# MATERIAL SAFETY DATA SHEET

**CHEMICAL IDENTITY**

<table>
<thead>
<tr>
<th>LABEL IDENTITY</th>
<th>Samarium Cobalt Magnet</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMICAL NAME/SYNONYMS</td>
<td>Samarium Cobalt Magnet</td>
</tr>
<tr>
<td>FORMULA</td>
<td>SmCo</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HAZARDOUS INGREDIENTS</th>
<th>%</th>
<th>TLV:</th>
<th>OSHA/PEL:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samarium</td>
<td>30-40</td>
<td>not yet determined</td>
<td>not yet determined</td>
</tr>
<tr>
<td>Cobalt</td>
<td>60-80</td>
<td>0.1mg/m3</td>
<td>0.1mg/m3</td>
</tr>
<tr>
<td>Other rare earth’s</td>
<td>0-5</td>
<td>not yet determined</td>
<td>not yet determined</td>
</tr>
</tbody>
</table>

## PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>COLOR, FORM AND ODOR</th>
<th>Light gray metal powder, no odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILING POINT</td>
<td>Above 1900°C</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY (H2O=1)</td>
<td>8.3/8.5</td>
</tr>
<tr>
<td>VAPOR PRESSURE @ 20°</td>
<td>No vapors</td>
</tr>
<tr>
<td>% VOLATILE BY VOLUME (%)</td>
<td>ND</td>
</tr>
<tr>
<td>REACTIVITY IN WATER</td>
<td>Unknown</td>
</tr>
<tr>
<td>EVAPORATION RATE (H2O=1)</td>
<td>ND</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>Negligible</td>
</tr>
<tr>
<td>MELTING POINT</td>
<td>Above 1050°C</td>
</tr>
</tbody>
</table>

## FIRE AND EXPLOSION HAZARD DATA

<table>
<thead>
<tr>
<th>FLASH POINT</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOIGNITION TEMPERATURE (°C)</td>
<td>150-180°C</td>
</tr>
<tr>
<td>FLAMMABLE LIMITS</td>
<td>Unknown</td>
</tr>
<tr>
<td>EXTINGUISHING MEDIA</td>
<td>Low pressure Argon or Nitrogen/dry chemical</td>
</tr>
<tr>
<td>SPECIAL FIRE FIGHTING PROCEDURES</td>
<td>DO NOT USE WATER or HALON AGENTS. Isolate and contain burning material. Blanket with dry Argon or Nitrogen, or smother with dry chemical</td>
</tr>
</tbody>
</table>

## UNUSUAL FIRE & EXPLOSION HAZARDS

When exposed to atmosphere or oxygen, powder will oxidize and burn/smolder. Rare earth metals burn vigorously in Halogen vapors above 392°F
SAMARIUM COBALT MAGNETS
MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Unknown**

SIGNS AND SYMPTOMS OF OVEREXPOSURE (acute and chronic): **Unknown**

Chemicals Listed as Carcinogen National Toxicity Yes _____ NIOSH _____
or Potential Carcinogen Program No _____ RTECA _____

I.A.R.C. Yes _____ OSHA Yes _____
Monographs No _____ No _____

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **NA**
INHALATION: **NA**
SKIN CONTACT: **Brush off powder. Wash well with soap and water.**
EYE CONTACT: **Flush with running water for at least 15 minutes, including under eyelids.**

REACTIVITY DATA

STABILITY Unstable
INCOMPATIBILITY (MATERIALS TO AVOID) Acids, oxygen, water, halogenated hydrocarbons, phosphorus, nitrogen, or strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS **Unknown**
HAZARDOUS POLYMERIZATION **Will Not Polymerize**
CONDITIONS TO AVOID Exposure of powder to atmosphere or oxygen

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Collect material from area and dispose of.

WASTE DISPOSAL METHOD:
Dispose of in accordance with federal, state and local regulations.
SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION
- NIOSH approved (dust, fume, mist)
  - General area

VENTILATION
- General area

LOCAL EXHAUST
- TLV requirements

MECHANICAL (general)
- Unknown

SPECIAL
- No data

OTHER
- No data

PROTECTIVE GLOVES
- Cloth

EYE PROTECTION
- Safety glasses

OTHER PROTECTIVE EQUIPMENT
- Eyewash station should be readily available
- Follow good industrial hygiene and housekeeping practices

WORK/HYGENIC PRACTICES

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:
- Treat as Flammable Solid. Keep away from ignition sources and strong oxidizers.
- Store under inert atmosphere in non-combustible containers.

TRANSPORTATION REQUIREMENTS
- DOT CLASS: ND
- UN NUMBER: ND
- IMCO CLASS: ND
- OTHER: ND

PRECAUTIONARY LABELING
- NONE

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NA= NOT APPLICABLE  ND= NO DATA FOUND  NR= NOT RECORDED