Section 1: Company and Product Identification

Product Name: Chloro-bis (ethylene) Rhodium (I) Dimer

Product Code: 7059

Company: Colonial Metals, Inc.
Building 20
505 Blue Ball Road
Elkton, MD 21921 United States
Company Contact: EHS Director
Telephone Number: 410-398-7200
FAX Number: 410-398-2918
E-Mail: info@colonialmetals.com
Web Site: www.colonialmetals.com

Emergency Response:
Supplier Emergency Contacts & Phone Number
Chemtrec: 800-424-9300
World Wide - Call COLLECT to U.S: 703-527-3887

Section 2: Hazards Identification

Hazard Pictograms:

Signal Word: Warning

Hazard Category: Hazardous substance (name)

- H333: May be harmful if inhaled
- Specific target organ tox, single exp. Cat 3 (resp irrit)
- Acute tox, oral Cat 5

Hazard Statements:

- H320: Causes eye irritation
- H316: Causes mild skin irritation
- H335: May cause respiratory irritation
- H303: May be harmful if swallowed

Precautionary Statements:

- P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel
- P307+314: If exposed or concerned: Get medical advice/attention
- P308+313: IF INGESTED: Get medical advice/attention

Hazard not otherwise classified:

- Conditions Aggravated By Exposure
- May cause irritation of the respiratory system. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization.
- Conditions Aggravated By Overexposure
- To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.
- Product incompatible with oxidizing agents and active metals. Can decompose carbon dioxide and carbon monoxide, organic vapors, metal oxides and carbonates.

Section 3: Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous substance (name)</th>
<th>Hazard Category</th>
<th>CAS#</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloro-bis (ethylene) Rhodium (I) Dimer</td>
<td>Irritant</td>
<td>12081-16-2</td>
<td>0-100</td>
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</tbody>
</table>

Product Name: Chloro-bis (ethylene) Rhodium (I) Dimer
Chemical Name: Rhodium, di-mu.-chlorotetakis(.eta.2-ethene)di-
Chemical Family: Organometallic Complexes
Chemical Formula: [RhCl(C2H4)2]2
Synonyms: Rhodium, di-mu.-chlorotetakis(.eta.2-ethene)di-
Section 4: First Aid Measures

**General Info:** Dust may cause irritation of the respiratory system. Maintain housekeeping and personal hygiene to minimize exposure.

**Notable Exposure Symptoms:**

- **If ingested:** Rinse mouth. Seek immediate medical attention. Clear the airway and administer artificial respiration if not breathing. If swallowed, do not induce vomiting unless directed to do so by medical personnel.

- **If inhaled:** Remove the victim from the contaminated area while protecting yourself from exposure by wearing an appropriate respirator. Put a similar respirator on the victim if possible. Get medical attention immediately.

- **Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Get immediate medical attention.

- **Skin contact:** Flush area for 15 minutes with water and wash with soap and water. If discomfort occurs or persists, contact a physician. Remove contaminated clothing and shoes and wash before reuse.

Section 5: Fire Fighting Measures

**General Info:** Avoid breathing vapors, gases and fumes. Firefighters should wear self-contained breathing apparatus and full protective gear. Eliminate sources of ignition.

**Extinguishing Method / Equipment:** use water spray, CO2 (Carbon Dioxide), dry chemical, or foam

**Hazardous Decomposition Info:** Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas, Rhodium/rhodium oxides

Section 6: Accidental Release Measures

**Personal Precautions and Procedures:** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate respiratory protective equipment and clothing during clean-up. Avoid breathing dust. Ventilate area if easy to do so. Contact local authorities if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Containment:** Contain actively spilling material if safe and easy to do so. Do not let product enter drains. Sweep or soak up and place in sealed container for reclamation or disposal, taking care to avoid dusting. Ventilate area and wash spill site after pick-up is complete.

Section 7: Handling and Storage

**Safe Handling:** Do not handle until all safety precautions have been read and understood. Keep containers tightly closed. Ensure adequate ventilation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment and wash thoroughly after handling. Keep away from ignition sources.

**Recommendations for Storage:** Store in a tightly sealed container in a dry, well ventilated place at -20C.

**Incompatibilities:** Strong oxidizing agents.

Section 8: Exposure Control / Personal Protection

**General / Ventilation:** Local Exhaust: Required in handling area

**Engineering Controls:** Mechanical: Desirable to insure concentration of material below TLV/TWA levels

- Other: Closed Ventilation system - Dust (Laboratory Fume Hood)

**Work Clothing:** Protective work clothing which covers skin and prevents exposures.

**Eye/face protection:** Wear safety glasses with side shields or goggles or face shield.

**Skin Protection:** Wear chemical resistant gloves.

**Respiratory Protection:** Utilize organic vapor respirator if airborne levels are not maintained or if ventilation is inadequate.

**Ingredient(s) - ** Rhodium, di-mu.-chlorotetrakis(eta.2-ethene)di-

**Exposure Limits:**

- ACGIH - TWA - 1 mg/m3 (as Rh)
- OSHA PEL - 0.1 mg/m3 (as Rh)
Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Solid</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Color</td>
<td>Rust colored powder</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Molecular Wt.</td>
<td>388.93</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Part. Coeff (n-octanol/water)</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper Flam Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Lower Flam Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

**General:** This product is stable and non-reactive under normal conditions of use. Product is not subject to hazardous polymerization. Avoid open flame and ignition sources.

**Stability:** Stable

**Conditions to Avoid:** Elevated Temperature

**Incompatible materials:** Strong Oxidizing agents

**Decomposition products:** Carbon oxides and hydrogen chloride gas

Section 11: Toxicological Information

**General Information:** To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.

Section 12: Ecological Information

**General information:** No data available

**Aquatic toxicity:** No data available

**Degradation / Mobility info:** No specific data available.

**Bioaccumulative potential:** No specific data available.

Section 13: Disposal Information

**Product disposal:** Place in a sealed container. Consult Federal EPA, State and local regulations for proper disposal/recycle/reclamation

**Container disposal:** Treat empty containers with extra care. Consult waste contractor.

Section 14: Transport Information

**DOT:** Proper Shipping Name
- Chloro-bis (ethylene) Rhodium (I) Dimer
- Hazard Class
- Not dangerous goods - Considered non-hazardous for transport
- Secondary Hazard Class
- NA

**IMO/IMDG:** Same as DOT 49 CFR regulations.

**IATA:** Same as DOT 49 CFR regulations. Consult IATA before shipping
Section 15: Regulatory Information

TSCA: Not Listed in the TSCA

SARA 302/311/313 Components:
SARA 302: This material does not contain any chemical components SARA Title III, Section 302 reporting requirements.

SARA 313 Components:
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

SARA 311/312 Hazards:
No Sara Hazards

Canadian DSL: This product has been classified in accordance with the hazard criteria of CPR, and the MSDS contains all the information required by the CPR.

Other International Regulations:
None

Section 16: Other Information

NFPA Rating
Health: 2
Fire: 0
Reactivity: 0

HMIS Rating
Health: 2
Fire: 0
Reactivity: 0
Personal Protection: J

Disclaimer: In compliance with the OSHA Hazard communication Standard, 29 C.F.R 1910.1200, we are providing you with a Materials Safety Data Sheet (MSDS) for the hazardous material you are purchasing.

It is your responsibility to educate your employees on the safe use of the hazardous material. With this in mind, a copy should be forwarded to the supervisor of the user or to the user themselves, and copy should be retained in your files for future reference.

Colonial Metals, Inc. makes no presentation as to the accuracy of the information in the MSDS. The information is believe to be correct; however, you (the customer), should perform your own investigation and independent verification. If you resell the product, you are responsible to forward the information in the MSDS to your customer.

Colonial Metals, Inc.

SDS Author: John Kerchner

Version Date: 7/30/2015