



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 Sulfide (CoS₂)
Identification number 12013-10-4 (CAS number)
Synonyms None.
Document number C-MSDS0072
Issue date 23-April-2015
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 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 Directive 67/548/EEC or 1999/45/EC as amended

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

Health hazards
Carcinogenicity Category 2 H351 - Suspected of causing cancer.

Hazard summary

Physical hazards Not classified for physical hazards.
Health hazards Not classified for health hazards.
Environmental hazards Not classified for hazards to the environment.
Specific hazards Not available.
Main symptoms Not available.

2.2. Label elements

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

Contains: Cobalt sulphide
Hazard pictograms None.
Signal word Warning
Hazard statements
H351 Suspected of causing cancer.

Precautionary statements

Prevention
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.

Response

P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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 sulphide	100	12013-10-4 235-751-5	-	-	
Classification:	DSD:	-			
	CLP:	Carc. 2;H351			

SECTION 4: First aid measures**General information** Not available.**4.1. Description of first aid measures****Inhalation** Not available.**Skin contact** Not available.**Eye contact** Not available.**Ingestion** Not available.**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** Not available.**Unsuitable extinguishing media** Not available.**5.2. Special hazards arising from the substance or mixture** Not available.**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

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

Material	Type	Value	Form
Cobalt sulphide (CAS 12013-10-4)	STEL	0,4 mg/m ³	Inhalable fraction.
	TWA	0,1 mg/m ³	Inhalable fraction.

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

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,1 mg/m ³

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

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	MAC	0,1 mg/m ³

Czech Republic. OELs. Government Decree 361

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	Ceiling	0,1 mg/m ³
	TWA	0,05 mg/m ³

Denmark. Exposure Limit Values

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TLV	0,01 mg/m ³

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

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,05 mg/m ³

Finland. Workplace Exposure Limits

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,02 mg/m ³

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

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,1 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	STEL	0,4 mg/m ³
	TWA	0,1 mg/m ³

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

Material	Type	Value	Form
Cobalt sulphide (CAS 12013-10-4)	TWA	0,02 mg/m ³	Dust and fume.

Ireland. Occupational Exposure Limits

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,1 mg/m ³

Italy. Occupational Exposure Limits

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,02 mg/m ³

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

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,05 mg/m ³

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,02 mg/m ³

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

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,02 mg/m ³

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

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,05 mg/m ³

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 sulphide (CAS 12013-10-4)	TWA	0,1 mg/m ³	Inhalable fraction.

Spain. Occupational Exposure Limits

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,02 mg/m ³

Sweden. Occupational Exposure Limit Values

Material	Type	Value	Form
Cobalt sulphide (CAS 12013-10-4)	TWA	0,02 mg/m ³	Inhalable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Cobalt sulphide (CAS 12013-10-4)	TWA	0,05 mg/m ³	Dust/aerosol, inhalable.

UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value
Cobalt sulphide (CAS 12013-10-4)	TWA	0,1 mg/m ³

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 sulphide (CAS 12013-10-4)	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 sulphide (CAS 12013-10-4)	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 sulphide (CAS 12013-10-4)	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 level (DNEL) 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

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 applicable.

Odour threshold Not applicable.

pH Not applicable.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Vapour pressure < 0 kPa at 25 °C

Vapour density Not applicable.

Relative density Not applicable.

Solubility(ies)	
Solubility (water)	Not applicable.
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.
Oxidizing properties	Not applicable.
9.2. Other information	
Molecular formula	CoS2

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	Not available.
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

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

Symptoms Not available.

11.1. Information on toxicological effects

Acute toxicity	No data available.
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

IARC Monographs. Overall Evaluation of Carcinogenicity

Cobalt sulphide (CAS 12013-10-4) 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.
Mixture versus substance information	Not available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	No toxicity data noted for the ingredient(s).
12.2. Persistence and degradability	Not available.

12.3. Bioaccumulative potential	Not available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Not available.
Packaging	Not available.
EU waste code	Not available.

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Not listed.

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

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

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

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1) 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.

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

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not listed.

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Not listed.

Directive 94/33/EC on the protection of young people at work

Not listed.

National regulations Not available.

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 available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15 H351 Suspected of causing cancer.

Training information Not available.