Section 1: Chemical Product and Company Information

Product name: Cobalt Sulfate 33%
Reference Number: n/a
Supplier/ Further Information: Martrex, Inc.
1107 Hazeltine Blvd,
Suite 535 MD 27,
Chaska, Minnesota 55318
Phone: 952/933-5000
Toll Free: 800/328-3627
FAX: 952/933-1889
EPA Registration Number: n/a
CAS#: 10124-43-3
Chemical Name: Cobalt Sulfate Monohydrate
Synonyms: Cobalt Sulfate Monohydrate
Chemical Family: Inorganic metallic salt
SDS Number: n/a

Section 2: Hazards Identification

Emergency Overview

Danger! Harmful if Swallowed or Inhaled. Causes irritation to Skin, Eyes and Respiratory Tract. May cause Allergic Skin or Respiratory Reaction. Chronic Exposure may affect Thyroid, Lungs, Heart, and Kidneys.

GHS Classification (Global Harmonized Classification see Section 16):
- Acute toxicity, Oral Category 5 (H303)
- Sensitization, Skin Category 1 (H317)
- Carcinogenicity Category 1B (H350)
- Reproductive toxicity Category 1B (H360)
- Hazardous to the aquatic environment, acute hazard Category 1 (H400)
- Hazardous to the aquatic environment, long-term hazard Category 2 (H411)

GHS Label, Hazards and Precautionary Statements

GHS Pictogram:

Signal Word: Danger

Hazard Statements:
- May be harmful if swallowed. (H303)
- May cause an allergic skin reaction. (H317)
- May cause cancer. (H350)
- May damage fertility or the unborn child. (H360)
- Very toxic to aquatic life. (H400)
- Toxic to aquatic life with long lasting effects. (H411)

24 Hour Emergency Phone - Chemtrec Transport: 1-800-424-9300; Medical: 1-800-441-3637
Precautionary Statements:

**Prevention:**
- Obtain special instructions before use. (P201)
- Do not handle until all safety precautions have been read and understood. (P202)
- Avoid breathing dust/fume/gas/mist/vapor/spray. (P261)
- Wear protective gloves/protective clothing/eye protection/face protection. (P280)
- Contaminated work clothing should not be allowed out of the workplace. (P272)
- Avoid release to the environment. (P373)

**Response:**
- **IF SWALLOWED:** Call a POISON CENTER/doctor, if you feel unwell. (P301+P312)
- **IF ON SKIN:** Wash with plenty of water. (P302+P352)
  - Specific treatment: see Section 4 First Aid Measures, Skin Exposure on this label. (P321)
  - If Skin Irritation or rash occurs: Get Medical Advice/Attention. (P333+P313)
  - Take off contaminated clothing and wash it before reuse. (P362+P364)
- **If Exposed or Concerned:** Get medical advice/attention. (P308+P313)
- Collect Spillage. (P391)

**Storage:**
- Store locked up. (P405)

**Disposal Considerations:**
- Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

**NFPA:** Health: 2  Flammability: 0  Reactivity: 0

**Potential Health Effects:**
- **Primary Routes of Exposure / Entry:** Eye & Skin contact, Ingestion, Inhalation.
- **Target Organs:** no data

**Acute and Chronic Exposure Symptoms**
- **Inhalation (breathing):** Causes irritation to the respiratory tract, symptoms may include coughing, shortness of breath, and nausea. Respiratory hypersensitivity, asthma may appear. Inhalation of cobalt dust and fumes is associated with an increased incidence of lung disease.
- **Eye Contact:** Causes irritation, redness, and pain.
- **Skin Contact:** Causes irritation to skin. Symptoms include redness, itching, and pain. May cause dermatitis.
- **Ingestion (swallowing):** Toxic. Causes abdominal pain, nausea, vomiting, flushing of the face and ears, mild hypotension, rash, and ringing in the ears. May have cumulative toxic action where elimination cannot keep pace with absorption. Large amounts depress erythrocyte production.

**Chronic Exposure Symptoms:** Repeated oral administration may produce goiter and reduced thyroid activity. Prolonged or repeated skin exposure may cause dermatitis. Chronic exposure associated with kidney, heart and lung damage.

**Medical Conditions Aggravated By Long-Term Exposure:** Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance. Persons with allergies or sensitivity to cobalt may also be more susceptible to the effects of the substance.

**Carcinogenicity Data:**
- See Section 11 for more Toxicological information

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### Section 3: Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Component</th>
<th>CAS#</th>
<th>%</th>
<th>OSHA Limits</th>
<th>ACGIH Limits</th>
<th>OTHER Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt Sulfate Monohydrate</td>
<td>10124-43-3</td>
<td>33%</td>
<td>PEL: 0.1mg/m³(TWA) Cobalt Metal Dust and fumes as Co</td>
<td>TLV: inorganic cobalt compounds 0.2mg/m³(TWA) as Co, A3: Animal Carginogen</td>
<td>See Section 11,12,15</td>
</tr>
</tbody>
</table>

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24 Hour Emergency Phone - Chemtrec: 1-800-424-9300 Transportation 1-800-441-3637 Medical
### Section 4: First Aid Measures

**Eye Exposure:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. **Get Medical Attention Immediately.**

**Skin Exposure:** Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. **Get medical attention.** Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Ingestion:** Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. **Call a physician or Poison Control center immediately.**

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **Get medical attention.**

**NOTE TO THE PHYSICIAN:** Treat symptomatically and supportively.

### Section 5: Fire Fighting Measures

**Flammability Classification:** no data

**Fire:** Contact with strong oxidizers may cause fire.

**Explosion:** Not considered to be an explosion hazard.

**Fire Extinguishing Media:** Use any means suitable for extinguishing surrounding fire.

**Special Information:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

### Section 6: Accidental Release Measures

**Procedure to be Followed in Case of Leak or Spill:** Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

**Spill and Leak Personal Procedures:** See Section 8.

**Containment of Spill:** Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

**Cleanup and Disposal of Spill:** Consult local waste regulators for proper disposal. Do not discharge.

**Environmental and Regulatory Reporting:** Toxic to Fish. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

### Section 7: Handling and Storage

**Minimum/maximum Storage Temperature:** no data.

**Handling:** Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

**Storage:** Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances.

**REGULATORY REQUIREMENTS:** See Section 3, 8 and 11 for employee exposure controls and Section 15 for other regulatory requirements.

### Section 8: Exposure Controls / Personal Protection

**Ventilation/Engineering Protection:** A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Respiratory Protection (NIOSH Approved):** If the exposure limit is exceeded, a half-face high efficiency dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration-
Section 9: Physical and Chemical Properties

Chemical Name: Cobalt Sulfate monohydrate  
Percent Equivalent: 33%  
Physical State: Solid crystals  
Color and Appearance: Pink to red transparent crystals.  
Odor: odorless  
Odor Threshold: no data  
pH: no data  
Specific Gravity (water=1): no data  
Vapor Pressure: no data  
Vapor Density (Air = 1): no data  
Density: 2.03 @ 25C/4C  
Bulk Density: no data  
Volatile Percent: 0  
Boiling Point: 735C (1355F)  
Melting Point: 96.8C (207F) Loses water @ 420C (788F)  
Evaporation Rate (Butyl Acetate=1): no data  
Solubility in water@ 3C (37F): 60.4 g/100 ml.  
Viscosity: no data  
Other Solubilities: no data  
Chemical Formula: CoSO₄•H₂O  
Formula Wt: 173.01

Section 10: Stability and Reactivity

Chemical Stability (under normal conditions of storage, handling, use): Stable X Unstable  
Hazardous Polymerization: MayOccur  
Will Not Occur X  
Conditions to Avoid: Incompatible materials.  
Chemical Incompatibility and Materials to Avoid: Strong oxidizers, tert-butyl hydroperoxide.  
Hazardous Decomposition Products: Oxides of sulfur and the contained metal.

Section 11: Toxicological Information

Toxicological Data: Oral rat LD₅₀: 424 mg/kg. Investigated as a tumorigen and mutagen.  
Carcinogenicity: Cobalt and its compounds have been shown to cause cancer in laboratory animals.  
Carcinogenicity Data:  
<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS#</th>
<th><em>NTP Carcinogen</em></th>
<th>IARC Category</th>
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</thead>
<tbody>
<tr>
<td>Cobalt Sulfate</td>
<td>10124-43-3</td>
<td>No</td>
<td>2B: Possibly carcinogenic to humans</td>
</tr>
</tbody>
</table>
| Other Effects on Humans: no data

Eye Protection: Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.  
Skin Protection: Wear protective gloves and clean body-covering clothing.  
Other Protective Clothing and Equipment: no data  
Hygienic Work Practices: no data  

24 Hour Emergency Phone - Chemtrec: 1-800-424-9300  
Transportation: 1-800-441-3637  
Medical
Section 12: Ecological Information

Environmental Fate:
72 Hr EC₅₀ Selenastrum capricornutum: 0.4-72 mg/L

Environmental Toxicity:
No information found.

Section 13: Disposal Considerations

Disposal Procedures: Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14: Transport Information

Not regulated.

Section 15: Regulatory Information

Chemical Inventory Status - Part 1

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
<th>Japan</th>
<th>Australia</th>
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</thead>
<tbody>
<tr>
<td>Cobaltous Sulfate (10124-43-3)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Chemical Inventory Status - Part 2

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobaltous Sulfate (10124-43-3)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Federal, State & International Regulations - Part 1

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>SARA 302</th>
<th>SARA 313</th>
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</thead>
<tbody>
<tr>
<td>Cobaltous Sulfate (10124-43-3)</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>SARA 311/312</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobaltous Sulfate (10124-43-3)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

WARNING: THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

Australian Hazchem Code: None allocated.
Poison Schedule: None allocated.
WHMIS: This SDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR.

Section 16: Other Information

Label Hazard Warning:
WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. CHRONIC EXPOSURE MAY AFFECT THYROID, LUNGS, HEART, AND KIDNEYS.
**Label Precautions:**
- Avoid breathing dust.
- Keep container closed.
- Use with adequate ventilation.
- Wash thoroughly after handling.
- Avoid contact with eyes, skin and clothing.

**Label First Aid:**
- If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

**Acronyms**

ACGIH - American Conference of Governmental Industrial Hygienists  
ANSI - American National Standards Institute  
CAS - Chemical Abstracts Service  
CERCLA - Comprehensive Environmental Response, Compensation & Liability Act of 1980  
CFR - Code of Federal Regulations  
CHEMTREC - Chemical Transportation Emergency Center  
CPR - Controlled Products Regulations  
CWC - Chemical Weapons Convention  
DOT - U.S. Department of Transportation  
DSL - Canadian Domestic Substance List  
EHS - Extremely Hazardous Substance  
EPA - U.S. Environmental Protection Agency  
HMIS - Hazardous Material Identification System  
IARC - International Agency for Research on Cancer

**GHS Pictograms and Hazards**

**Health Hazard**
- Carcinogen  
- Mutagenicity  
- Reproductive Toxicity  
- Respiratory Sensitizer  
- Target Organ Toxicity  
- Aspiration Toxicity

**Flame**
- Flammables  
- Pyrophorics  
- Self-Heating  
- Emits Flammable Gas  
- Self-ReACTives  
- Organic Peroxides

**Exclamation Mark**
- Irritant (skin and eye)  
- Skin Sensitizer  
- Acute Toxicity (harmful)  
- Narcotic Effects  
- Respiratory Tract Irritant  
- Hazardous to Ozone Layer (Non-Mandatory)

**Gas Cylinder**
- Gases Under Pressure

**Corrosion**
- Skin Corrosion/Burns  
- Eye Damage  
- Corrosive to Metals

**Exploding Bomb**
- Explosives  
- Self-ReACTives  
- Organic Peroxides

**Flame Over Circle**
- Oxidizers

**Environment (Non-Mandatory)**
- Aquatic Toxicity

**Skull and Crossbones**
- Acute Toxicity (fatal or toxic)

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**NFPA Rating Explanation Guide**

<table>
<thead>
<tr>
<th>Rating Number</th>
<th>Health Hazard</th>
<th>Flammability Hazard</th>
<th>Instability Hazard</th>
<th>Rating Symbol</th>
<th>Special Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Hazard</td>
<td>Will not burn</td>
<td>Normal temperature</td>
<td>Stable</td>
<td>Radioactive</td>
</tr>
<tr>
<td>2</td>
<td>Can cause significant irritation</td>
<td>Must be heated before ignition can occur</td>
<td>Violent chemical change at high temperature or pressure</td>
<td>Radioactive</td>
<td>Radioactive</td>
</tr>
<tr>
<td>3</td>
<td>Can cause temporary incapacitation or residual injury</td>
<td>Must be heated or high ambient temperature to burn</td>
<td>Violent chemical change at high temperature or pressure</td>
<td>Radioactive</td>
<td>Radioactive</td>
</tr>
<tr>
<td>4</td>
<td>Can cause serious or permanent injury</td>
<td>Can be ignited under almost all ambient temperatures</td>
<td>May explode at high temperature or check</td>
<td>Radioactive</td>
<td>Radioactive</td>
</tr>
<tr>
<td></td>
<td>Can be lethal</td>
<td>Will vaporize and readily burn at normal temperatures</td>
<td>May explode at normal temperatures and pressures</td>
<td>ALK Alkaline</td>
<td>Acidic</td>
</tr>
</tbody>
</table>

This chart for reference only - For complete specifications consult the NFPA Standard

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24 Hour Emergency Phone - Chemtrec: 1-800-424-9300  
Transportation 1-800-441-3637  Medical
LEL/UEL - Lower and Upper Explosive Limit
mg/m³ - Milligrams per cubic meter
NAERG - North American Emergency Response Guidebook
NIOSH - National Institute of Occupational Safety and Health
NFPA - National Fire Protection Association
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limit (set by OSHA)
PPE - Personal Protective Equipment
RCRA - Resource Conservation and Recovery Act of 1976
SARA - Superfund Amendments and Reauthorization Act
SDS - Safety Data Sheet
STEL - Concentration to which workers can be exposed continuously for a short period of time without suffering from irritation, irreversible tissue damage or narcosis of sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency.
TDG (Canadian): Transport of Dangerous Goods Regulations
TLV - Threshold Limit Value (set by ACGIH)
TWA - 8-hour Time Weighted Average
TSCA - US Toxic Substance Control Act
WHMIS - Workplace Hazardous Material Information System

SDS Issue Date: 12-17-2014
Revised Date: 12-17-2014
Supersedes: 10-09-2013

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