

## MATERIAL SAFETY DATA SHEET (MSDS)

### 1 Product Name and Company Information

**Product Name:** Sintered Samarium Cobalt (SmCo) Magnet

**Manufacturer/Supplier Information:**

CHENGDU HEAVEN AND GREAT TECHNOLOGY CO.,LTD

📍 146 Hongqi Road, Pidu District, Chengdu 611730, China

☎ +86 028 69914836

🌐 [www.advancedmagnets.com](http://www.advancedmagnets.com)

### 2 Hazard Identification

**Fatalness:** N/A for magnets themselves. Fine powders or dust are flammable.

**Health Hazard:** Prolonged skin contact may cause irritation or allergic dermatitis.

**Chemical Hazard:** Prolonged immersion in water and acid can form hydrogen.

**Physical Hazard:** Magnets have very strong magnetic forces which make them attract to other magnets and other ferromagnetic materials such as iron or steel. This may result in injury during handling of magnets.

### 3 Composition/Information on Ingredients

Element Name	Molecular Formula	Weight %	CAS No.	EINECS No.
Samarium	Sm	20-27	7440-19-9	231-128-7
Praseodymium *	Pr	13-17	7440-10-0	231-120-3
Cobalt	Co	45-65	7440-48-4	231-158-0
Iron **	Fe	10-20	7439-89-6	231-096-4
Copper **	Cu	5-8	7440-50-8	231-159-6
Zirconium **	Zr	2-4	7440-67-7	231-176-9

Note:

\* The element is contained in 1:5 type sintered samarium cobalt (SmCo5) magnets.

\*\* These elements are contained in 2:17 type sintered samarium cobalt (Sm2Co17) magnets.

### 4 First Aid Measures

**Inhalation:** N/A for magnets themselves. When fine powders or dust inhaled, go outdoors to breathe fresh air. Go to see a doctor if any symptom occurs and/or persists.

**Skin Contact:** Wash thoroughly with soap and water. Go to see a doctor if any symptom occurs and/or persists.

**Eye Contact:** Flush with running water until clear. Go to see a doctor if any symptom occurs and/or persists.

**Swallowing:** Drink enough warm water and induce vomiting. Go to see a doctor immediately if any magnet

or fragment cannot be got out of body or any symptom occurs and/or persists.

## 5 Firefighting Measures

**Hazardous Combustion Products:** N/A.

**Extinguishing Media:** Dry chemicals without oxygen compounds or sand.

**Special Fire Fighting Procedures:** Isolate smoldering, burning powders. Do not use Halon or water.

**Unusual Fire and Explosion Hazards:** Fine powders will oxidize, smolder, and burn in the presence of air or oxygen. Magnets may spark on impact.

## 6 Accidental Release Measures

**Magnets:** N/A.

**Powders/Dust:** Sweep up released powders or dust with a damp mop or broom and store in water slurry or sealed containers. Do not collect powders or dust with a vacuum cleaner.

## 7 Handling and Storage

### Handling:

Wear gloves during long time handling.

Magnets have very strong magnetic forces which make them attract to other magnets and other ferromagnetic materials such as iron or steel, pay attention to hand or body injury.

Keep magnets away from any floppy disk, magnetic card or electronic watch which may cause data loss or change.

Keep magnets away from any person wearing electronic medical devices such as heart pacemaker.

### Storage:

Store magnets in a cool and ventilated warehouse.

Keep magnets away from humid and corrosive environments.

Store magnetized products in a closed container with label.

### Additional Information:

Pay attention to powders or dust during machining which may cause fire.

## 8 Exposure Controls and Personal Protection

**MAC:** N/A.

**Engineering Controls:** Use wet machining processes and ventilation apparatus during production.

**Respiratory Protection:** Wear mask or respirator during handling and/or machining.

**Skin Protection:** Wear protective gloves during handling and/or machining.

**Eye Protection:** Wear safety glasses or goggles during handling and/or machining.

**Additional Precautions:** Smoking, eating and drinking are prohibited in the working area.

## 9 Physical and Chemical Characteristics

**Material Form:** Solid state

**Appearance:** Gray or brown (after high temperature stabilization treatment)

**Melting Point:** Approx 1300 °C

**Boiling Point:** N/A

**Vapor Pressure:** N/A

**Vapor Density:** N/A

**Explosion:** N/A for magnets themselves. Fine powders or dust may be explosive.

**Specific Gravity:** 8.2 – 8.5

**Evaporation Rate:** N/A

**Odor:** Odorless

**Solubility:** Insoluble in water, soluble in acids.

## 10 Stability and Reactivity

**Stability:** Stable in air.

**Incompatibility (Materials to Avoid):** Acids, highly active oxidizers.

**Conditions to Avoid:** Open flames, humid and corrosive environments.

## 11 Toxicological Information

**Acute Toxicity:**

Cobalt (Co)	LD50	Oral 6170 mg/kg (rat)
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**Irritation:** Prolonged skin contact may cause irritation or allergenic dermatitis.

**Carcinogenicity:** N/A

**Chronic toxicity:** No record.

## 12 Ecological Information

**Ecotoxicity:** No record.

**Persistence and Degradability:** No record.

**Bioaccumulation:** No record.

**Mobility in Soil:** No record.

## 13 Disposal Considerations

**Waste Disposal Method:** Dispose in compliance with local regulations.

## 14 Transport Information

**Transportation Regulations:** Magnets by air transportation shall be in compliance with IATA regulations, packaging or containers with magnetized magnets inside shall conduct a test and obtain a certificate for safe transport of goods.

**Transportation Considerations:**

Check packaging or containers for completeness and sealing before shipping, ensuring that they do not leak, collapse, fall and damage during shipping.

Avoid sunlight, rain, high temperature, impact and friction.

Avoid assorted packing with acids and oxidizers.

Handle carefully to prevent packaging or containers from damage.

## **15 Regulatory Information**

Be in compliance with local regulations.

## **16 Other Information**

**Note:** The above information is based on our present knowledge and does not purport to be all-inclusive. It shall be used only as a guide in general, however, it shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. CHENGDU HEAVEN AND GREAT TECHNOLOGY CO.,LTD shall not be held liable for any damage resulting from handling or from contact with the above product.