

SAFETY DATA SHEET

COBALT SULPHATE



The safety data sheet is in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued 14.06.2017

1.1. Product identifier

Product name COBALT SULPHATE
REACH Reg. No. 01-2119517426-41-0003
CAS no. 10026-24-1
EC no. 233-334-2
Extended SDS with ES incorporated Yes

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

Use of the substance/preparation

- Use of cobalt sulfate in the production of cobalt carbonate
- surface treatment processes (intermediate use)
- inorganic pigments & frits, glass and ceramic ware (intermediate use)
- dyes for the textile, leather, wood and/or paper industry (intermediate use)
- industrial use of cobalt sulfate in the manufacture of chemicals and in other wet-chemical processes as intermediate
- fertilizers and/or feed grade materials
- catalyst in synthesis processes
- fermentation processes and/or biogas production
- Formulation and industrial use of as water treatment chemical, oxygen scavenger, corrosion inhibitor
- Manufacture and industrial use of batteries using cobalt sulfate (intermediate use)
- Professional use of fertilizers containing cobalt sulfate

Uses advised against None.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name Norilsk Nickel Harjavalta Oy
Postal address Teollisuuskatu 1
Postcode 29200
City Harjavalta
Country Finland
Tel +358 2 537 11
E-mail product.safety@nornickel.fi
Enterprise no. FI15917284

1.4. Emergency telephone number

Emergency telephone Description: 3E EH&S Mission Control Center: +44 20 35147487 / Access Code: 334656

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]

- Acute tox. 4; H302,H302
- Eye Irrit. 2; H319,H319
- Resp. Sens. 1A; H334,H334
- Skin Sens. 1; H317,H317
- Repr. 1B; H360F,H360F
- Muta. 2; H341,H341
- Carc. 1B; H350i,H350i
- Aquatic Acute 1; H400,H400
- Aquatic Chronic 1; H410,H410

2.2. Label elements

Hazard Pictograms (CLP)



Signal word	Danger
Hazard statements	H302 Harmful if swallowed. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H360F May damage fertility. H341 Suspected of causing genetic defects H350i May cause cancer by inhalation. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing dust / fume / gas / mist / vapours / spray. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves / protective clothing / eye protection / face protection. P309+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor / physician. P273 Avoid release to the environment.

2.3. Other hazards

PBT / vPvB The PBT and vPvB criteria of Annex XIII to the regulation does not apply to inorganic substances.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance	Identification	Classification	Contents
Cobalt sulphate heptahydrate	CAS no.: 10026-24-1 EC no.: 233-334-2 REACH Reg. No.: 01-2119517426-41-0003	Carc. 1B; H350i Muta. 2; H341 Repr. 1B; H360F Acute tox. 4; H302 Resp. Sens. 1; H334 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Acute 1; H400; M-factor 10 Aquatic Chronic 1; H410; M-factor 10	> 99,9 %
Substance comments	CoSO ₄ · 7H ₂ O		

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove affected person from the immediate area. Ensure supply of fresh air. If breathing is irregular or stopped, administer artificial respiration. Consult a physician.
Skin contact	Wash off with soap and plenty of water. Remove soiled or soaked clothing immediately. Wash contaminated clothing before re-use.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If easy to do, remove contact lens, if worn. If eye irritation persists, consult a specialist.
Ingestion	Rinse mouth. Consult a physician.

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

General symptoms and effects	If inhaled : Cough ; Shortness of breath If swallowed : Vomiting ; Abdominal pain Eyes / Skin : Redness If symptoms persist, call a physician. Treat symptomatically.
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4.3. Indication of any immediate medical attention and special treatment needed

Medical treatment	None.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product itself does not burn. Powder. Carbon dioxide (CO ₂). Water spray.
Improper extinguishing media	None.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	In case of fire, toxic gases may be formed. Sulphurous gases (SO _x). Cobalt oxides
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5.3. Advice for firefighters

Personal protective equipment	Use personal protective equipment as required.
Other Information	Collect contaminated fire extinguishing water separately. Do not discharge into the drains/surface waters/groundwater.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Avoid dust formation. Avoid breathing dust.
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6.2. Environmental precautions

Environmental precautionary measures	Do not allow to enter drains, sewers or watercourses.
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6.3. Methods and material for containment and cleaning up

Other information	Send in suitable containers for recovery or disposal.
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6.4. Reference to other sections

Other instructions	See also section 7, 8,13
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. Avoid inhalation of dust and contact with skin and eyes. Use mechanical ventilation in case of handling which causes formation of dust. Avoid spread of dust.
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Protective Safety Measures

Advice on general occupational hygiene	Private clothes and working clothes should be kept separately.
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7.2. Conditions for safe storage, including any incompatibilities

Storage	Store in tightly closed original container in a dry, cool and well-ventilated place.
Conditions to avoid	Keep away from Strong oxidizing agents.

7.3. Specific end use(s)

Specific use(s)	Industrial use ; professional use
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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Substance	Identification	Value	TWA Year
Cobalt and its inorganic compounds*		TWA (8h): 0,02 mg/m ³ Exposure Limit Letter Letter description: Co Source: HTP Finland	TWA Year: 2012

DNEL / PNEC

Substance	Cobalt sulphate heptahydrate
DNEL	Group: Consumer Route of exposure: Long-term inhalation (local) Value: 16.6 µg/m ³ Group: Professional Route of exposure: Long-term inhalation (local)

	Value: 105,2 µg/m ³
	Value: 25 µg/kg bw/day
	Comment : long-term oral (local)
PNEC	Route of exposure: Saltwater
	Value: 2,36 µg Co/L
	Route of exposure: Freshwater
	Value: 0.51 µg/L
	Route of exposure: Freshwater sediments
	Value: 9,5 mg Co/kg dw
	Route of exposure: Saltwater sediments
	Value: 9,5 mg Co/kg dw
	Comment : PNEC Soil = 7.9 mg/kg dw
	Water treatment plant micro organisms = 0.373 µg Co/l

8.2. Exposure controls

Precautionary measures to prevent exposure

Product-related measures to prevent exposure	Avoid contact with skin and eyes. Do not breathe dust.
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Eye / face protection

Suitable Eye Protection	Wear tight-fitting goggles or face shield.
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Hand protection

Suitable gloves type	Wear protective gloves. Avoid prolonged skin contact.
Suitable materials	Butyl rubber. Polyvinyl chloride (PVC).

Skin protection

Suitable protective clothing	Wear appropriate clothing to prevent reasonably probable skin contact. Wear special protective clothing.
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Respiratory protection

Recommended type of equipment	Use respiratory equipment with particle filter, type P3.
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Hygiene / environmental

Specific hygiene measures	Wash contaminated clothing before reuse. Personal protection must be kept separate from other clothes. When using do not eat, drink or smoke.
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Appropriate environmental exposure control

Environmental exposure controls	The employer shall fulfill requirements of IPPC Directive.
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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Crystals or crystalline.
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Colour	Red.
Odour	Odourless.
Odour limit	Comments: Not relevant.
pH	Status: In delivery state Comments: 5.11 (100 g/l)
Melting point / melting range	Comments: 96.8°C CoSO ₄ · 7H ₂ O
Boiling point / boiling range	Comments: Not relevant.
Flash point	Comments: Not relevant.
Evaporation rate	Comments: Not relevant.
Flammability (solid, gas)	does not ignite
Vapour pressure	Comments: No data available.
Vapour density	Comments: No data available.
Density	Value: 1.948 g/cm ³ Comments: (CoSO ₄ · 7H ₂ O)
Solubility	Medium: Water Value: 376,7 g/l Temperature: 20 °C
Partition coefficient: n-octanol/water	Comments: Not applicable.
Spontaneous combustability	Comments: Not applicable.
Decomposition temperature	Comments: No data available.
Viscosity	Comments: Not applicable. Solid
Explosive properties	Not explosive
Oxidising properties	no oxidizing

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No specific reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Conditions to avoid Heat.

10.5. Incompatible materials

Materials to avoid Strong oxidizing agents

10.6. Hazardous decomposition products

Hazardous decomposition products Sulphurous gases (SO_x). Cobalt oxides

Other information

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Other information regarding health hazards

Assessment of acute toxicity classification	LD50/oral/rat = 768 mg/kg
Assessment of skin corrosion / irritation, classification	Not classified as Corrosive. Causes serious eye irritation.
Sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	May cause cancer by inhalation. Animal experiments showed a statistically significant number of tumours. Concentration 0,3 mg/m ³
Reproductive toxicity	May damage fertility
Assessment of specific target organ toxicity RE, classification	No data available.
Aspiration hazard, comments	Not relevant.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	LC50/96t/mutu (Fathead minnows) = 3.61 mg/L (CoSO ₄) LC50/96h/Salmo gairdneri: 1.5 mg/l (CoCl ₂) NOEC: 351.4 mg/L (Fresh water , fish)(Chemical Safety Report) NOEC: 31802 mg/L (Sea water , fish) (Chemical Safety Report) EC/LC50: 0.61 mg/L (Fresh water , Invertebrates.) (Chemical Safety Report) EC/LC50: 2.23 mg/L(Sea water , Invertebrates.) (Chemical Safety Report)
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12.2. Persistence and degradability

Persistence and degradability No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential	Cobalt water plants BCF: > 100 – 5000 Invertebrates. , Water BCF < 300 fish Fresh water BCF/BAF : <10 fish Sea water BCF/BAF : <10
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12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

PBT assessment results The PBT and vPvB criteria of Annex XIII to the regulation does not apply to inorganic substances.

12.6. Other adverse effects

Other adverse effects /
Remarks no data available

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Specify the appropriate methods of disposal Contaminated packaging should be emptied as far as possible. Packaging that cannot be cleaned should be disposed as special waste in compliance with local and national regulations.

Other Information Contact manufacturer. Dispose of as special waste in compliance with local and national regulations.

SECTION 14: Transport information**14.1. UN number**

Comments UN3077

14.2. UN proper shipping name

Comments ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt sulphate)

14.3. Transport hazard class(es)

Class Code IMDG 9

14.4. Packing group

Comments III

14.5. Environmental hazards

Comments Environmentally hazardous substance – marine pollutant

14.6. Special precautions for user

Special safety precautions for user None. Tunnel restriction code (-)

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport In Bulk Value (Yes/No) No


SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Legislation and regulations Candidate list : Cobalt sulphate EC no 233-334-2 <http://echa.europa.eu/web/guest/candidate-list-table>

15.2. Chemical safety assessment

Chemical safety assessment performed Yes

SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3).	<p>H302 Harmful if swallowed. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H341 Suspected of causing genetic defects H350i May cause cancer by inhalation. H360F May damage fertility. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.</p>
Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	<p>Acute tox. 4; H302,H302 Eye Irrit. 2; H319,H319 Resp. Sens. 1A; H334,H334 Skin Sens. 1; H317,H317 Repr. 1B; H360F,H360F Muta. 2; H341,H341 Carc. 1B; H350i,H350i Aquatic Acute 1; H400,H400 Aquatic Chronic 1; H410,H410</p>
Additional information	<p>Disclaimer The information in this document is believed to be correct as of the date issued. However, no warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be implied regarding the accuracy or completeness of this information, the results to be obtained from the use of this information or the product, the safety of this product, or the hazards related to its use. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.</p>
Key literature references and sources for data	Chemical Safety Report
Exposure scenario	 ES_0_COBALT SULPHATE [FI-FIN].pdf