



Distributed by:
Laguna Clay Company
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PRODUCT NAME: COBALT SULPHATE

REVISION DATE: 08/01/2013

FORMER DATE: 05/21/2013

VERSION: 13.0 EN US

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 PRODUCT IDENTIFIER:

PRODUCT NAME: COBALT SULPHATE
PRODUCT CODE: 100085

Chemical Name: Cobalt sulphate heptahydrate
CAS-No: 10026-24-1
EINECS-No: 233-334-2
Registration Number: 01-2119517426-41-0000

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

Identified uses See Section 7.3.
Uses advised against None

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

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1.4 EMERGENCY TELEPHONE NUMBER:

Carechem 24: +44 (0) 1235 239 670
Finnish Poison Center +358 (0)9 4711

2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

CLASSIFICATION ACCORDING TO DIRECTIVE 1999/45/EC OR 67/548/EEC

T; Carc. Cat 2; R49
Muta. Cat 3; R68
Repr. Cat 2; R60
Xn; R22
Xi; R36
Xn; R42/43
N; R50/53

CLASSIFICATION ACCORDING TO REGULATION (EC) NO 1272/2008

Acute oral toxicity Category 4 ; H302

PRODUCT NAME: COBALT SULPHATE

REVISION DATE: 08/01/2013

FORMER DATE: 05/21/2013

VERSION: 13.0 EN US

Serious eye damage/eye irritation	Category 2 ; H319
Respiratory sensitization	Category 1B ; H334
Skin sensitization	Category 1 ; H317
Carcinogenicity	Category 1B ; H350i
Reproductive toxicity	Category 1B ; H360F
Germ cell mutagenicity	Category 2 ; H341
Acute aquatic toxicity	Category 1 ; H400
Chronic aquatic toxicity	Category 1 ; H410
	M-Factor: 10

2.2 LABEL ELEMENTS:



SIGNAL WORD:

DANGER

HAZARD STATEMENTS:

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. H410 - Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

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. P308 + P313 - IF exposed or concerned: Get medical attention/advice. P405 - Store locked up. P501 - Dispose of contents/container to an approved waste disposal plant.

2.3 OTHER HAZARDS:

Not classified as PBT or vPvB.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME:	PERCENT:	EINECS NO:	REGISTRATION NUMBER:	WARNING SYMBOL, R PHRASES AND OTHER INFORMATION:	GHS CLASSIFICATION:
Cobalt sulphate heptahydrate 10026-24-1	95-100	233-334-2	01-2119517426-41-0000	Carc. Cat. 2; R49, Muta. Cat. 3; R68, Repr. Cat. 2; R60, Xn; R22, Xi; R36, R42/43, N; R50/53	Carc. 1B; H350i, Muta. 2; H341, Repr. 1B; H360F, Acute Tox. 4; H302, Resp. Sens. 1B; H334, Eye Irr.2; H319, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410 M-Factor: 10

FURTHER INFORMATION:

Substance, inorganic salt

Cobalt Sulphate contains cobalt sulphate which has been included to the Candidate list for Substances of Very High Concern (SVHC).

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

EYE CONTACT:

Separate eyelids, wash the eyes thoroughly with water (15 min). If eye irritation persists, consult a specialist.

SKIN CONTACT:

Wash off with soap and plenty of water. Remove soiled or soaked clothing immediately. Wash contaminated clothing before re-use.

INHALATION:

Remove affected person from the immediate area. Ensure supply of fresh air. Irregular breathing/no breathing: artificial respiration. Consult a physician.

INGESTION:

Rinse mouth. Consult a physician.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Inhalation: Cough, Breathing difficulties, Shortness of breath.

Ingestion: Abdominal pain, Vomiting, Skin/Eye contact: Redness.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

No special requirements.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment e.g.: Carbon dioxide (CO₂), dry powder, foam, water spray.

UNSUITABLE EXTINGUISHING MEDIA:

None.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

In the event of fire the following can be released: Cobalt oxide dust, Cobalt sulphate dust, Sulphur oxides (SO_x).

5.3 ADVICE FOR FIREFIGHTERS:

Wear self-contained breathing apparatus and protective suit. Collect contaminated fire extinguishing water separately. Neutralise with e.g. sodium hydroxide. Do not discharge into the drains/surface waters/groundwater.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE:

Ensure adequate ventilation. Avoid breathing dust. Wear personal protective equipment. Avoid contact with skin, eyes and clothing.

6.2 ENVIRONMENTAL PRECAUTIONS:

Avoid dust formation. Do not discharge into the drains/surface waters/groundwater.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Use mechanical handling equipment. Send in suitable containers for recovery or disposal.

6.4 REFERENCE TO OTHER SECTIONS:

For handling advice see section 7. For personal protection see section 8. For waste disposal see section 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Avoid exposure - obtain special instructions before use. Provide good ventilation of working area (local exhaust ventilation if necessary). If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn. Avoid contact with skin and eyes. Avoid dust formation. Contaminated work clothing should not be allowed out of the workplace. Wash hands and face before breaks and immediately after handling the product.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Always keep in containers of same material as the original one. Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3 SPECIFIC END USE(S):

- Manufacture of cobalt sulfate and use of cobalt sulfate in the production of cobalt carbonate
- Industrial use of cobalt sulfate in surface treatment processes
- Formulation and industrial use of cobalt sulfate as water treatment chemical, oxygen scavenger, corrosion inhibitor
- Manufacture and industrial use of batteries using cobalt sulfate
- Industrial use of cobalt sulfate in the manufacture of inorganic pigments and frits, glass, ceramic ware, varistors and magnets (calcination/sintering processes)
- Manufacture and industrial use of coatings and inks using cobalt sulfate as drier and/or pigment
- Industrial use of cobalt sulfate in the manufacture of textile dyes
- Industrial use of cobalt sulfate in the manufacture of chemicals and in other wet-chemical processes intermediate

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

CHEMICAL NAME:	EXPOSURE LIMIT(S):	SOURCE:
Cobalt sulphate heptahydrate	For metal dust and fume, as Co : 0,1 mg/m ³ 0.02 mg/m ³	OSHA PEL ACGIH TLV

Derived No Effect Level (DNEL)	Oral	Inhalation	Dermal
Industry- Long Term- Local Effects	-	105.2 µg/m ³	-
Industry- Long Term- Systemic Effects	-	-	-
Industry- Short Term- Local Effects	-	-	-
Industry- Short Term- Systemic Effects	-	-	-
Consumer- Long Term- Local Effects	-	16.6 µg/m ³	-

PRODUCT NAME: COBALT SULPHATE

REVISION DATE: 08/01/2013

FORMER DATE: 05/21/2013

VERSION: 13.0 EN US

Consumer- Long Term- Systemic Effects	25 µg/kg bw/day	-	-
Consumer- Short Term- Local Effects	-	-	-
Consumer- Short Term- Systemic Effects	-	-	-

	Predicted No Effect Concentration (PNEC)
Aquatic Compartment	0.51 µg Co/l (fresh water)
Marine Compartment	2.36 µg Co/L (marine water)
Aquatic Compartment- Sediment	11.2 mg Co/kg sediment dry wt
Aquatic Compartment- Sediment, Added Risk Approach	9.5 mg Co/Kg sediment dry wt
Marine Compartment- Sediment	9.5 mg Co/Kg sediment dry wt
Terrestrial Compartment	7.9 mg Co/kg Soil dw
Sewage Treatment Plant- Microorganisms	0.373 µg Co/L
Atmosphere Compartment	-

8.2 EXPOSURE CONTROLS

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

APPROPRIATE ENGINEERING CONTROLS:

Provide adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Face-shield. Safety glasses.

SKIN PROTECTION: Protective gloves: Rubber. Butyl. Neoprene. PVC.

RESPIRATORY PROTECTION: Use a respirator with filter model P3 (DIN 3181).

ENVIRONMENTAL EXPOSURE CONTROLS:

The employer shall fulfill requirements of IPPC Directive.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	Crystalline
Colour	Red Brown
Odour	Odorless
Odour Threshold	Not established.
pH	Not applicable.
Melting point/range	735° C @ 1013 hPa
Boiling point/range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	No data available.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	3.71
Solubility	
-Water solubility	376.7g/l @ 20°C. Soluble.

PRODUCT NAME: COBALT SULPHATE

REVISION DATE: 08/01/2013

FORMER DATE: 05/21/2013

VERSION: 13.0 EN US

-Fat solubility	No data available.
-Solubility in other solvents	No data available.
Partition coefficient (n-octanol/water)	No data available.
Autoignition temperature	Not applicable.
Decomposition temperature	No data available.
Viscosity	Not applicable.
Explosive properties	No data available.
Oxidizing properties	Non oxidizing material according to EEC criteria.

9.2 OTHER INFORMATION:

Bulk density	No data available.
Moisture content	5 %

10. STABILITY AND REACTIVITY

10.1 REACTIVITY:

Stable under recommended storage conditions.

10.2 CHEMICAL STABILITY:

Stable under recommended storage conditions.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:

Stable under recommended storage conditions.

10.4 CONDITIONS TO AVOID:

Avoid dust formation. Keep away from heat.

10.5 INCOMPATIBLE MATERIALS:

Strong oxidizing agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

Sulphur oxides (SO_x). Cobalt oxides.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE:

Inhalation exposure. Dermal exposure. Oral exposure. Eye contact.

ACUTE TOXICITY:

Ingestion:	LD50/oral/rat: 768 mg/kg Main symptoms: Abdominal pain. Vomiting.
Inhalation:	No data available. Adverse effects similar to ingestion will occur. Main symptoms: Cough. Shortness of breath. Sore throat.
Skin contact:	LD50/dermal: >2000 mg/kg Low acute toxicity. Main symptoms: Redness.
Eye contact:	Low acute toxicity. Main symptoms: Redness.

SKIN CORROSION/IRRITATION:

No data available.

PRODUCT NAME: COBALT SULPHATE

REVISION DATE: 08/01/2013

FORMER DATE: 05/21/2013

VERSION: 13.0 EN US

SERIOUS EYE DAMAGE/EYE IRRITATION:

Causes serious eye irritation.

RESPIRATORY OR SKIN SENSITIZATION:

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

GERM CELL MUTAGENICITY:

Suspected of causing genetic defects.

CARCINOGENICITY:

May cause cancer by inhalation. Tumours developed in rats and mice of both sexes at concentrations = 0.3 mg/m³ Cobalt sulfate hexahydrate.

REPRODUCTIVE TOXICITY:

May impair fertility.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE):

None known.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE):

None known.

ASPIRATION HAZARD:

Not applicable.

12. ECOLOGICAL INFORMATION

12.1 TOXICITY:

Very toxic to aquatic life. By analogy to similar materials:

Cobalt Chloride:

Fish: LC50= 1.5 µg/l (Fresh Water):

Aquatic invertebrates: LC50= 0.61 mg/l (Fresh Water); 2.32 mg/l (Sea Water)

Algae: LC50= 144 µg/l (Fresh Water); 24.1 µ/l (Sea Water)

EC10 (Fresh Water Fish) = 351.4 mg/l

NOEC Aquatic invertebrates= 5.47 µg/l (Fresh Water); 206 µg/l (Sea water)

NOEC Algae= 4.9 µg/l (Fresh water); 1.23 µg/l (Sea water)

12.2 PERSISTENCE AND DEGRADABILITY:

Not readily biodegradable. Persistent.

12.3 BIOACCUMULATIVE POTENTIAL:

Reference substance: Cobalt:

Aquatic plants: Bioconcentration factor (BCF): >100-5000

Aquatic invertebrates: BCF <300

Fresh water, Fish: BCF/BAF <10

Marine fish: BCF/BAF <10

The substance has a low potential for bioaccumulation.

12.4 MOBILITY IN SOIL:

Soluble in water.

12.5 RESULTS OF PBT AND vPvB ASSESSMENT:

Not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS:

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS:

EWC WASTE CODE: 06 03 14 - Solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13. The listed waste code numbers, according to the European Waste Catalogue (EWC), are to be understood as a recommendation (2000/532/EC).

WASTE FROM RESIDUES / UNUSED PRODUCTS:
Contact manufacturer. Dispose of as special waste in compliance with local and national regulations.

CONTAMINATED PACKAGING:
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.

14. TRANSPORT INFORMATION

	LAND TRANSPORT:	SEA TRANSPORT:	AIR TRANSPORT:
14.1 UN-Number	3077	3077	3077
14.2 UN proper shipping name	Environmentally hazardous substance, solid, n.o.s.	Environmentally hazardous substance, solid, n.o.s. (Cobalt Sulphate)	Environmentally hazardous substance, solid, n.o.s. (Cobalt Sulphate)
14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Environmentally Hazardous	Marine pollutant	Environmentally Hazardous
14.6 Special precautions for users	None.	EmS (Fire): F-A Ems (Spill): S-F	None.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.	Not applicable.	Not applicable.

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENT REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

EU REGULATIONS: None.

NATIONAL REGULATIONS:

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REVISION DATE: 08/01/2013

FORMER DATE: 05/21/2013

VERSION: 13.0 EN US

TSCA STATUS:

All components of this product are on the US TSCA Inventory.

TSCA 12(b) EXPORT NOTIFICATION:

No components of this product are subject to TSCA 12(b) export notification requirements.

SARA 302 EXTREMELY HAZARDOUS SUBSTANCE LIST:

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substance List.

CLEAN AIR ACT S112 HAZARDOUS AIR POLLUTANTS:

Cobalt Compounds.

SARA (311, 312) HAZARD CLASS:

Acute health hazard. Chronic health hazard.

SARA SECTION 313 TOXIC CHEMICALS:

Cobalt Compounds 55%

15.2 CHEMICAL SAFETY ASSESSMENT:

A Chemical Safety Assessment has been carried out for this substance.

16. OTHER INFORMATION

LIST OF RELEVANT R-PHRASES:

R22 - Harmful if swallowed.

R36 - Irritating to eyes.

R42/43 - May cause sensitization by inhalation and skin contact.

R49 - May cause cancer by inhalation.

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R60 - May impair fertility.

R68 - Possible risk of irreversible effects.

HAZARD STATEMENTS:

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

H350 - May cause cancer by inhalation

H360 - May damage fertility or the unborn child

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects.

METHOD USED FOR CLASSIFYING MIXTURE:

Not applicable.

SOURCES OF KEY DATA USED TO COMPILE THE DATASHEET:

Chemical safety report.

PREPARED BY:

Freeport Cobalt Oy

PRODUCT NAME: COBALT SULPHATE

REVISION DATE: 08/01/2013

FORMER DATE: 05/21/2013

VERSION: 13.0 EN US

LIST OF ABBREVIATIONS USED IN THE SAFETY DATA SHEET:

Muta. Cat 3 = Mutagenicity Category 3
Repr. Cat. 2 = Reproductive Toxicity Category 2
Carc. Cat 2 = Carcinogenicity Category 2
Carc. 1B = Carcinogenicity Category 1B
Muta. 2 = Germ Cell Mutagenicity Category 2
Repr. 1B = Reproductive Toxicity Category 1B
Eye Irrit. 2 = Eye irritation Category 2
Acute Tox. 4 = Acute Toxicity Category 4
Resp. Sens. 1 = Respiratory Sensitization Category 1
Skin Sens. 1 = Skin Sensitization 1
Aquatic Acute 1 = Aquatic Acute Toxicity Category 1
Aquatic Chronic 1 = Aquatic Chronic Toxicity Category 1
PBT = Persistent, Bioaccumulative and Toxic
vPvB = very Persistent, very Bioaccumulative

REVISED INFORMATION:

This data sheet contains changes from the previous version in section(s): 1; 2; (Finnish version) 16;

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