Section 1: Company and Product Identification

Product Name: Rhodium Oxide – Platinum Oxide (Nishimura Catalyst)
Product Code: 7064
CAS Number: 39373-27-8
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

Signal Word: Warning
Hazard Category:
Serious eye damage/eye irritation Cat 3
Skin corrosion/irritation Cat 3
Acute tox, inh. Cat 5
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
H333: May be harmful if inhaled
H335: May cause respiratory irritation
H303: May be harmful if swallowed
P301+313: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel
P337+313: If eye irritation persists get medical advice/attention
P308+313: IF exposed or concerned: Get medical advice/attention

Hazards not otherwise classified:
May cause irritation of the respiratory system. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization.
To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.
Any respiratory conditions such as asthma. Maintain housekeeping and personal hygiene to minimize exposure and prevent sensitization.
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>Rhodium Oxide</td>
<td>Irritant - Avoid contact with</td>
<td>12036-35-0</td>
<td>0 - 19.5</td>
</tr>
<tr>
<td>platinum (IV) Oxide</td>
<td>combustible materials.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product Name: Rhodium Oxide- Platinum Oxide (Nishimura catalyst)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Name: Nishimura catalyst</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS Number: Not Established</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Family: Platinum Group Metals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Formula: RhPtO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synonyms: Nashimura catalyst</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

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

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

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 to fresh air immediately. If discomfort occurs or persists, contact a physician immediately.

Eye contact: Flush for 15 minutes with plenty of water. If discomfort occurs or persists, contact a physician

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: Finely divided platinum may ignite if contacted with flammable organic solvents. Powders may be subjected to self-heating if hydrogen or carbon monoxide are occluded. Emits toxic fumes under fire conditions

Extinguishing: Use water spray, carbon dioxide, dry chemical powder or dry sand. Do not use organics.

Method / Equipment:

Hazardous: Constituents associated with burning / combustion are to be considered toxic. Firefighters should wear

Decomposition Info: 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 and procedures: 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: Large Spills: 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 Procedure: dusting. Ventilate area and wash spill site after pick-up is complete.

Cleanup Procedures: Contain spillage and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations.

Section 7: Handling and Storage

SafeHandling: Do not handle until all safety precautions have been read and understood. Keep containers tightly

Precautions: 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.
Section 8: Exposure Control / Personal Protection

General / Ventilation: Local Exhaust: Required in handling area

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

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

Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Ingredient(s) - Rhodium oxide
Exposure Limits OSHA PEL - 0.002 MG/M3 (AS PT SOLUBLE)
ACGIH - 0.002 MG/M3 (AS PT SOLUBLE)
TWA - 1 MG/M3

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>State: Solid Powder</th>
<th>Melting Point: N/A</th>
<th>Freezing N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color: Brown Black</td>
<td>Boiling Point/Range: N/A</td>
<td>pH N/A</td>
</tr>
<tr>
<td>Molecular Wt. N/A</td>
<td>Odor: Odorless</td>
<td>Water Insoluble</td>
</tr>
<tr>
<td>Specific Gravity: N/A</td>
<td>Flash Point: N/A</td>
<td>Part. Coeff (n-octanol/water)</td>
</tr>
<tr>
<td>Upper Flam Limits: N/A</td>
<td>Lower Flam Limits: N/A</td>
<td>Vapor N/A</td>
</tr>
<tr>
<td>VOC Content N/A (lbs/gal):</td>
<td>Viscosity: N/A</td>
<td>Autoignition N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temp:</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: Temperatures above 300°C.

Incompatible materials:

Decomposition: Nature of decomposition products not known

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.

Toxicological Information: The TDL for RAT implant is 5250 mg/kg; For implant in mice, the TDL is 23000 mg/kg platinum in this form is practically nontoxic. Platinum in this form is non-allergenic but ionic platinum halogen complexes are allergic.
Likely Routes of Exposure:

Eye Contact
Skin Contact
Inhalation
Ingestion - possible, but considered unlikely.

Section 12: Ecological Information
General information: No data available

Section 13: Disposal Information
NOTE: Chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.
Container disposal: Treat empty containers with extra care. Consult waste contractor.

Section 14: Transport Information
DOT: Proper Shipping Name
Not Dangerous Goods
Hazard Class
NA
Secondary Hazard Class
NA
IMO/IMDG: No data available
IATA: Same as DOT 49 CFR regulations. Consult IATA before shipping.

Section 15: Regulatory Information
TSCA: This chemical is TSCA listed
SARA 313 No Data Available
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.
DSL: Yes
NDSL: No
European Union Indication of Danger: Irritant
(EU) Regulatory Symbol of Danger: Xi
Information: R: 20, 38
Risk Phrase: Harmful by inhalation. Irritating to the skin.
S: 22-24/25, 36/37/39
Safety Phrase: Do not breathe dust. Avoid contact with skin and eyes. Wear suitable protective clothing, gloves, and eye face protection.

Section 16: Other Information
<table>
<thead>
<tr>
<th>NFPA Rating</th>
<th>HMIS Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health: 2</td>
<td>Health: 2</td>
</tr>
<tr>
<td>Fire: 0</td>
<td>Fire: 0</td>
</tr>
<tr>
<td>Reactivity: 0</td>
<td>Reactivity: 0</td>
</tr>
<tr>
<td></td>
<td>Personal</td>
</tr>
<tr>
<td></td>
<td>Protection: J</td>
</tr>
</tbody>
</table>
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 preform 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.

Version Date: 8/16/2016