

Safety Data Sheet 29 CFR 1910.1200

Section 1: Company and Product Identification

Product Name: Tetraamminepalladium (II) Hydroxide Solution

Product Code: 5046-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



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: Skin corrosion/irritation Cat 1
 Serious eye damage/eye irritation Cat 1
 Acute tox, oral Cat 3
 Acute tox, inh. Cat 3

Hazard Statements: H314: Causes severe skin burns and eye damage
 H318: Causes serious eye damage
 H301: Toxic if swallowed
 H331: Toxic if inhaled

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
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
 P402+404: Store in a dry place. Store in a closed container
 P501: Dispose of contents/container in accordance with local/national/international rules.

Hazards not otherwise classified:

Conditions Aggravated By Exposure: **Eyes:** Exposure to high concentration of ammonia gas may cause blindness. **Skin:** Sensitization and lymphocytosis; Possible burns or blister formation. **Ingestion:** burning pain in the mouth, throat, stomach, thorax; coughing followed by vomiting or diarrhea. **Inhalation:** Coughing, shortness of breath, wheezing; Convulsions and shock.
 May cause irritation of the respiratory system.

Section 3: Composition / Information on Ingredients

Hazardous substance (name)	Hazard Category	CAS#	Weight %
Ammonia Hydroxide	Corrosive	1336-21-6	0 - 15
Tetraamminepalladium (II) Hydroxide		68413-68-3	85 - 90
Chemical Family: Platinum Group Metal Salts Synonyms: Tetraamminepalladium (II) Hydroxide, Palladium Tetra ammine Dihydroxide Chemical Formula: (NH ₃) ₄ Pd(OH) ₂			

Section 4: First Aid Measures

General Info: Ensure proper ventilation.

Notable Exposure symptoms: 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 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 if irritation develops or persists.

Skin contact: Take off immediately all contaminated clothing. Rinse with water thoroughly. Get medical advice if irritation develops or persists.

Additional Info: Observe for any symptoms for several hours after exposure. Follow up with medical attention if symptoms develop. Note To Physician, Treat symptomatic symptoms

Section 5: 5. Fire Fighting Measures

General Info: Use proper safety equipment. Can decompose to emit toxic fumes of ammonia.

Extinguishing Method / Equipment: Carbon dioxide, dry chemical powder or appropriate foam

Method / Equipment:

Hazardous Decomposition Info: Use proper safety equipment. Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Can decompose to emit toxic fumes.

Decomposition Info: full protective clothing. Can decompose to emit toxic fumes.

Section 6: 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 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, avoid generating dust.

Equipment and Procedures: Have emergency response team respond. Neutralize with dilute HCL solution. Soak up and place in sealed container for reclamation or disposal. Neutralize with dilute HCL solution. Soak up and place in sealed container. Avoid inhalation, ingestion, and contact with skin and eyes. Person protected with full face shield and proper respirator for ammonia vapor.

Small Spills: Neutralize with dilute alkalis solution or use soda ash or lime. Soak up and place in sealed container for reclamation or disposal. Use proper exposure controls and personal protection equipment (See Personal Protection).

Cleanup 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

Precautions: closed Ensure adequate ventilation. Avoid breathing dust/vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment and wash thoroughly after handling.

Recommendations Store in cool, dry area in a sealed container, plastic or plastic liner, in a cool, well ventilated, dry
for Storage: area away from volatile acids.

Incompatibilities: Store away from strong acids or oxidizing agents. Refer to Section 10.

Other Precautions: 0.01 ppm high efficiency particular 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 / Ventilation: Local Exhaust: Required in handling area

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

Controls: levels

Other: Closed Ventilation system with corrosive-resistant materials

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 Where risk assessment shows air-purifying respirators are appropriate use a full-face particle
Protection: respirator type N100 (US) or type P3 (EN 143) 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).

Additional Ingredient(s) - Exposure Limits

Information: Ammonium Hydroxide
50 ppm or 35 mg/m³
NIOSH - 50 ppm, 5-min ceil (35 mg/m³)
ACGIH - 25 ppm

Section 9: Physical and Chemical Properties

State: Liquid	Melting Point: N/A	Freezing Point: N/A
Color: Clear Yellow solution	Boiling Point/Range: 1000 °C	pH N/A
Molecular Wt. 208.58	Odor: Ammonia Odor	Water Soluble Solubility:
Evaporation rate: N/A	Flash Point: N/A	Part. Coeff (n-octanol/water) N/A
Upper Flam Limits: N/A	Lower Flam Limits: N/A	Vapor Pressure: N/A
VOC Content (lbs/gal): N/A	Viscosity: N/A	Autoignition Temp: N/A

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: Mixing with strong acids and reducing agents

Decomposition products: Ammonia fumes

Section 11: Toxicological Information

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

Toxicological Information (product): Subchronic (Target Organ Effects)

Information (product): Blood. Central Nervous System.

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

Carcinogenicity or mutagenicity: No data available

Sensitization: Product is not expected to be a sensitizer.

Other Notes: Probable lethal ingestion dose of ammonium hydroxide is 3-4 ml (1 ounce)

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: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. 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

Packaging Requirements

PG II

IMO/IMDG: See regulation for information**IATA: Proper Shipping Name:** Corrosive, Liquid, n.o.s.**Hazard Class:** 8**Packaging Group:** II**UN:** 1760**OTHER:** Inquire for further transport information.**Comments:** None**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 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) Indication of Danger:** ES**Regulatory** R: 36/37/38**Information:** **Risk Phrase:** Irritating to eyes, respiratory system and skin.

S: 36/37/39

Safety Phrase: Wear suitable protective clothing, gloves, and eye/face protection.**Other International Regulations**

US Regulatory Information:

Indication of Danger: Corrosive

R: 36/37/38

Risk Phrase: Irritating to eyes, respiratory system and skin.

S: 36/37/39

Safety Phrase: Wear suitable protective clothing, gloves, and eye/face protection.

Section 16: Other Information

NFPA Rating

Health: 3

Fire: 0

Reactivity: 0

Other: COR

HMIS Rating

Health: 3

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 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:** 6/15/2015