SAFETY DATA SHEET: COBALT SULFATE

1. IDENTIFICATION

Product Name: COBALT SULFATE
Synonyms: Cobalt monosulfate; Sulfuric acid cobalt salt
Formula and Formula Weight: CoSO₄ 7H₂O  281.10
Integra numbers beginning with: C688.10
Recommended Use: Commercial/industrial use
Restrictions on Use: No information available

INTEGRA Chemical Company
24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000

2. HAZARDS IDENTIFICATION

DANGERSignal Word:

OSHA Classification:
Acute Toxicity - Oral: 4 Harmful if swallowed.
Sensitization - Respiratory: 1 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carcinogenicity: 1B May cause cancer.
Toxic to Reproduction: 1B May damage fertility or the unborn child.

Hazard Category:
Hazard Statement:

Precautionary Statements
Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust, fume, gas, mist, vapors, spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing, eye protection, face protection, respiratory protection.

Response
Rinse mouth. If swallowed: Call a poison center, doctor if you feel unwell.
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
If exposed or concerned: Get medical advice, attention.

Storage
Store locked up.

Disposal
Dispose of contents, container in accordance with all governmental regulations.

Hazards Not Otherwise Classified: No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Synonyms</th>
<th>CAS #</th>
<th>% Weight</th>
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</thead>
<tbody>
<tr>
<td>Cobalt sulfate, heptahydrate</td>
<td>Cobalt monosulfate; Sulfuric acid cobalt salt</td>
<td>10026-24-1</td>
<td>100</td>
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</tbody>
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4. FIRST AID MEASURES

Inhalation:
Remove person to fresh air and keep comfortable for breathing.

Eye Contact:
Flush eyes with water for at least 15 minutes. If irritation persists, seek medical attention.

Skin Contact:
Wash with soap and water. Seek medical attention if irritation develops.

Ingestion:
Rinse mouth and give victim large quantities of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Additional notes:
Symptoms and effects include skin, eye, respiratory irritation; gastrointestinal upset, abdominal pain, vomiting, diarrhea; allergy or asthma symptoms, breathing difficulties, respiratory sensitization. May damage fertility or the unborn child. May cause cancer.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Water spray, carbon dioxide, dry chemical or foam.

Special Equipment and Precautions:
Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.

Specific Hazards:
Fire conditions may liberate toxic and noxious fumes.

Hazardous combustion products:
Oxides of sulfur. Oxides of cobalt.
6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Prevent spread of spill. Wear suitable protective equipment. Sweep or scoop into clean, dry disposal container. Flush spill area with water. Do not release to environment.

7. HANDLING AND STORAGE

Incompatible Materials: Incompatible with strong oxidizers.
Storage and Handling: Store locked up in a cool, dry, well-ventilated area away from incompatible materials. Keep containers tightly closed and protect them from physical damage. Hygroscopic material. Keep containers well closed.

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust, fume, gas, mist, vapors, spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing, eye protection, face protection, respiratory protection.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

OSHA & ACGIH Exposure Limits:
Cobalt sulfate, heptahydrate
OSHA TWA: 0.1 mg/m3 (as Co) ACGIH TWA: 0.02 mg/m3 (as Co)

Engineering Controls: Use general or local exhaust ventilation to meet TLV and PEL requirements.
Respiratory Protection: Respiratory protection required if airborne concentrations exceed PEL or TLV. Use a NIOSH approved respirator with a particulate filter.
Skin/Eye Protective Equipment: Safety goggles, protective clothing and gloves appropriate for the risk of exposure.

Facilities storing or utilizing this material should have readily accessible eyewash stations and safety showers. Select respirators and other safety equipment in accordance with regulations and based upon the particular conditions of use and risk of exposure. Always use safe chemical-handling and good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Pink to red crystals
Odor: Not available
Odor Threshold: Not available
pH: Not available
Melting/Freezing Point: 97 °C
Initial Boiling Point and Boiling Range: Not available
Flash Point: Not available
Evaporation Rate: Not available
Flammability: Not available
Flammable or Explosive Limits (% by volume in air) Upper: Not available Lower: Not available
Vapor Pressure: Not available
Vapor Density: Not available
Relative Density: 1.95 Water=1
Solubility: Appreciably soluble in water
Partition Coefficient: n-octanol/water Not available
Auto-Ignition Temperature: Not available
Decomposition Temperature: Not available
Viscosity: Not available

10. STABILITY AND REACTIVITY

Reactivity: No information available
Stability: Stable
Possibility of Hazardous Reactions: Hazardous polymerization will not occur
Conditions to Avoid: Heat and moisture.
Incompatibles: Incompatible with strong oxidizers.

11. TOXICLOGICAL INFORMATION

Effects of Over Exposure:
Inhalation: Inhalation may irritate the nose, throat and upper respiratory tract. May cause allergy or asthma symptoms or breathing difficulties.
Skin Contact: Contact may cause skin irritation.
Eye Contact: Contact may be irritating to the eyes.
Ingestion: May cause gastrointestinal upset with symptoms of abdominal pain, vomiting and diarrhea.
Chronic Effects: Respiratory sensitization
Target Organs: None identified
Additional Effects: None identified
Reproductive Effects: May damage fertility or the unborn child.
Carcinogenicity:

Cobalt sulfate, heptahydrate is listed by the NTP as Anticipated Human Carcinogen [as Cobalt and Cobalt Compoun
That Release Cobalt Ions In Vivo] and by the IARC as Group 2B, Possible Human Carcinogen (as Cobalt sulfate an
other soluble cobalt (II) salts).

Toxicity Data:

<table>
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<tr>
<th>Substance</th>
<th>LD50 (oral, rat)</th>
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<tr>
<td>Cobalt sulfate, heptahydrate</td>
<td>768 mg/kg</td>
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12. ECOLOGICAL INFORMATION

Aquatic Toxicity Data: No information available
Terrestrial Toxicity Data: No information available

Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility in soil: No information available
Other adverse effects: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Procedures: Dispose of material and containers in accordance with all local, state and federal regulations.

14. TRANSPORTATION INFORMATION

This product is not a regulated material for domestic ground transportation.

Environmental hazards: No information available
Special precautions: No information available
Bulk transport: No information available

15. REGULATORY INFORMATION

Cobalt sulfate, heptahydrate is listed in the TSCA inventory and in SARA 313 (as cobalt compounds).

16. OTHER INFORMATION

OSHA SDS #: 25447 rev 102 1.16.2017

NE = Not established, NA = Not applicable or Not available

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***** END OF SDS *****