



<a href="#">Samarium Cobalt SmCo5 Powder</a>		<a href="#">Pricing &gt;</a>
<a href="#">Samarium Cobalt SmCo5 Sputtering Target</a>		<a href="#">Pricing &gt;</a>
<b>Linear Formula</b>	SmCo <sub>5</sub>	
<b>Pubchem CID</b>	159396	
<b>MDL Number</b>	MFCD02091682	
<b>EC No.</b>	235-573-8	
<b>IUPAC Name</b>	cobalt; samarium	
<b>Beilstein/Reaxys No.</b>	N/A	
<b>SMILES</b>	[Co].[Co].[Co].[Co].[Co].[Sm]	
<b>Inchl Identifier</b>	InChI=1S/5Co.Sm	
<b>Inchl Key</b>	NDYCBWZIOSTTHS-UHFFFAOYSA-N	
<b>Signal Word</b>	N/A	
<b>Hazard Statements</b>	N/A	
<b>Hazard Codes</b>	N/A	
<b>Risk Codes</b>	N/A	
<b>Safety Statements</b>	N/A	
<b>Transport Information</b>	N/A	
<b>GHS Pictograms</b>	<a href="#">GHS02 Flame</a>  <a href="#">GHS08 Health Hazard</a> 	

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## SAFETY DATA SHEET

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### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American

Elements product codes for CAS #12017-68-4

**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

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## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No  
1272/2008

GHS02 Flame

Flam. Sol. 2 H228 Flammable solid.

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.

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



GHS02

GHS08

Signal word

Danger

Hazard statements

H228 Flammable solid.

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

H317 May cause an allergic skin reaction.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot  
surfaces. - No smoking.

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.  
P363 Wash contaminated clothing before reuse.  
P501 Dispose of contents/container in accordance  
with local/regional/  
national/international regulations.  
WHMIS classification  
B4 - Flammable solid  
D2A - Very toxic material causing other toxic effects  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
1  
2  
2  
Health (acute effects) = 1  
Flammability = 2  
Physical Hazard = 2  
Other hazards  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS No. / Substance Name:  
12017-68-4 Samarium cobalt  
Identification number(s):  
EC number:  
234-625-7

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
If inhaled:  
Supply patient with fresh air. If not breathing, provide  
artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
In case of skin contact:  
Immediately wash with soap and water; rinse  
thoroughly.

Seek immediate medical advice.  
In case of eye contact:  
Rinse opened eye for several minutes under running water. Consult a physician.  
If swallowed:  
Seek medical treatment.  
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

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## **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  
Toxic metal oxide fume  
Advice for firefighters  
Protective equipment:  
Wear self-contained respirator.  
Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures  
Use personal protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Keep away from ignition sources  
Environmental precautions:  
Do not allow material to be released to the environment without official permits.  
Methods and materials for containment and cleanup:  
Keep away from ignition sources.  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Prevention of secondary hazards:  
Keep away from ignition sources.  
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.

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## **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:

Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

Store in a cool location.

Information about storage in one common storage facility:

No data available

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

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## **SECTION 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:

Cobalt, elemental & inorganic compounds, as Co mg/m<sup>3</sup>

ACGIH TLV 0.02; Confirmed animal carcinogen

Austria Carcinogen

Belgium TWA 0.05

Denmark TWA 0.05

Finland TWA 0.05 (skin)

Germany Carcinogen

Hungary TWA 0.1; 0.2-STEL

Japan OEL 0.05; 2B Carcinogen

Korea TLV 0.02; Confirmed animal carcinogen  
Ireland TWA 0.1  
Netherlands MAC-TGG 0.05  
Norway TWA 0.05  
Poland TWA 0.05; 0.2-STEL  
Russia 0.5-STEL  
Sweden NGV 0.05  
Switzerland MAK-W 0.1; Carcinogen  
United Kingdom TWA 0.1  
USA PEL 0.1 (dust and fume)  
Additional information:  
No data  
Exposure controls  
Personal protective equipment  
Follow typical protective and hygienic practices for handling chemicals.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Maintain an ergonomically appropriate working environment.  
Breathing equipment:  
Use suitable respirator when high concentrations are present.  
Protection of hands:  
Impervious gloves  
Inspect gloves prior to use.  
Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.  
Eye protection:  
Safety glasses  
Body protection:  
Protective work clothing.

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties  
Appearance:  
Form: Powder  
Odor: Odorless  
Odor threshold: No data available.  
pH: N/A  
Melting point/Melting range: 1325 °C (2417 °F)  
Boiling point/Boiling range: No data available  
Sublimation temperature / start: No data available  
Flash point: N/A  
Flammability (solid, gas)  
Highly flammable.  
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: N/A  
Density: No data available  
Relative density  
No data available.  
Vapor density  
N/A  
Evaporation rate  
N/A  
Solubility in Water (H<sub>2</sub>O): Insoluble  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information  
No data available

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## **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:  
None known.  
No data available  
Hazardous decomposition products:  
Metal oxide fume  
Toxic metal oxide fume

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity:  
No effects known.  
LD/LC50 values that are relevant for classification:  
No data  
Skin irritation or corrosion:

Irritant to skin and mucous membranes.

Eye irritation or corrosion:

Irritating effect.

Sensitization:

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

May cause an allergic skin reaction.

Germ cell mutagenicity:

No effects known.

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.

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:

Lanthanons can cause delayed blood clotting leading to hemorrhages.

Exposure may also lead to sensitivity to heat, itching, increased awareness of odor and taste, and liver damage.

Cobalt is an experimental neoplastigen and tumorigen. It is an experimental carcinogen of the connective tissue and lungs. Cobalt metal and inorganic compounds are classified as an animal carcinogen by the ACGIH. Ingestion may cause burning in the mouth, esophagus, and stomach.

Inhalation of dusts and fumes may cause irritation of the respiratory tract and labored breathing and coughing. Sensitization, nausea, flushing of the face and ringing in the ears is also possible.

Chronic ingestion may result in pericardial effusion, polycardial effusion, polycythemia, cardiac failure, vomiting, convulsions and thyroid enlargement.

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

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## **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.  
Avoid transfer into the environment.  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A  
Other adverse effects  
No data available

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## **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.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number  
DOT, IMDG, IATA  
UN3089  
UN proper shipping name  
DOT  
Metal powders, flammable, n.o.s. (Samarium cobalt powder)

IMDG, IATA  
METAL POWDER, FLAMMABLE, N.O.S. (Samarium cobalt powder)  
Transport hazard class(es)  
DOT  
Class  
4.1 Flammable solids, self-reactive substances and solid desensitised explosives.  
Label  
4.1  
Class  
4.1 (F3) Flammable solids, self-reactive substances and solid desensitised explosives  
Label  
4.1  
IMDG, IATA  
Class  
4.1 Flammable solids, self-reactive substances and solid desensitised explosives.  
Label  
4.1  
Packing group  
DOT, IMDG, IATA  
III  
Environmental hazards:  
N/A  
Special precautions for user  
Warning: Flammable solids, self-reactive substances and solid desensitised explosives  
Segregation groups  
Heavy metals and their salts (including their organometallic compounds), powdered metals  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code  
N/A  
Transport/Additional information:  
DOT  
Marine Pollutant (DOT):  
No  
UN "Model Regulation":  
UN3089, Metal powders, flammable, n.o.s. (Samarium cobalt powder), 4.1, III

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## **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.

SARA Section 313 (specific toxic chemical listings)  
12017-68-4 Samarium cobalt  
California Proposition 65  
Prop 65 - Chemicals known to cause cancer  
Substance is not listed.  
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 contains cobalt and 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.

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## **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.

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