


# MATERIAL SAFETY DATA SHEET

## Tetraamminepalladium (II) Nitrate Solution

<b>NFPA</b> 	<b>HMIS</b> <table border="1"><tr><td>HEALTH</td><td style="text-align: center;">3</td></tr><tr><td>FLAMMABILITY</td><td style="text-align: center;">0</td></tr><tr><td>REACTIVITY</td><td style="text-align: center;">0</td></tr><tr><td>PERSONAL PROTECTION</td><td style="text-align: center;">J</td></tr></table>	HEALTH	3	FLAMMABILITY	0	REACTIVITY	0	PERSONAL PROTECTION	J
HEALTH	3								
FLAMMABILITY	0								
REACTIVITY	0								
PERSONAL PROTECTION	J								

### 1. Product And Company Identification

**Supplier**

Colonial Metals, Inc.  
Building 20  
505 Blue Ball Road  
Elkton, MD 21921 United States

**Company Contact:** Joseph Fittos III  
**Telephone Number:** 410-398-7200  
**FAX Number:** 410-398-2918  
**E-Mail:** jfittos@colonialmetals.com  
**Web Site:** colonialmetals.com

**Manufacturer**

Colonial Metals, Inc.  
Building 20  
505 Blue Ball Road  
Elkton, MD 21921 United States

**Company Contact:** Joseph Fittos III  
**Telephone Number:** 410-398-7200  
**FAX Number:** 410-398-2918  
**E-Mail:** jfittos@colonialmetals.com  
**Web Site:** colonialmetals.com

**Supplier Emergency Contacts & Phone Number**

**Chemtrac:** 800-424-9300  
**World Wide - Call COLLECT to U.S:** 703-527-3887

**Manufacturer Emergency Contacts & Phone Number**

**Chemtrac:** 800-424-9300  
**World Wide - Call COLLECT to U.S:** 703-527-3887

**Issue Date:** 07/23/2008

**Product Name:** Tetraamminepalladium (II) Nitrate Solution

**Chemical Name:** Tetraammine Palladous Nitrate Solution

**CAS Number:** 13601-08-6

**Chemical Family:** Platinum Group Metal Salts

**Chemical Formula:** (NH<sub>3</sub>)<sub>4</sub> Pd(NO<sub>3</sub>)<sub>2</sub>

**MSDS Number:** 5018

**Product Code:** 5018-S

### 2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
Ammonia Hydroxide	1336-21-6	0 - 5
Ammonium Nitrate	6468-52-2	0 - 51
Tetraammine Palladium (II)	13601-08-6	0 - 5

### EMERGENCY OVERVIEW

**Oxidizing. Irritant.**

**Explosive when dry.**

**Contact with combustible material may cause fire.**

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

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## Tetraamminepalladium (II) Nitrate Solution

### Hazards Identification (Pictograms)



### 3. Hazards Identification

#### Primary Routes(s) Of Entry

Eye: Likely  
Inhalation: Likely  
Skin: Likely  
Ingestion: Likely

#### Eye Hazards

Irritation; Exposure to high concentration of ammonia gas may cause blindness.

#### Skin Hazards

Irritation; possible burns or blister formation. May be harmful through skin absorption.

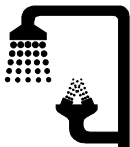
#### Ingestion Hazards

Irritation; burning pain in the mouth, throat, stomach, thorax; coughing followed by vomiting or diarrhea. May be harmful if swallowed.

#### Inhalation Hazards

Irritation to the upper respiratory tract and mucous membranes; possible convulsions or shock. May be harmful if inhaled.

### First Aid (Pictograms)



### 4. First Aid Measures

#### Eye

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

#### Skin

Immediately wash with soap and copious amounts of water. If discomfort occurs or persists, contact a physician immediately. Remove contaminated clothing and shoes and wash before reuse.

#### Ingestion

Wash out mouth with water provided the victim is conscious. Never give anything by mouth to an unconscious person. Contact a physician immediately.

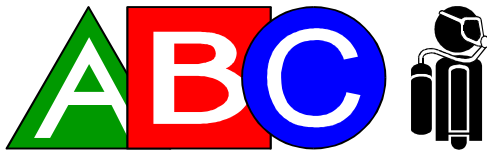
#### Inhalation

Remove to fresh air immediately. If victim is not breathing provide artificial respiration. If breathing is difficult give oxygen. Contact a physician immediately.

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## Tetraamminepalladium (II) Nitrate Solution

### Fire Fighting (Pictograms)



### 5. Fire Fighting Measures

**Flash Point:** NA °C

**Autoignition Point:** NA °C

**Flammability Class:** NA

#### Fire And Explosion Hazards

Dry material explodes when heated.

May be shock sensitive if dry.

May accelerate combustion.

Emits toxic fumes under fire conditions.

#### Extinguishing Media

Use water spray.

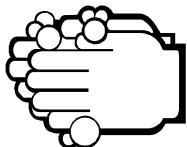
#### Fire Fighting Instructions

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

### 6. Accidental Release Measures

Neutralize with dilute HCL solution. Cover with dry-lime, sand, or soda ash and sweep or soak up and place in sealed container using non-sparking tools. Person protected with full face shield and proper respirator for ammonia vapor. Ventilate area and wash spill site after pick up is complete.

### Handling & Storage (Pictograms)



### 7. Handling And Storage

#### Handling Precautions

Avoid breathing vapor and dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure.

#### Storage Precautions

Keep in a tightly sealed container in a cool, dry place away from combustible material.

#### Work/Hygienic Practices

Always use good personal hygiene after handling.

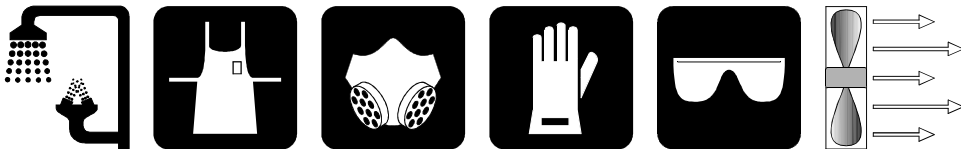
#### Other Precautions

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.

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## Tetraamminepalladium (II) Nitrate Solution

### Protective Clothing (Pictograms)



### 8. Exposure Controls/Personal Protection

#### Engineering Controls

Ventilation: Local Exhaust: Required in handling area  
Mechanical: Desirable to insure concentration of material below TLV/TWA levels  
Other: Closed ventilation system

Safety shower and eyewash

#### Eye/Face Protection

ANSI approved safety glasses/goggles, full face shield

#### Skin Protection

Rubber/Neoprene (use compatible chemical-resistant gloves)

#### Respiratory Protection

NIOSH approved chemical cartridge respirator for ammonia vapors or self-contained breathing apparatus with full face shield.

#### Other/General Protection

Lab coat/apron, flame and chemical resistant protective clothing, eye wash, safety shower, and hygiene facilities for washing

### 9. Physical And Chemical Properties

#### Appearance

Colorless to slight yellow liquid

#### Odor

Ammonia vapor

**Chemical Type:** Mixture

**Physical State:** Liquid

**Melting Point:** NA °C

**Boiling Point:** 100 °C

**Specific Gravity:** 2.01

**Molecular Weight:** 298.53

**Packing Density:** 1.03 g/cm<sup>3</sup>

**Vapor Pressure:** NE

**Vapor Density:** NE

**pH Factor:** 9.5-10

**Solubility:** Soluble

**Evaporation Rate:** NE

### 10. Stability And Reactivity

**Stability:** Stable

**Hazardous Polymerization:** Will not occur

#### Conditions To Avoid (Stability)

Heat.

# MATERIAL SAFETY DATA SHEET

## Tetraamminepalladium (II) Nitrate Solution

### 10. Stability And Reactivity - Continued

#### Incompatible Materials

Strong reducing agents, organic materials, and finely powdered metals.

#### Hazardous Decomposition Products

Nitrous oxides (NO<sub>x</sub>).

### 11. Toxicological Information

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

### 12. Ecological Information

No Data Available...

### 13. Disposal Considerations

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

NOTE: Chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.

#### RCRA Information

NL (Hazardous waste due to corrosivity)

### 14. Transport Information

No Data Available...

### 15. Regulatory Information

#### SARA Section 313 Notification

This product is subject to SARA section 313 reporting requirements.

#### 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.

DSL: No

NDSL: No

#### European Union (EU) Regulatory Information

Symbol of Danger: O-Xi

Indication of Danger: Oxidizing. Irritant.

R: 1-8-36/37/38

Risk Statements: Explosive when dry. Contact with combustible material may cause fire. Irritating to eyes, respiratory system and skin.

S: 17-26-36

Safety Statements: Keep away from combustible material. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

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## Tetraamminepalladium (II) Nitrate Solution

### DSCL - Europe (Pictograms)



### 16. Other Information

#### NFPA Rating

Health: 3

Fire: 0

Reactivity: 0

#### HMIS Rating

Health: 3

Fire: 0

Reactivity: 0

Personal Protection: J

#### Revision/Preparer Information

MSDS Preparer: Joseph J. Fittos III

MSDS Preparer Phone Number: 410-398-7200

This MSDS Supercedes A Previous MSDS Dated: 03/26/2001

### Disclaimer

In compliance with the OSHA Hazard Communication Standard, 2.9 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 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.