Material Safety Data Sheet
Cobalt(II) chloride, anhydrous, 97%

ACC# 82098

Section 1 - Chemical Product and Company Identification

MSDS Name: Cobalt(II) chloride, anhydrous, 97%
Catalog Numbers: AC214130000, AC214130050, AC214131000, AC214135000, S75088
Synonyms: Cobalt dichloride; Cobaltous dichloride.
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7646-79-9</td>
<td>Cobalt(II) chloride</td>
<td>97</td>
<td>231-589-4</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear light-blue solid.
Warning! Harmful if swallowed. Causes eye, skin, and respiratory tract irritation. May cause allergic respiratory and skin reaction. May cause cancer based on animal studies. Hygroscopic (absorbs moisture from the air). Dangerous for the environment.
Target Organs: Lungs, cardiovascular system, skin.

Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Ingestion: Harmful if swallowed. May interfere with blood clotting. Causes gastrointestinal tract irritation. May cause thyroid abnormalities.
Inhalation: Causes respiratory tract irritation. May cause asthmatic attacks due to allergic sensitization of the respiratory tract.
Chronic: Cobalt compounds may cause cancer based upon animal studies.

Section 4 - First Aid Measures
**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Use of chelators such as BAL penicillamine and N-acetylpenicillamine should be considered.

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**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 0

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**Section 6 - Accidental Release Measures**

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

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**Section 7 - Handling and Storage**

**Handling:** Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Wash clothing before reuse.

**Storage:** Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

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**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an
eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt(II) chloride</td>
<td>0.02 mg/m3 TWA (as Co) (listed under Cobalt, inorganic compounds)</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Cobalt(II) chloride: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate gloves to prevent skin exposure.

**Clothing:** Wear appropriate clothing to prevent skin exposure.

**Respirators:** Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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**Section 9 - Physical and Chemical Properties**

**Physical State:** Solid

**Appearance:** clear light-blue

**Odor:** slight - sharp odor

**pH:** Not available.

**Vapor Pressure:** 40 mm Hg @ 770C

**Vapor Density:** 4.5

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 1049 deg C @ 760 mmHg

**Freezing/Melting Point:** 735 deg C

**Decomposition Temperature:** 400C (sublimes)

**Solubility:** soluble in alcohol and acetone

**Specific Gravity/Density:** 3.3560g/cm3

**Molecular Formula:** Cl2Co

**Molecular Weight:** 129.84

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**Section 10 - Stability and Reactivity**

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Dust generation, excess heat.

**Incompatibilities with Other Materials:** Moisture - oxidizing agents - alkali metals.

**Hazardous Decomposition Products:** Hydrogen chloride, chlorine, chloride fumes.

**Hazardous Polymerization:** Has not been reported.
Section 11 - Toxicological Information

RTECS#:  
CAS# 7646-79-9: GF98000000  
LD50/LC50:  
CAS# 7646-79-9:  
   Oral, mouse: LD50 = 80 mg/kg;  
   Oral, rat: LD50 = 80 mg/kg;  
   Oral, rat: LD50 = 418 mg/kg;  

Carcinogenicity:  
CAS# 7646-79-9:  
   • ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans (listed as 'Cobalt, inorganic compounds').  
   • California: Not listed.  
   • NTP: Not listed.  
   • IARC: Group 2B carcinogen

Epidemiology: No information available.  
Teratogenicity: No information available.  
Reproductive Effects: No information available.  
Mutagenicity: No information available.  
Neurotoxicity: No information available.  
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.  
RCRA P-Series: None listed.  
RCRA U-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>Shipping Name:</th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TOXIC SOLID, INORGANIC, N.O.S.</td>
<td>TOXIC SOLID, INORGANIC, N.O.S.</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN3077</td>
<td>UN3077</td>
</tr>
</tbody>
</table>
Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7646-79-9 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS# 7646-79-9: immediate, delayed.

Section 313
This material contains Cobalt(II) chloride (listed as Cobalt compounds), 97%, (CAS# 7646-79-9) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
CAS# 7646-79-9 (listed as Cobalt compounds) is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 7646-79-9 can be found on the following state right to know lists: New Jersey, (listed as Cobalt compounds), Pennsylvania, (listed as Cobalt compounds), Minnesota, (listed as Cobalt, inorganic compounds).

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
TN
Risk Phrases:
R 22 Harmful if swallowed.  
R 42/43 May cause sensitization by inhalation and skin contact.  
R 49 May cause cancer by inhalation.  
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:  
S 22 Do not breathe dust.  
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S 53 Avoid exposure - obtain special instructions before use.  
S 60 This material and its container must be disposed of as hazardous waste.  
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)  
CAS# 7646-79-9: 2

Canada - DSL/NDSL  
CAS# 7646-79-9 is listed on Canada's DSL List.

Canada - WHMIS  
This product has a WHMIS classification of D1B, D2B, D2A.  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List  
CAS# 7646-79-9 is listed on the Canadian Ingredient Disclosure List.

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Section 16 - Additional Information

MSDS Creation Date: 5/12/1998
Revision #8 Date: 5/16/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if Fisher has been advised of the possibility of such damages.