



Safety Data Sheet

Section 01 Identification

Product Identifier	Cobalt Sulphate Solution
Other Means of Identification	None
Product Use and Restrictions on Use	Prepping magnetic oxides for recording tapes, electrowinning of copper, metal finishing, animal feed industry.
Initial Supplier Identifier	ClearTech Industries Inc 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7 Phone: 800.387.7503 Fax: 888.281.8109 www.cleartech.ca
Prepared By	ClearTech Industries Inc. technical writer
24-Hour Emergency Phone	306.664.2522

Section 02 Hazard Identification

Physical Hazards

This product does not qualify for any physical hazard class under WHMIS 2015

Health Hazards

Acute toxicity - oral	Category 4
Serious eye damage / eye irritation	Category 2
Sensitization - respiratory	Category 1B
Sensitization - skin	Category 1A
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Hazardous to the aquatic environment - acute hazard	Category 1
Hazardous to the aquatic environment - chronic hazard	Category 1

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.
- 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.

Pictograms



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 vapours, fumes, or mists.
- P264 Wash affected body parts 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.
- P284 In case of inadequate ventilation wear respiratory protection.

Response

- P301 P312 P330 IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.
- P303 P352 P333 IF ON SKIN (or hair): Wash with plenty of water. If skin irritation or rash occurs: Get medical advice / attention. Take off contaminated clothing and wash it before reuse.
- P313 P362 P364
- P304 P340 P342 IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
- P311
- P308 P313 IF exposed or concerned: Get medical advice or attention.
- P391 Collect spillage.

Storage

- P405 Store locked up.

Disposal

- P501 Dispose of contents / container in accordance with all federal, provincial and / or local regulations including the Canadian Environmental Protection Act.

Hazards Not Otherwise Classified

Not available

Supplemental Information

Not available

Section 03 Composition / Information on Ingredients

Hazardous Ingredients:

Chemical name	Common name(s)	CAS number	Concentration (w/w%)
Cobalt sulphate	Not available	10124-43-3	15-40%

Section 04 First-Aid Measures

Description of necessary first-aid measures

- Inhalation** Remove source of exposure or move person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER. If exposed or concerned: Get medical advice / attention.
- Ingestion** Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. If exposed or concerned: Get medical advice / attention.
- Skin contact** Take off immediately contaminated clothing, shoes and leather goods. Rinse skin with lukewarm, gently flowing water / shower for 15 to 20 minutes. If skin irritation or rash occurs: Get medical advice / attention. Wash contaminated clothing before re-use, or discard. If exposed or concerned: Get medical advice / attention.
- Eye contact** Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 15 to 20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice / attention.

Most important symptoms and effects, both acute and delayed

- Inhalation** May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer by inhalation.
- Ingestion** Harmful if swallowed.
- Skin contact** May cause an allergic skin reaction.
- Eye contact** Causes serious eye irritation.
- Further information** For further information see Section 11 Toxicological Information.

Section 05 Fire Fighting Measures

- Suitable extinguishing media** Extinguish fire using extinguishing agents suitable for the surrounding fire.
- Unsuitable extinguishing media** Not available
- Specific hazards arising from the chemical** In the event of a fire oxides of sulphur may be released.
- Special protective equipment for fire-fighters** Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

Section 06 Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Stay upwind, ventilate area. Only enter area with PPE.
Environmental Precautions	Do NOT let this chemical enter the environment. Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Approach from upwind, ventilate area. Stop or reduce leak if safe to do so. Clean up spill with non-reactive absorbent and place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

Section 07 Handling and Storage

Precautions for Safe Handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Avoid generating vapours, fumes, or mists. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Never return contaminated material to its original container. Have suitable emergency equipment for fires, spills and leaks readily available.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible.
Incompatibilities	Oxidizing agents, such as oxygen, hydrogen peroxide, sulphuric and nitric acids, hypochlorites and permanganates. Ammonium nitrate. T-butyl hydroperoxide.

Section 08 Exposure Controls and Personal Protection

Exposure limits

Component	Regulation	Type of listing	Value
Cobalt compounds	ACGIH	TWA	0.02 mg/m ³
	NIOSH	REL-TWA	0.05 mg/m ³
	OSHA	PEL-TWA	0.1 mg/m ³
	NIOSH	IDHL	20 mg/m ³ (as Co)

Engineering controls

Ventilation Requirements	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.
Other	An emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations.

Protective equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

Eye and face protection

Where there is potential eye or face exposure, tightly fitting chemical goggles are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.

Hand and body protection

Where handling this product it is recommended that chemically resistant gloves are worn. Resistance of specific materials can vary from product to product. Breakthrough times are obtained under conditions of continuous contact, generally at room temperature. Evaluate resistance under conditions of use and maintain protective clothing.

Where there is potential for contact with clothing or skin, rubber boots and sufficient body protection, such as: a chemical body suit or an apron and coveralls of chemical resistant material, are recommended. Continued use of contaminated safety gear or clothing is not recommended; wash before reuse or discard. Contaminated work clothing should not be allowed out of the workplace.

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment.

NIOSH respirator recommendations for: Cobalt

Up to: 0.25 mg/m³

(APF = 5) Any quarter-mask respirator.

Up to: 0.5 mg/m³

(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.

(APF = 10) Any supplied-air respirator

Up to: 1.25 mg/m³

(APF = 25) Any supplied-air respirator operated in a continuous-flow mode

(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter

Up to: 2.5 mg/m³

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted N100, R100, or P100 filter.

(APF = 50) Any self-contained breathing apparatus with a full facepiece.

(APF = 50) Any supplied-air respirator with a full facepiece

Up to 20 mg/m³

(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape

(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.

Any appropriate escape-type, self-contained breathing apparatus

Thermal hazards

Not available

Section 09 Physical and Chemical Properties

Appearance

Physical state	LiquidLiquid
Colour	Reddish-purple
Odour	No odour
Odour threshold	Not applicable

Property

pH	2.5-3.5
Melting point / freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability	Not applicable
Upper flammable limit	Not available
Lower flammable limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	Not applicable
Solubility	Soluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Specific gravity	1.25 g/mL
Formula	CoSO ₄
Molecular weight	154.989 g/mol

Section 10 Stability and Reactivity

Reactivity	Not available
Stability	This product is stable if stored according to the recommendations in Section 07.

Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Avoid contact with incompatible materials.
Incompatible materials	Oxidizing agents, such as oxygen, hydrogen peroxide, sulphuric and nitric acids, hypochlorites and permanganates. Ammonium nitrate. T-butyl hydroperoxide.
Hazardous decomposition products	Thermal decomposition may produce oxides of sulphur.

Section 11 Toxicological Information

Acute Toxicity (LD50 values)

Component	Route	Species	Value	Exposure time
Acute toxicity estimate	Oral	Rat	2019 mg/kg	

Toxic Health Effect Summary

Chemical characteristics	Cobalt is predicted to be 1-15% bioavailable.
Skin	May cause an allergic skin reaction.
Ingestion	Harmful if swallowed.
Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Eye contact	Causes serious eye irritation.
Sensitization	Repeated or prolonged contact may cause skin sensitization, from human exposure studies. Repeated or prolonged inhalation exposure may cause asthma, from an occupational epidemiological study.
Mutagenicity	DNA damage has been observed in human leukocytes. Cobalt (in the form of cobalt acetate) induced oxidative DNA damage in rats.
Carcinogenicity	NTP has classified cobalt compounds as: Reasonably anticipated to be a human carcinogen. ACGIH has classified cobalt compounds as category A3 - Confirmed animal carcinogen with unknown relevance to humans. IARC has classified cobalt compounds as group 2B, possibly carcinogenic to humans.
Reproductive toxicity	Studies on rats exposed to this product are associated with testicular atrophy.
Specific organ toxicity	The substance may have effects on the heart, thyroid and bone marrow.
Aspiration hazard	Not available
Synergistic materials	Not available

Section 12 Ecological Information

Ecotoxicity

Component	Type	Species	Value	Exposure Time
Acute toxicity estimate	LC50	Water flea	32.7 mg/L	48 hours
	LD50	Fathead minnow	16.5 mg/L	96 hours
Biodegradability	The domestic substance list categorizes cobalt sulphate as persistent.			
Bioaccumulation	The domestic substance list categorizes cobalt sulphate as non-bioaccumulative.			
Mobility	This product is water soluble, and will not adsorb to soil and may contaminate ground water.			
Other adverse effects	The domestic substance list categorizes cobalt sulphate as inherently toxic to the environment.			

Section 13 Disposal Considerations

Waste From Residues / Unused Products	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

Section 14 Transport Information

UN number	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, COBALT SULPHATE
Transport hazard class(es)	9
Packing group	III
Excepted quantities	5 L
Environmental hazards	Listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special precautions	<p>16 (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks).</p> <p>99 (1) Mixtures of solids that are not dangerous goods and liquids or solids that are UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., may be handled, offered for transport or transported as UN3077 if there is no visible liquid when the dangerous goods are loaded into a means containment and during transport.</p>

99 (2)These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

Transport in bulk

ERAP index: not available

MARPOL 73/78 and IBC Code:

This product is not listed in Chapter 17 of the IBC Code.

Additional information

Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 16 of this SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and published test data regarding the classification of this product are listed in the references at section 16 of this SDS.

Section 15 Regulatory Information.

NOTE: THE PRODUCT LISTED ON THIS SAFETY DATA SHEET HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN HAZARDOUS PRODUCTS REGULATIONS. THIS SAFETY DATA SHEET CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

All components of this product appear on the domestic substance list.

Cobalt and its compounds are listed in the National Pollutant Release Inventory (NPRI). Reporting threshold: 50 kg manufactured, processed or otherwise used.

Cobalt and soluble cobalt compounds are in the List of Toxic Substances, Schedule 1, under the Canadian Environmental Protection Act.

Section 16 Other Information

Date of latest revision: June 26, 2019

Note: The responsibility to provide a safe workplace remains with the buyer / user. The buyer / user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the RDC Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

- 1) CHEMINFO
- 2) TOXNET
- 3) eChemPortal
- 4) ECHA
- 5) Transportation of Dangerous Goods Canada
- 6) HSDB
- 7) PAN