



# SAFETY DATA SHEET

**MATERION**

## 1. Product and company identification

Name of the chemical Iron Boron Cobalt Product

Other means of identification  
SDS number 342

Recommended use of the chemical and restrictions on use  
Recommended use Not available.  
Recommended restrictions None known.

Manufacturer/Importer/Supplier/  
Distributor information Materion Advanced Materials Group

Address 42 Mt. Ebo Road South  
Brewster NY 10509  
United States

Telephone Supplier Phone 1+845.279.0900

E-mail Not available.

Contact person Not available.

Emergency telephone  
number Chemtrec 1+703.527.3887

## 2. Hazards identification

Hazard classification

Physical hazards Not classified.

Health hazards  
Sensitization, respiratory Category 1  
Sensitization, skin Category 1  
Carcinogenicity Category 2  
Reproductive toxicity Category 2  
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Hazardous to the aquatic environment, long-term hazard Category 4

Label elements

Symbols None.

Signal word None.

Hazard statement The Material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

Precautionary statement None.

Other hazards None known.

Supplemental information None.

## 3. Composition/information on ingredients

### Mixture

Chemical properties	CAS Number	Concentration (%)
Iron	7439-89-6	10 - 90
Boron	7440-42-8	0.1 - 50
Cobalt	7440-48-4	1 - 30

## 4. First aid measures

### First aid measures for different exposure routes

Inhalation Not available.

Skin contact	Not available.
Eye contact	Not available.
Ingestion	Not available.
Most important symptoms and effects	Not available.
Personal protection for first-aid responders	Not available.
Notes to physician	Not available.

## 5. Fire-fighting measures

Extinguishing media	Not available.
Extinguishing media to avoid	None.
Specific hazards during fire fighting	None.
Special fire fighting procedures	None.
Protection of fire-fighters	None.

## 6. Accidental release measures

Personal precautions	Not available.
Environmental precautions	Not available.
Spill cleanup methods	Not available.

## 7. Handling and storage

Handling	Not available.
Storage	Not available.

## 8. Exposure controls/personal protection

### Exposure limits

Taiwan. OELs (Standards of Permissible Exposure Limits at Workplace, OSHA No. 10302007931), as amended

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	STEL	0.15 mg/m3	Dust and fume.

Taiwan. OELs. (Standards of Permissible Exposure Limits at Workplace)

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0.05 mg/m3	Dust and fume.

US. ACGIH Threshold Limit Values

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0.02 mg/m3

### Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	15 µg/l	Cobalt	Urine	*

\* - For sampling details, please see the source document.

Appropriate engineering controls Not available.

### Individual protection measures, such as personal protective equipment

Eye/face protection	Not available.
Skin protection	
Hand protection	Not available.
Other	Not available.
Respiratory protection	Not available.
Thermal hazards	Not available.

## 9. Physical and chemical properties

### Appearance

Physical state	Solid.
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Form	Not available.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
Melting point/freezing point	2723 °F (1495 °C) estimated
pH	Not available.
Boiling point, initial boiling point, and boiling range	5181.8 °F (2861 °C) estimated
Flammability (solid, gas)	Not available.
Flash point	Not available.
Decomposition temperature	Not available.
Auto-ignition temperature	1076 °F (580 °C) estimated
<b>Upper/lower flammability or explosive limits</b>	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.00001 hPa estimated
Vapor density	Not available.
Density	2.36 g/cm3 estimated
<b>Solubility(ies)</b>	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Evaporation rate	Not available.
<b>Other data</b>	
Specific gravity	2.36 estimated

## 10. Stability and reactivity

Stability	Not available.
Possibility of hazardous reactions	Not available.
Conditions to avoid	None.
Incompatible materials	None.
Hazardous decomposition products	None.

## 11. Toxicological information

### Information on likely routes of exposure

Inhalation	Not available.
Skin contact	Not available.
Eye contact	Not available.
Ingestion	Not available.
Symptoms	Not available.

### Information on toxicological effects

Acute toxicity	Not available.
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## Respiratory or skin sensitization

### ACGIH sensitization

HARD METALS CONTAINING COBALT AND TUNGSTEN CARBIDE, THORACIC FRACTION, AS CO (CAS 7440-48-4) Respiratory sensitization

**Respiratory sensitization** Not available.

**Skin sensitization** Not available.

**Germ cell mutagenicity** Not available.

## Carcinogenicity

### ACGIH Carcinogens

Cobalt (CAS 7440-48-4) A2 Suspected human carcinogen.  
A3 Confirmed animal carcinogen with unknown relevance to humans.

### IARC Monographs. Overall Evaluation of Carcinogenicity

Cobalt (CAS 7440-48-4) 2B Possibly carcinogenic to humans.

**Reproductive toxicity** Not available.

**Specific target organ toxicity - single exposure** Not available.

**Specific target organ toxicity - repeated exposure** Not available.

**Aspiration hazard** Not available.

**Chronic effects** Not available.

## 12. Ecological information

**Ecotoxicity** No ecotoxicity data noted for the ingredient(s).

**Persistence and degradability** Not available.

**Bioaccumulation** Not available.

**Mobility in soil** Not available.

**Other hazardous effects** Not available.

## 13. Disposal considerations

**Disposal instructions** Not available.

**Residual waste** Not available.

**Contaminated packaging** Not available.

**Local disposal regulations** Not available.

## 14. Transport information

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not available.

## 15. Regulatory information

### Applicable regulations

#### Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

Not listed.

#### Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Cobalt (CAS 7440-48-4) Listed.

#### Hazardous Substances and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations

Iron (CAS 7439-89-6) Class 2: Flammable Solids

Cobalt (CAS 7440-48-4)

**International regulations**

**Stockholm Convention**

Not applicable.

**Rotterdam Convention**

Not applicable.

**Montreal Protocol**

Not applicable.

**Kyoto protocol**

Not applicable.

**Basel Convention**

Not applicable.

**16. Other information**

**References**

Not available.

**Issued by**

Not available.

**Prepared by**

Not available.

**Issue date**

02-12-2018

**Revision information**

Product and Company Identification: Product Review  
Composition / Information on Ingredients: Ingredients