Section 1: Company and Product Identification

Product Name: Dichlorobis (Triphenylphosphine) Palladium (II)

Product Code: 5051

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:
- Acute tox, dermal Cat 5
- Skin corrosion/irritation Cat 2
- Serious eye damage/eye irritation Cat 3
- Acute tox, inh. Cat 4
- Specific target organ tox, single exp. Cat 3 (resp irrit)

Hazard Statements:
- H313: May be harmful in contact with skin
- H315: Causes skin irritation
- H320: Causes eye irritation
- H332: Harmful if inhaled
- H355: May cause respiratory irritation

Precautionary Statements:
- P202: Do not handle until all safety precautions have been read and understood
- P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
- P264: Wash thoroughly after handling
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P308+313: IF exposed or concerned: Get medical advice/attention
- P402+404: Store in a dry place. Store in a closed container
- P501: Dispose of contents/container in accordance with local/national/international rules.
- P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Hazards 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, the physical, and toxicological properties have not been thoroughly investigated.
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>Dichlorobis (Triphenylphosphine) Palladium (II)</td>
<td>Irritant</td>
<td>13965-03-2</td>
<td>100</td>
</tr>
</tbody>
</table>

Chemical Name: Bis (Triphenylphosphine) Palladium (II) Dichloride
Chemical Family: Platinum Group Metal Coordination Complex
Chemical Formula: C36H30Cl2P2Pd

Section 4: First Aid Measures

General Info:

Notable Exposure: Irritation to skin, eyes and areas of contact.

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. Contact a physician immediately.

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. Contact a physician immediately.

Skin contact: Take off immediately all contaminated clothing. Rinse with water thoroughly. Contact a physician.

Additional Info: Observe for any symptoms for several hours after exposure. Follow up with medical attention if symptoms develop.

Section 5: Fire Fighting Measures

General Info: Product is not flammable.

Extinguishing: In case of fire, use water fog, dry chemical, CO2, or “alcohol” foam.

Method / Equipment:

Hazardous: Constituents associated with burning / combustion are to be considered toxic. Can decompose to emit toxic carbon monoxide, carbon dioxide, oxides of phosphorous, and hydrogen chloride gases.

Decomposition Info: Firefighters should wear self-contained breathing apparatus and full protective gear.

Section 6: Accidental Release Measures

Personal precautions, Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all protective equipment ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate and procedures: 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. avoid generating dust. Collect material and dispose.

Cleanup Procedures: Collect all contaminated media, or other cleanup materials into a waste receptacle. If cleaning surface is necessary, wash spill site after pickup 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.

Precautions: Recommendations for Hygroscopic: Store in cool, dry area in a tightly closed product container away from sources of Storage: ignition or flame.

Incompatibilities: Strong oxidizing agents Refer to Section 10.
Section 8: Exposure Control / Personal Protection

General / Engineering Controls:
Use with adequate local and general exhaust ventilation.

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.

Additional Information: Observe good chemical hygiene practices. Do not smoke or eat while using this product. Wash hands or exposed skin after using the product.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Solid</td>
</tr>
<tr>
<td>Melting Point</td>
<td>297-298 °C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>N/A</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow Crystals</td>
</tr>
<tr>
<td>Molecular Wt.</td>
<td>701.89</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Evaporation rate</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>Lower Flam Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper Flam Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
</tr>
<tr>
<td>VOC Content (lbs/gal)</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity</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.

Incompatible materials:
Oxidizing Agents

Decomposition Carbon monoxide, Carbon dioxide, Hydrogen chloride gas, Thermal decomposition may produce products: toxic fumes of phosphorus oxides and/or phosphine.

Section 11: Toxicological Information

General Information: No data available

Likely Routes of Exposure:
Eye Contact
Skin Contact
Inhalation
Ingestion - possible, but considered unlikely.

Toxicological Information (contained substances)

Section 12: Ecological Information

General information: Product not tested.

Aquatic toxicity: No specific data available. Do not allow large quantities of product to reach water, ground water, water courses or sewer systems.

Degradation / Mobility info: No specific data available.

Bioaccumulative potential: No specific data available.

Section 13: Disposal Information

Product disposal: Dispose of product in accordance with local, regional, and national regulations. Burn in an incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Consult with a licensed professional waste contractor to dispose of this material.

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

Other considerations: Chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.
Section 14: Transport Information

**DOT:** Non-Hazardous  
**IMO/IMDG:** Non-Hazardous  
**IATA:** See regulation for information  
**OTHER:** Inquire for further transport information.  
**Comments:** Non-Hazardous for shipping

Section 15: Regulatory Information

**TSCA:** This product is for R&D purpose only. Not TSCA listed  
**SARA 313** This product does not contain any ingredients regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372  
**Canadian DSL:** This information and product has been classified in accordance with the hazard criteria of CPR, and the MSDS contains all the information required by the CPR.

**European Union (EU) Hazard symbols:** XN  
**Risk phrases:** R22 harmful if swallowed  
**R 36/37/38** irritating to eyes, respiratory system, and skin  
**Safety phases:** S26 in case of contact with eyes rinse immediately with plenty of water and seek medical attention  
**S37/39** wear suitable gloves and eye and face protection

Section 16: Other Information

**NFPA Rating**  
**Health:** 2  
**Fire:** 0  
**Reactivity:** 0

**HMIS Rating**  
**Health:** 2  
**Fire:** 0  
**Reactivity:** 0  
**Personal Protection:** C

**Precautionary Label:** Carcinogen  
**Irritant**

**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:** 8/3/2015