MATERIAL SAFETY DATA SHEET

8% Cobalt Solution (Cobalt Sulphate)

Section 01 - Product And Company Information

Product Identifier ....................................... 8% Cobalt Solution

Product Use ............................................. Preparing magnetic oxides for recording tapes, electrowinning of copper, metal finishing, animal feed industry

Supplier Name .......................................... ClearTech Industries Inc.
1500 Quebec Avenue
Saskatoon, SK, Canada
S7K 1V7

Prepared By ............................................ ClearTech Industries Inc. Technical Department
Phone: (306)664-2522

Preparation Date ...................................... November 30, 2012

24-Hour Emergency Phone ......................... 306-664-2522

Section 02 - Composition / Information on Ingredients

Hazardous Ingredients ................................. Cobalt Sulphate 21%
Water 79%

CAS Number ............................................. Cobalt Sulphate 10124-43-3
Water 7732-18-5

Synonym (s) ............................................. Cobaltous sulphate, cobalt(II) sulphate
Section 03 - Hazard Identification

Inhalation. Cobalt is a known allergen that produces characteristic symptoms of asthma, such as wheezing, dry cough and labored breathing. Usually the asthma symptoms appear 4-6 hours after exposure and often worsen again later in the same day. Other cobalt-containing compounds such as hard metal dust, but not cobalt powder itself, are associated with subacute fibrosis alveolitis and chronic diffuse interstitial pulmonary fibrosis.

Skin Contact / Absorption. May cause allergic contact dermatitis if there is prior sensitization. Most rashes associated with cobalt occur on the hands and appear within the first year of occupational exposure to cobalt.

Eye Contact. May cause eye irritation.

Ingestion. May be harmful if swallowed.

Exposure Limits. OSHA/PEL: 0.10mg/m³ (as cobalt)
ACGIH/TLV: 0.02mg/m³ (as cobalt)

Section 04 - First Aid Measures

Inhalation. Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.

Skin Contact / Absorption. Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.

Eye Contact. Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.

Ingestion. Give large amounts of water to drink if person is completely conscious. Seek medical attention as a precaution.

Additional Information. Toxic concentrations of cobalt in urine and blood are not well defined. In the general population, the 95th percentile for cobalt concentration was 8.3 ug/l in urine (National Health and Nutrition Examination Survey III). Chelation treatments for example, calcium disodium edetate or dimercaprol, are controversial. Contact a poison control center for current recommendations. Individuals with polymorphism in the HLA-DP gene (presence of glutamate 69 in the beta chain) may be more susceptible to cobalt toxicity.
Section 05 - Fire Fighting Measures

Conditions of Flammability.............. Non-flammable

Means of Extinction.................... Not applicable as product does not burn.

Flash Point............................ Not applicable

Auto-ignition Temperature .......... Not applicable

Upper Flammable Limit .............. Not applicable

Lower Flammable Limit ............... Not applicable

Hazardous Combustible Products.... Fumes of cobalt oxide and sulphur dioxide

Special Fire Fighting Procedures...... Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

Explosion Hazards..................... Unknown

Section 06 - Accidental Release Measures

Leak / Spill........................... Wear appropriate personal protective equipment if required. Ventilate area. Stop or reduce leak if safe to do so. Collect into appropriate containers for reuse or disposal. Prevent material from entering sewers. Flush with water to remove any residue.

Deactivating Materials............... Not available

Section 07 - Handling and Storage

Handling Procedures.................. 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.

Storage Requirements................ This material should be stored in sealed containers to avoid dampness and dust. Partly used containers should be sealed. Avoid excess heat and incompatible materials.
Section 08 - Personal Protection and Exposure Controls

Protective Equipment

Eyes. Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Respiratory. Use a NIOSH/MSHA approved respirator if exposure may, or does exceed occupational exposure limits.

Gloves. Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Clothing. Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Footwear. Impervious boots of chemically resistant material should be worn.

Engineering Controls

Ventilation Requirements. Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other. Keep an eye wash fountain and safety shower available and in close proximity to work area.

Section 09 - Physical and Chemical Properties

Physical State. Liquid

Odor and Appearance. Red-purple solution

Odor Threshold. Not available

Specific Gravity (Water=1). 1.25 at 25°C

Vapor Pressure (mm Hg, 20°C). Not available

Vapor Density (Air=1). Not available

Evaporation Rate. Slower than ether (ether=1)

Boiling Point. Not available
Freeze/Melting Point: Approximately 4.4°C
pH: Not available
Water/Oil Distribution Coefficient: Not available
Bulk Density: 10.4 lbs/US gal
% Volatiles by Volume: Not available
Solubility in Water: Not available
Molecular Formula: CoSO₄
Molecular Weight: 156

Section 10 - Stability and Reactivity

Stability: Stable in normal conditions.
Incompatibility: Strong oxidizers
Hazardous Products of Decomposition: Toxic fumes of cobalt oxide and sulphur dioxide.
Polymerization: Will not occur.

Section 11 - Toxicological Information

Irritancy: Irritating when inhaled and contact with skin.
Sensitization: Causes sensitization in some individuals.
Chronic/Acute Effects: Repeated oral administration may produce goiter and reduced thyroid activity. Prolonged or repeated skin exposure may cause dermatitis. Chronic exposure is associated with kidney, heart, and lung damage.
Synergistic Materials: Not available
Animal Toxicity Data: No data available
Carcinogenicity

IARC has stated that there is sufficient evidence for the carcinogenicity of cobalt metal powder in experimental animals. On the basis of animal evidence from experiments not regarded as relevant to human exposure, IARC has classified cobalt as 2B, possible carcinogen for humans. ACGIH has given cobalt a rating of A3, animal carcinogen. They state that available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.

The National Toxicology Program has classified cobalt sulfate as “reasonably anticipated to be a human carcinogen.” The listing is based on findings from long-term inhalation studies of this chemical in laboratory animals where it caused lung tumors in both mice and rats and adrenal-gland tumors in female rats.

Reproductive Toxicity

Not available

Teratogenicity

Not available

Mutagenicity

Not available

Section 12 - Ecological Information

Fish Toxicity

Not available

Biodegradability

Not available

Environmental Effects

Not available

Section 13 - Disposal Consideration

Waste Disposal

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

Section 14 - Transport Information

TDG Classification

Shipping Name
Cobalt Sulfate solution, Environmental hazardous substance

Class
9

Group
III

PIN Number
UN3082
Secure containers (full and/or empty) with suitable hold down devises during shipment and ensure all caps, valves, or closures are secured in the closed position.

Section 15 - Regulatory Information

WHMIS Classification.....................................D1, D2

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

Section 16 - Other Information

Note: The responsibility to provide a safe workplace remains with the user. The 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 user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / MSDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Material 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 or technical service department.

ClearTech Industries Inc. - Locations

Corporate Head Office: 1500 Quebec Avenue, Saskatoon, SK, S7K 1V7  
Phone: 306-664-2522  
Fax: 306-665-6216  
www.ClearTech.ca

<table>
<thead>
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<td>12431 Horseshoe Way</td>
<td>V7A 4X6</td>
<td>604-272-4000</td>
<td>604-272-4596</td>
</tr>
<tr>
<td>Calgary, AB.</td>
<td>5516E - 40th St. S.E.</td>
<td>T2C 2A1</td>
<td>403-279-1096</td>
<td>403-236-0989</td>
</tr>
<tr>
<td>Edmonton, AB.</td>
<td>11750 - 180th Street</td>
<td>T5S 1N7</td>
<td>780-452-6000</td>
<td>780-452-4600</td>
</tr>
<tr>
<td>Saskatoon, SK.</td>
<td>19 Peters Ave, North Corman Park</td>
<td>S7K 1V7</td>
<td>306-933-0177</td>
<td>306-933-3282</td>
</tr>
<tr>
<td>Regina, SK.</td>
<td>555 Henderson Drive</td>
<td>S42 5X2</td>
<td>306-721-7737</td>
<td>306-721-8611</td>
</tr>
<tr>
<td>Winnipeg, MB.</td>
<td>340 Saulteaux Crescent</td>
<td>R3J 3T2</td>
<td>204-987-9777</td>
<td>204-987-9770</td>
</tr>
<tr>
<td>Mississauga, ON.</td>
<td>7480 Bath Road</td>
<td>L4T 1L2</td>
<td>905-612-0566</td>
<td>905-612-0575</td>
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