



LTS Research Laboratories, Inc.
Safety Data Sheet
Cobalt Silicon Alloy

1. Product and Company Identification

Trade Name:	Cobalt Silicon Alloy
Chemical Formula:	CoSi
Recommended Use:	Scientific research and development
Manufacturer/Supplier:	LTS Research Laboratories, Inc.
Street:	37 Ramland Road
City:	Orangeburg
State:	New York
Zip Code:	10962
Country:	USA
Tel #:	855-587-2436 / 855-lts-chem
24-Hour Emergency Contact:	800-424-9300 (US & Canada) +1-703-527-3887 (International)



2. Hazards Identification

Signal Word:

Danger



Hazard Statements:

H228: Flammable solid.
H302: Harmful if swallowed
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation
H330: Fatal if inhaled
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336: May cause drowsiness or dizziness
H350: May cause cancer
H360: May damage fertility or the unborn child
H373: May cause damage to organs through prolonged or repeated exposure

Precautionary Statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
P281: Use personal protective equipment as required
P285 In case of inadequate ventilation wear respiratory protection.
P301+P312+P330: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P341+P310: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician
P308+P313: IF exposed or concerned: Get medical advice/attention
P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Immediately call a POISON CENTER or doctor/physician
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337+P311: If eye irritation persists: Call a POISON CENTER or doctor/physician
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403+P233: Store in a well-ventilated place. Keep container tightly closed
P405: Store locked up.
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health:	4
Flammability:	3
Physical:	3

3. Composition

Chemical Family:	Metal alloy
Additional Names:	Silicon Cobalt Alloy

Cobalt (Co):	
Percentage:	0-100 wt%
CAS #:	7440-48-4
EC #:	231-158-0

Silicon (Si):	
Percentage:	0-100 wt%
CAS #:	7440-21-3
EC #:	231-130-8

4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult. Keep patient warm. Seek immediate medical attention.
Ingestion:	Seek immediate medical attention.
Skin:	Immediately wash affected area with mild soap and water. Remove any contaminated clothing. Seek immediate medical attention.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek immediate medical attention.

5. Firefighting Measures

Flammability:	Flammable. May form combustible dust concentrations in air. Containers may explode when heated. May be ignited by heat, sparks or flames.
Extinguishing Media:	Do not use water for metal fires – use CO ₂ , sand, extinguishing powder.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

6. Accidental Release Measures

If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Keep unprotected persons away. Isolate spill area and provide ventilation. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter, an electrically protected vacuum cleaner or by wet brushing and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

7. Handling and Storage

Handling Conditions:	Wash thoroughly after handling. Handle under dry protective gas. Do not get in eyes, on skin, or on clothing. Avoid formation of dust and aerosols
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store under dry inert gas. Use only in areas provided with appropriate exhaust ventilation. Over time, pressure may increase causing containers to burst. Take precautionary measures against static discharges. Store away from air, water/moisture. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	N/A
Threshold Limit Value:	N/A
Special Equipment:	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Respiratory Protection:	Dust Respirator
Protective Gloves:	Nitrile rubber gloves with minimum thickness of 0.11 mm
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	Grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	N/A
Water Solubility:	N/A
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	N/A

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Oxidizing agents. Material readily reacts with acids generating flammable and/or explosive hydrogen gas.
Incompatible Conditions:	Heat, flames and sparks, extremes of temperature and direct sunlight
Hazardous Decomposition Products:	Metal oxide fume, cobalt oxides, silicon dioxide

11. Toxicological Information

Potential Health Effects:	
Eyes:	Causes serious eye irritation
Skin:	May cause an allergic skin reaction
Ingestion:	Harmful if swallowed
Inhalation:	Fatal if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Chronic:	N/A
Signs & Symptoms:	Kidney injury may occur, damage to the eyes, lung irritation and throat, rash, vomiting, diarrhea. Symptoms of allergic reaction may include itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	3,160 mg/kg for rat by mouth as Si 6,171 mg/kg for rat by mouth as Co
Carcinogen:	IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt) ACGIH A3: Confirmed animal carcinogen (Cobalt)

12. Ecological Information

Aquatic Toxicity:	Toxicity to fish: LC50 - Danio rerio (zebra fish) - 100.01 mg/l - 96 h (Cobalt)
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	N/A
Notes:	Very toxic to aquatic organisms May cause long-term adverse effects in the aquatic environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

14. Transportation Data

Hazardous: Hazardous as powder only.



Hazard Class: 4.1 Flammable solid
Packing Group: II
UN Number: UN3089
Proper Shipping Name: Metal powders, flammable, n.o.s. (Cobalt Silicon Alloy)

15. Regulatory Information

Sec 302 Extremely Hazardous: No
Sec 304 Reportable Quantities: N/A
Sec 313 Toxic Chemicals: No

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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