



# SAFETY DATA SHEET

**MATERION**

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

### 1.1. Product identifier

**Name of the substance** Cobalt(ii) Sulfate Heptahydrate  
**Identification number** 027-005-00-0 (Index number)  
**Synonyms** None.  
**Document number** 1UG  
**Materion Code** 1UG  
**Issue date** 24-October-2016  
**Version number** 02  
**Revision date** 12-January-2018  
**Supersedes date** 24-October-2016

### 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 safety data sheet

#### Supplier

**Company name** Materion Advanced Chemicals Inc.  
**Address** 407 N. 13th Street  
1316 W. St. Paul Avenue  
Milwaukee, WI 53233  
United States  
**Division** Milwaukee  
**Telephone** 414.212.0257  
**e-mail** advancedmaterials@materion.com  
**Contact person** Noreen Atkinson

### 1.4. Emergency telephone number

## 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.
Respiratory sensitisation	Category 1	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation	Category 1	
Germ cell mutagenicity	Category 2	
Carcinogenicity (inhalation)	Category 1B	H350 - May cause cancer.
Reproductive toxicity (fertility)	Category 1B	

##### 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** Not available.

### 2.2. Label elements

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

**Contains:** Cobalt(ii) Sulfate Heptahydrate

## Hazard pictograms



## Signal word

Danger

## Hazard statements

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

## Precautionary statements

### Prevention

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P270	Do not eat, drink or smoke when using this product.
P285	In case of inadequate ventilation wear respiratory protection.
P261	Avoid breathing dust.

### Response

P363	Wash contaminated clothing before reuse.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

### Storage

Store away from incompatible materials.

### 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(ii) Sulfate Heptahydrate	100	10026-24-1 233-334-2	-	027-005-00-0	M=10
<b>Classification:</b>	Acute Tox. 4;H302, Skin Sens. 1B;H317, Resp. Sens. 1;H334, Carc. 1B;H350, Aquatic Chronic 1;H410				1

## SECTION 4: First aid measures

**General information** Not available.

### 4.1. Description of first aid measures

#### Inhalation

Move to fresh air. Call a physician or poison control centre immediately.

#### Skin contact

Not available.

#### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician or poison control centre immediately.

#### Ingestion

Rinse mouth thoroughly. Call a physician or poison control centre immediately.

### 4.2. Most important symptoms and effects, both acute and delayed

Not available.

### 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

**Suitable extinguishing media** Alcohol resistant foam. Water spray.

**Unsuitable extinguishing media** Not available.

### 5.2. Special hazards arising from the substance or mixture

Decomposition of this product may yield oxides of sulfur and nitrogen.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Not available.

## SECTION 6: Accidental release measures

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

**For non-emergency personnel** Not available.

**For emergency responders** Not available.

### 6.2. Environmental precautions

Not available.

### 6.3. Methods and material for containment and cleaning up

Not available.

### 6.4. Reference to other sections

Not available.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Not available.

### 7.2. Conditions for safe storage, including any incompatibilities

Not available.

### 7.3. Specific end use(s)

Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

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

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,1 mg/m <sup>3</sup>

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

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	Ceiling	0,1 mg/m <sup>3</sup>
	TWA	0,05 mg/m <sup>3</sup>

#### **Denmark. Exposure Limit Values**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	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)**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,05 mg/m <sup>3</sup>

**Finland. Workplace Exposure Limits**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>

**Greece. OELs (Decree No. 90/1999, as amended)**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,1 mg/m <sup>3</sup>

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	STEL	0,4 mg/m <sup>3</sup>
	TWA	0,1 mg/m <sup>3</sup>

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

Material	Type	Value	Form
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>	Dust and fume.

**Ireland. Occupational Exposure Limits**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,1 mg/m <sup>3</sup>

**Italy. Occupational Exposure Limits**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,05 mg/m <sup>3</sup>

**Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>

**Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,05 mg/m <sup>3</sup>

**Spain. Carcinogens and Mutagens with Limit Values (Table 2)**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>

**Spain. Occupational Exposure Limits**

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>

**Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)**

Material	Type	Value	Form
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,02 mg/m <sup>3</sup>	Inhalable dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

Material	Type	Value	Form
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,05 mg/m <sup>3</sup>	Dust/aerosol, inhalable.

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

Material	Type	Value
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	TWA	0,1 mg/m <sup>3</sup>

**Biological limit values****Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health**

Material	Value	Determinant	Specimen	Sampling time
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	130 nmol/l	Cobalt	Urine	*

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

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

Material	Value	Determinant	Specimen	Sampling time
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	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(ii) Sulfate Heptahydrate (CAS 10026-24-1)	0,03 mg/g	Cobalt	Creatinine in urine	*
	0,058 µmol/mmol	Cobalt	Creatinine in urine	*

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

**Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4**

Material	Value	Determinant	Specimen	Sampling time
Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	15 µg/l	Cobalto	Urine	*
	1 µg/l	Cobalto	Blood	*

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

**Recommended monitoring procedures** Not available.

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

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

**8.2. Exposure controls**

**Appropriate engineering controls** Not available.

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

**General information** Not available.

**Eye/face protection** Not available.

**Skin protection**

- **Hand protection** Not available.

- **Other** Not available.

**Respiratory protection** Not available.

**Thermal hazards** Not available.

**Hygiene measures** Not available.

**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** Not available.

**Colour** Not available.

**Odour** Not available.

**Odour threshold** Not available.

**pH** Not available.

**Melting point/freezing point** 735 °C (1355 °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.

**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** 3,71 g/cm<sup>3</sup> estimated at 25 °C

**Molecular formula** Co-O4-S

**Molecular weight** 281,09 g/mol

**Specific gravity** 3,71 at 25 °C

**SECTION 10: Stability and reactivity**

**10.1. Reactivity** Not available.

**10.2. Chemical stability** Not available.

**10.3. Possibility of hazardous reactions** Not available.

<b>10.4. Conditions to avoid</b>	Not available.
<b>10.5. Incompatible materials</b>	Not available.
<b>10.6. Hazardous decomposition products</b>	Not available.

## SECTION 11: Toxicological information

**General information** Not available.

### Information on likely routes of exposure

**Inhalation** Not available.

**Skin contact** Not available.

**Eye contact** Not available.

**Ingestion** Not available.

**Symptoms** Not available.

### 11.1. Information on toxicological effects

#### Acute toxicity

Product	Species	Test results
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Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)

#### **Acute**

##### **Oral**

LD50	Rat	424 mg/kg
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**Skin corrosion/irritation** Not available.

**Serious eye damage/eye irritation** Not available.

**Respiratory sensitisation** Not available.

**Skin sensitisation** Not available.

**Germ cell mutagenicity** Not available.

#### Carcinogenicity

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

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)

#### **IARC Monographs. Overall Evaluation of Carcinogenicity**

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1) 2B Possibly carcinogenic to humans.

**Slovenia. CMR. Protection of workers from exposure to carcinogen and mutagen agents (ULRS 101/2005, as amended)**

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1) Carcinogenic, Category 1B.

**Reproductive toxicity** Not available.

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

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

**Aspiration hazard** Not available.

**Mixture versus substance information** Not available.

**Other information** Not available.

## SECTION 12: Ecological information

### 12.1. Toxicity

Product	Species	Test results
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Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)

#### **Aquatic**

Fish	LC50	Fathead minnow (Pimephales promelas) 2,67 - 4,57 mg/l, 96 hours
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**12.2. Persistence and degradability** Not available.

**12.3. Bioaccumulative potential** 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.
<b>12.7. Additional information</b>	

**Estonia Dangerous substances in groundwater Data**

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	Cobalt (Co) 300 UG/L
	Cobalt (Co) 5 UG/L

**Estonia Dangerous substances in soil Data**

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)	Cobalt (Co) 20 mg/kg
	Cobalt (Co) 300 mg/kg
	Cobalt (Co) 50 mg/kg

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

<b>Residual waste</b>	Not available.
<b>Contaminated packaging</b>	Not available.
<b>EU waste code</b>	Not available.

**SECTION 14: Transport information**

**ADR**

<b>14.1. UN number</b>	UN3077
<b>14.2. UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (Cobalt(ii) Sulfate Heptahydrate)
<b>14.3. Transport hazard class(es)</b>	
Class	9
Subsidiary risk	-
Label(s)	9
Hazard No. (ADR)	90
Tunnel restriction code	E
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

**RID**

<b>14.1. UN number</b>	UN3077
<b>14.2. UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (Cobalt(ii) Sulfate Heptahydrate)
<b>14.3. Transport hazard class(es)</b>	
Class	9
Subsidiary risk	-
Label(s)	9
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

**ADN**

<b>14.1. UN number</b>	UN3077
<b>14.2. UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (Cobalt(ii) Sulfate Heptahydrate)
<b>14.3. Transport hazard class(es)</b>	
Class	9
Subsidiary risk	-
Label(s)	9
<b>14.4. Packing group</b>	III



**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Not available.

#### IATA

**14.1. UN number** UN3077

**14.2. UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (Cobalt(ii) Sulfate Heptahydrate)

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

**Class** 9

**Subsidiary risk** -

**14.4. Packing group** III

**14.5. Environmental hazards** No.

**ERG Code** 9L

**14.6. Special precautions for user** Not available.

#### Other information

**Passenger and cargo aircraft** Allowed with restrictions.

**Cargo aircraft only** Allowed with restrictions.

#### IMDG

**14.1. UN number** UN3077

**14.2. UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(ii) Sulfate Heptahydrate)

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

**Class** 9

**Subsidiary risk** -

**14.4. Packing group** III

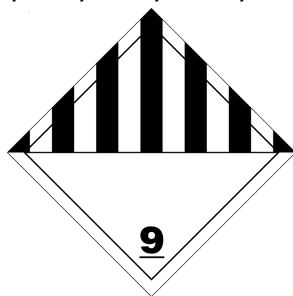
**14.5. Environmental hazards**

**Marine pollutant** No.

**EmS** F-A, S-F

**14.6. Special precautions for user** Not available.

#### ADN; ADR; IATA; IMDG; 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 as amended**

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**

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)

#### **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, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)

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

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)

#### **Other EU regulations**

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

Cobalt(ii) Sulfate Heptahydrate (CAS 10026-24-1)

**National regulations** Not available.

**15.2. Chemical safety assessment** Not available.

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

**List of abbreviations** Not available.

**Information on evaluation method leading to the classification of mixture** Not available.