



# PRODUCT INFORMATION SHEET

**MATERION**

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Name of the substance** Cobalt Oxide  
**Identification number** 027-002-00-4 (Index number)  
**Synonyms** None.  
**Document number** 88  
**Issue date** 16-November-2016  
**Version number** 01

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Not available.  
**Uses advised against** None known.

### 1.3. Details of the supplier of the product information sheet

#### Supplier

**Company name** Materion Advanced Materials Group  
**Address** 42 Mt. Ebo Road South  
Brewster, NY 10509  
United States  
**Division**  
**Telephone** Supplier Phone 1+845.279.0900  
**e-mail** Not available.  
**Contact person** Not available.

**1.4. Emergency telephone number** Chemtrec 1+703.527.3887

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 as amended

##### Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Carcinogenicity	Category 2	H351 - Suspected of causing cancer.

##### Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard	Category 1 M-factor = 10.	
Hazardous to the aquatic environment, long-term aquatic hazard	Category 1 M-factor = 10.	H410 - Very toxic to aquatic life with long lasting effects.

**Hazard summary** Exposure to powder or dusts may be irritating to eyes, nose and throat. Prolonged exposure may cause chronic effects.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

**Contains:** Cobalt Oxide  
**Hazard pictograms** None.  
**Signal word** Warning  
**Hazard statements**  
H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.  
H351 Suspected of causing cancer.  
H410 Very toxic to aquatic life with long lasting effects.

#### Precautionary statements

##### Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

#### Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.

#### Storage

P405	Store locked up.
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#### Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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#### Supplemental label information

None.

#### 2.3. Other hazards

None known.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

##### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Cobalt Oxide	100 - 100	1307-96-6 215-154-6	-	027-002-00-4	M=10
<b>Classification:</b>	Acute Tox. 4;H302, Skin Sens. 1;H317, Carc. 2;H351, Aquatic Chronic 1;H410				

### SECTION 4: First aid measures

**General information** Not available.

#### 4.1. Description of first aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Not available.
<b>Eye contact</b>	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Not available.

**4.2. Most important symptoms and effects, both acute and delayed** Dusts may irritate the respiratory tract, skin and eyes.

**4.3. Indication of any immediate medical attention and special treatment needed** Not available.

### SECTION 5: Firefighting measures

**General fire hazards** Not available.

#### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Not available.
<b>Unsuitable extinguishing media</b>	Not available.

**5.2. Special hazards arising from the substance or mixture** Not available.

### 5.3. Advice for firefighters

<b>Special protective equipment for firefighters</b>	Not available.
<b>Special firefighting procedures</b>	Use water spray to cool unopened containers.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
<b>For emergency responders</b>	Not available.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the SDS.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Practice good housekeeping.

**7.2. Conditions for safe storage, including any incompatibilities** Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

**7.3. Specific end use(s)** Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

#### Austria. TRK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Cobalt Oxide (CAS 1307-96-6)	STEL	0,4 mg/m <sup>3</sup>	Inhalable fraction.
	TWA	0,1 mg/m <sup>3</sup>	Inhalable fraction.

#### Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Material	Type	Value
Cobalt Oxide (CAS 1307-96-6)	TWA	0,1 mg/m <sup>3</sup>

#### Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value
Cobalt Oxide (CAS 1307-96-6)	MAC	0,1 mg/m <sup>3</sup>

#### Czech Republic. OELs. Government Decree 361

Material	Type	Value
Cobalt Oxide (CAS 1307-96-6)	Ceiling	0,1 mg/m <sup>3</sup>
	TWA	0,05 mg/m <sup>3</sup>

#### Denmark. Exposure Limit Values

Material	Type	Value
Cobalt Oxide (CAS 1307-96-6)	TLV	0,01 mg/m <sup>3</sup>

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)**

<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,05 mg/m3	
<b>Finland. Workplace Exposure Limits</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,02 mg/m3	
<b>Greece. OELs (Decree No. 90/1999, as amended)</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,1 mg/m3	
<b>Hungary. OELs. Joint Decree on Chemical Safety of Workplaces</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	STEL	0,4 mg/m3	
	TWA	0,1 mg/m3	
<b>Iceland. OELs. Regulation 154/1999 on occupational exposure limits</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Cobalt Oxide (CAS 1307-96-6)	TWA	0,02 mg/m3	Dust and fume.
<b>Ireland. Occupational Exposure Limits</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,1 mg/m3	
<b>Italy. Occupational Exposure Limits</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,02 mg/m3	
<b>Latvia. OELs. Occupational exposure limit values of chemical substances in work environment</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,5 mg/m3	
<b>Lithuania. OELs. Limit Values for Chemical Substances, General Requirements</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,05 mg/m3	
<b>Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,02 mg/m3	
<b>Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,02 mg/m3	
<b>Romania. OELs. Protection of workers from exposure to chemical agents at the workplace</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	STEL	0,1 mg/m3	
	TWA	0,05 mg/m3	
<b>Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	
Cobalt Oxide (CAS 1307-96-6)	TWA	0,05 mg/m3	

**Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)**

Material	Type	Value	Form
Cobalt Oxide (CAS 1307-96-6)	TWA	0,1 mg/m <sup>3</sup>	Inhalable fraction.

**Spain. Occupational Exposure Limits**

Material	Type	Value
Cobalt Oxide (CAS 1307-96-6)	TWA	0,02 mg/m <sup>3</sup>

**Sweden. Occupational Exposure Limit Values**

Material	Type	Value	Form
Cobalt Oxide (CAS 1307-96-6)	TWA	0,02 mg/m <sup>3</sup>	Inhalable dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

Material	Type	Value	Form
Cobalt Oxide (CAS 1307-96-6)	TWA	0,05 mg/m <sup>3</sup>	Dust/aerosol, inhalable.

**UK. EH40 Workplace Exposure Limits (WELs)**

Material	Type	Value
Cobalt Oxide (CAS 1307-96-6)	TWA	0,1 mg/m <sup>3</sup>

**Biological limit values**

**France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065))**

Material	Value	Determinant	Specimen	Sampling time
Cobalt Oxide (CAS 1307-96-6)	15 µg/l	Cobalt	Urine	*
	1 µg/l	Cobalt	Blood	*

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

**Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices**

Material	Value	Determinant	Specimen	Sampling time
Cobalt Oxide (CAS 1307-96-6)	0,03 mg/g	Cobalt	Creatinine in urine	*
	0,058 µmol/mmol	Cobalt	Creatinine in urine	*

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

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

**8.2. Exposure controls**

**Appropriate engineering controls** If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

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

**General information** Not available.

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

- **Hand protection** Not available.

- **Other** Not available.

**Respiratory protection** Wear respirator with dust filter.

**Thermal hazards** Not available.

**Hygiene measures** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental exposure controls** Not available.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

**Physical state** Solid.  
**Form** Powder.  
**Colour** Not available.  
**Odour** Not available.  
**Odour threshold** Not available.  
**pH** Not available.  
**Melting point/freezing point** 1935 °C (3515 °F)  
**Initial boiling point and boiling range** Not available.  
**Flash point** Not available.  
**Evaporation rate** Not available.  
**Flammability (solid, gas)** Not available.

#### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.  
**Flammability limit - upper (%)** Not available.  
**Vapour pressure** < 0,0000001 kPa at 25 °C  
**Vapour density** Not available.  
**Relative density** Not available.  
**Solubility(ies)**  
**Solubility (water)** Not available.  
**Solubility (other)** Not available.  
**Partition coefficient (n-octanol/water)** Not available.  
**Auto-ignition temperature** Not available.  
**Decomposition temperature** Not available.  
**Viscosity** Not available.  
**Explosive properties** Not available.  
**Oxidising properties** Not available.

### 9.2. Other information

**Density** 5,70 g/cm<sup>3</sup> estimated  
**Molecular formula** Co-O  
**Molecular weight** 74,93 g/mol  
**Specific gravity** 5,7 - 6,7

## SECTION 10: Stability and reactivity

**10.1. Reactivity** Not available.  
**10.2. Chemical stability** Not available.  
**10.3. Possibility of hazardous reactions** Not available.  
**10.4. Conditions to avoid** Contact with incompatible materials.  
**10.5. Incompatible materials** Not available.  
**10.6. Hazardous decomposition products** Not available.

## SECTION 11: Toxicological information

**General information** Not available.  
**Information on likely routes of exposure**  
**Inhalation** Dust may irritate respiratory system.  
**Skin contact** Dust or powder may irritate the skin.

<b>Eye contact</b>	Dust may irritate the eyes.
<b>Ingestion</b>	Not available.
<b>Symptoms</b>	Dusts may irritate the respiratory tract, skin and eyes.

#### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	No data available.
<b>Skin corrosion/irritation</b>	Not available.
<b>Serious eye damage/eye irritation</b>	Not available.
<b>Respiratory sensitisation</b>	Not available.
<b>Skin sensitisation</b>	Not available.
<b>Germ cell mutagenicity</b>	Not available.
<b>Carcinogenicity</b>	Risk of cancer cannot be excluded with prolonged exposure.

#### Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Cobalt Oxide (CAS 1307-96-6)

2B Possibly carcinogenic to humans.

<b>Reproductive toxicity</b>	Not available.
<b>Specific target organ toxicity - single exposure</b>	Not available.
<b>Specific target organ toxicity - repeated exposure</b>	Not available.
<b>Aspiration hazard</b>	Not available.
<b>Mixture versus substance information</b>	Not available.
<b>Other information</b>	Not available.

## SECTION 12: Ecological information

<b>12.1. Toxicity</b>	No toxicity data noted for the ingredient(s).
<b>12.2. Persistence and degradability</b>	Not available.
<b>12.3. Bioaccumulative potential</b>	Not available.
<b>Partition coefficient n-octanol/water (log Kow)</b>	Not available.
<b>Bioconcentration factor (BCF)</b>	Not available.
<b>12.4. Mobility in soil</b>	Not available.
<b>12.5. Results of PBT and vPvB assessment</b>	Not a PBT or vPvB substance or mixture.
<b>12.6. Other adverse effects</b>	Not available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN3288
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**14.2. UN proper shipping name** Toxic solid, inorganic, n.o.s. (Cobalt Oxide)

**14.3. Transport hazard class(es)**

**Class** 6.1(PGIII)

**Subsidiary risk** -

**Label(s)** 6.1

**Hazard No. (ADR)** 60

**Tunnel restriction code** E

**14.4. Packing group** III

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**RID**

**14.1. UN number** UN3288

**14.2. UN proper shipping name** Toxic solid, inorganic, n.o.s. (Cobalt Oxide)

**14.3. Transport hazard class(es)**

**Class** 6.1(PGIII)

**Subsidiary risk** -

**Label(s)** 6.1

**14.4. Packing group** III

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**ADN**

**14.1. UN number** UN3288

**14.2. UN proper shipping name** Toxic Solid, N.o.s. (Cobalt Oxide)

**14.3. Transport hazard class(es)**

**Class** 6.1(PGIII)

**Subsidiary risk** -

**Label(s)** 6.1

**14.4. Packing group** III

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IATA**

14.1. - 14.6.: Not regulated as dangerous goods.

**IMDG**

14.1. - 14.6.: Not regulated as dangerous goods.

**ADN; ADR; RID**



## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I**

Not listed.



**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### **Authorisations**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

#### **Restrictions on use**

**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use**

Not regulated.

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

#### **Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Cobalt Oxide (CAS 1307-96-6)

#### **National regulations**

Follow national regulation for work with chemical agents.

#### **15.2. Chemical safety assessment**

Not available.

### **SECTION 16: Other information**

#### **List of abbreviations**

Not available.

#### **References**

Not available.

#### **Information on evaluation method leading to the classification of mixture**

Not applicable.

#### **Training information**

Follow training instructions when handling this material.

#### **Disclaimer**

Materion Advanced Materials Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.