at 20 °C (68 °F): 8.92 g/cm³ (74.437 lbs/gal)

Bulk density at 20 °C (68 °F): 850 kg/m³

Relative density

No data available.

Vapor density

N/A

Evaporation rate

N/A

Solubility in Water (H₂O): Insoluble

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information

No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

No data available

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 data available
Incompatible materials:
Acids
Hazardous decomposition products:
Metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.
LD/LC50 values that are relevant for classification:
Oral LD50 6171 mg/kg (rat)
Skin irritation or corrosion:
No irritant effect.
Eye irritation or corrosion:
May cause irritation
Sensitization:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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:
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure.
Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.
Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.
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:
No effects known.

Specific target organ system toxicity - single exposure:
No effects known.
Aspiration hazard:
No effects known.
Subacute to chronic toxicity:
No effects known.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity:
No data available
Persistence and degradability
No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available
Additional ecological information:
Do not allow material to be released to the environment without official permits.
Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.
May cause long lasting harmful effects to aquatic life.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT:
N/A
vPvB:
N/A
Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation
Consult official regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation:
Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number

DOT, ADN, IMDG, IATA

N/A

UN proper shipping name

DOT, ADN, IMDG, IATA

N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

N/A

Packing group

DOT, IMDG, IATA

N/A

Environmental hazards:

N/A

Special precautions for user

N/A

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

N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental
regulations/legislation specific for the substance or
mixture

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)

7440-48-4 Cobalt

California Proposition 65

Prop 65 - Chemicals known to cause cancer

7440-48-4 Cobalt

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.

REACH - Pre-registered substances

Substance is listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.
