Section 1: Company and Product Identification

Product Name: Sodium gold (I) sulfite solution

Product Code: 2031-S

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: Danger

Hazard Category:
- Corrosive to metals Cat 1
- Skin corrosion/irritation Cat 1
- Acute tox, oral Cat 4
- Acute tox, inh. Cat 4

Hazard Statements:
- H290: May be corrosive to metals
- H314: Causes severe skin burns and eye damage
- H302: Harmful if swallowed
- H332: Harmful if inhaled

P260: Do not breathe dust/fume/gas/mist/vapors/spray
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove any contact lenses if present and easy to do. Continue rinsing at least for 15 minutes.
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P405: Store locked up
P501: Dispose of contents/container in accordance with local/regional/national/international rules.

Hazards not otherwise classified:
- To the best of our knowledge the chemical, physical, and toxicological properties of this compound have not been thoroughly investigated. Avoid elevated temperature.
- Incompatible with most metals, alkalines, metallic oxides, strong oxidants. Also water reactive materials i.e. conc. sulfuric acid, oleum & acetic

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>Sodium gold (I) sulfite solution</td>
<td>Danger</td>
<td>19153-98-1</td>
<td>99-100</td>
</tr>
</tbody>
</table>

Chemical Family: Group 1B Metal salts solution
Chemical Formula: Na3Au(SO3)2
Synonyms: Gold Sodium Sulfite Solution
Section 4: First Aid Measures

General Info: Ensure proper ventilation.

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.

- **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 medical attention immediately.

- **Skin contact:** Take off immediately all contaminated clothing. Rinse with water thoroughly. Get medical attention immediately.

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: Use proper safety equipment. If this product is involved in a fire Sodium sulfite and metal oxide fume can be released.

Extinguishing Method / Equipment:

- **Hazardous Decomposition Info:** Constituents associated with burning / combustion are to be considered toxic. Firefighters should wear self-contained breathing apparatus and full protective gear.

Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

Section 6: Accidental Release Measures

- **Personal precautions, protective equipment 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 protective equipment (SCBA) and clothing during clean-up. Avoid breathing vapor. Ventilate area if easy to do so and wash spill site after clean up is complete. Contact local authorities if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

- **Containment Large Spills:** Dike major spills. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent. Dispose contaminated material as waste. Ensure adequate ventilation.

- **Equipment and Procedures:** Collect all contaminated media, or other cleanup materials into a waste receptacle. If cleaning surface is necessary, utilize vacuum cleaner, provided adequate ventilation is available.

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 vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment and wash thoroughly after handling.

- **Work/Hygienic Practices:** Always use good personal hygiene after handling.

- **Recommendations for Storage:** Store in the dark. Store away from strong bases. Keep from freezing. Keep container upright.

- **Other Precautions:** 0.01 ppm high efficiency particulate respirator/supplied air respirator/self-contained breathing apparatus; 0.2 ppm same as above with full face piece; 1 ppm powdered air purifying respirator with high efficiency filter/type C supplied air respirator operated in pressure demand mode. Store in a sealed container, plastic or plastic liner, in a cool, well ventilated, dry area away from volatile acids.
Section 8: Exposure Control / Personal Protection

General / Engineering Controls:
- Ventilation: Local Exhaust: Required in handling area
- Mechanical: Desirable to insure concentration of material below TLV/TWA levels
- Other: Closed ventilation system (Laboratory Fume Hood)

Work Clothing: Protective work clothing which covers skin and prevents exposures. Lab coat/apron, flame and chemical resistant protective clothing, eye wash, safety shower, and hygiene facilities for washing.

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

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: NIOSH approved chemical cartridge respirator for acid gas/chlorine (42 CFR part 84) and self-contained breathing apparatus with full face shield.

Additional Information: None

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>N/A</td>
</tr>
<tr>
<td>Freezing Point:</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>105 °C</td>
</tr>
<tr>
<td>Color:</td>
<td>Yellow</td>
</tr>
<tr>
<td>Solution:</td>
<td>Slight sulfur odor</td>
</tr>
<tr>
<td>Molecular Wt.:</td>
<td>424.06</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>N/A</td>
</tr>
<tr>
<td>Lower Flam Limits:</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper Flam Limits:</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>
<tr>
<td>Odor:</td>
<td>Slight sulfur odor</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>Soluble</td>
</tr>
<tr>
<td>pH:</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Part. Coef (n-octanol/water):</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp:</td>
<td>N/A</td>
</tr>
<tr>
<td>Specific Gravity:</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. Conditions To Avoid (Stability) Elevated temperature.

Incompatible materials:
- Most metals, alkalines, metallic oxides, strong oxidants. Also water reactive materials i.e conc. sulfuric acid, oleum & acetic anhydrate. Carbonates, cyanides and sulfides.

Decomposition: Sulfur Dioxide products: Decomposition will not occur if used and stored according to specifications.

Section 11: Toxicological Information

General Information: Harmful if swallowed. Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach. The RTECS contains acute toxicity data for this product.

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

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

Carcinogenicity or mutagenicity: None data available

Sensitization: Product is not expected to be a sensitizer.
Section 12: Ecological Information

General information: This product is manufactured in accordance to and in compliance with all aspects of the Toxic Substances Control Act (TSCA) and that all compounds are on the TSCA inventory; This product is also in compliance with the New Substances Notification Regulations (NSNR) and all ingredients are on the DSL/NDSL.

Aquatic toxicity: No Data Available

Degradation / Mobility info: No specific data available.

Bioaccumulative potential: No specific data available.

Section 13: Disposal Information

Product disposal: Consult Federal EPA, State and local regulations for proper disposal/recycle/reclamation

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

Other considerations: NOTE: 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: Proper Shipping Name
- Corrosive liquid n.o.s.

Hazard Class
- 8

DOT Identification Number
- 1760

DOT Shipping Label
- Corrosive liquid n.o.s.

Packaging Requirements
- See DOT Regulations

IMO/IMDG: Inquire for further transport information.

IATA: Same as DOT, always consult IATA manual before shipping

OTHER: Inquire for further transport information.

Section 15: Regulatory Information

TSCA: All ingredients of this product are listed under the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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

European Union (EU) Regulatory Information: Symbol of Danger: C
- Indication of Danger: Corrosive
- Risk Statements: Causes burns, Irritating to eyes, Irritating to respiratory system.
- S: 17 26 27 36/37 39 45
- Safety Statements: Keep away from combustible material. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately.

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>Other: COR</td>
<td>Personal 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 believed 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.

SDS Author: John Kerchner

Version Date: 9/8/2015