



# MATERIAL SAFETY DATA SHEET

Revised

May 2015

## Section 1 - Product and Company Information

### **Product detail**

Product Name: Cobalt Oxide

Synonyms: Cobalt (II,III) oxide

Molecular Formula:  $\text{Co}_3\text{O}_4$

### **Manufacturer/Supplier**

Arlington International, Inc.

333 West Drake Road, Suite 220

Fort Collins, CO 80526

Tel: (001) 970-494-0244

Fax: (001) 970-494-0206

Website: <http://www.arlingtonintl.com>

## Section 2 - Composition/Information on Ingredients

Product Name: Cobalt Oxide

CAS No.: 1308-06-1

EINECS/ELINCS: 2151572

Hazard Symbols: Xn

## Section 3 - Hazards Identification

### **Emergency overview**

Harmful.

Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

Target organ(s): Lungs.

### **HMIS rating**

Health: 2

Flammability: 0

Reactivity: 0

### **NFPA rating**

Health: 2

Flammability: 0

Reactivity: 0

For additional information on toxicity, please refer to Section 11.

#### Section 4 - First Aid Measures

##### **Oral exposure**

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

##### **Inhalation exposure**

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

##### **Dermal exposure**

In case of contact, immediately wash skin with soap and copious amounts of water.

##### **Eye exposure**

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

#### Section 5 - Fire Fighting Measures

##### **Flash point**

N/A

##### **Autoignition temp**

N/A

##### **Flammability**

N/A

##### **Extinguishing media**

Suitable: Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

##### **Firefighting**

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s): Emits toxic fumes under fire conditions.

#### Section 6 - Accidental Release Measures

##### **Procedure to be followed in case of leak or spill**

Evacuate area.

##### **Procedure(s) of personal precaution(s)**

Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

##### **Methods for cleaning up**

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

#### Section 7 - Handling and Storage

##### **Handling**

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

##### **Storage**

Suitable: Keep tightly closed.

##### **Special requirements**

Hygroscopic.

## Section 8 - Exposure Controls / Personal Protection

### Engineering controls

Safety shower and eye bath required. Mechanical exhaust required.

### Personal protective equipment

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

### General hygiene measures

Wash thoroughly after handling.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Cobalt oxide Co <sub>3</sub> O <sub>4</sub>	0.02mg/m <sup>3</sup> TWA (as Co)	none listed	none listed
Cobalt(II) oxide	0.02mg/m <sup>3</sup> TWA (as Co)	none listed	none listed

## Section 9 - Physical/Chemical Properties

Physical State: Solid

Color: Black-gray

Form: Powder

Molecular Weight: 240.80

Molecular Formula: Co<sub>3</sub>O<sub>4</sub>

pH: N/A

Boiling Point: N/A

Freezing/Melting Point: 895 °C

Flash Point: N/A

Decomposition Temperature: N/A

Autoignition Temperature: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Saturated Vapor: N/A

Density: 6.11g/ml at 25°C

Bulk Density: N/A

Odor Threshold: N/A

Volatile: N/A

Evaporation Rate: N/A

Viscosity: N/A

Surface Tension: N/A

Partition Coefficient: N/A

Explosion Limits: N/A

Flammability: N/A

Refractive Index N/A

Optical Rotation N/A

Solubility: Insoluble in water

N/A = not available

## Section 10 - Stability and Reactivity

### **Stability**

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Reducing agent.

### **Hazardous decomposition products**

Hazardous Decomposition Products: N/A

### **Hazardous polymerization**

Hazardous Polymerization: Will not occur.

## Section 11 - Toxicological Information

### **Route of exposure**

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

### **Sensitization**

Skin: May cause allergic skin reaction.

### **Signs and symptoms of exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### **Target organ(s) or system(s)**

Lung.

### **Toxicity data**

Oral

LD50: >5000 mg/kg (rat)

Intraperitoneal

LD50: 1890mg/kg (mouse)

## Section 12 - Ecological Information

### **Acute ecotoxicity tests**

Test Type: LC50 Fish

Species: Brachydanio rerio

Time: 96 h

Value: > 136 mg/l

Test Type: EC50 Daphnia

Species: Daphnia magna

Time: 48 h

Value: > 136 mg/l

Test Type: EC50 Algae

Species: Selenastrum capricornutum resp.

Time: 72 h

Value: 88 mg/l

### **Environmental**

Cobalt uptake and phytotoxicity are affected by soil pH. More acidic soils absorb cobalt less strongly.

## **Section 13 - Disposal Considerations**

### **Appropriate method of disposal of substance or preparation**

Contact a licensed professional waste disposal service to dispose of this material.  
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.  
Observe all federal, state, and local environmental regulations.

## **Section 14 - Transport Information**

### **DOT**

Proper Shipping Name: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

### **IATA**

Non-Hazardous for Air Transport: Non-hazardous for air transport.

## **Section 15 - Regulatory Information**

### **EU additional classification**

Symbol of Danger: Xn

Indication of Danger: Harmful.

R: 40-43

Risk Statements: Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

S: 36/37

Safety Statements: Wear suitable protective clothing and gloves.

### **US classification and label text**

Indication of Danger: Harmful.

Risk Statements: Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

Safety Statements: Wear suitable protective clothing.

US Statements: Target organ(s): Lungs.

### **US regulatory information**

SARA listed: Yes

DEMINIMIS: 0.1 %

NOTES: This product is subject to SARA section 313 reporting requirements - chromium compounds.

TSCA inventory item: Yes

### **Canada regulatory information**

WHMIS classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

## Section 16 - Other Information

### **Warranty**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall **Arlington International, Inc.** be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if **Arlington International, Inc.** has been advise the possibility of such damages.