


# MATERIAL SAFETY DATA SHEET

## Gold (III) Nitrate Solution

|  |  |        |   |              |   |            |   |                     |   |
|--|--|--------|---|--------------|---|------------|---|---------------------|---|
| <b>NFPA</b><br> | <b>HMIS</b><br><table border="1"><tr><td>HEALTH</td><td>2</td></tr><tr><td>FLAMMABILITY</td><td>0</td></tr><tr><td>REACTIVITY</td><td>1</td></tr><tr><td>PERSONAL PROTECTION</td><td>J</td></tr></table> | HEALTH | 2 | FLAMMABILITY | 0 | REACTIVITY | 1 | PERSONAL PROTECTION | J |
| HEALTH   | 2  |        |   |              |   |            |   |                     |   |
| FLAMMABILITY   | 0  |        |   |              |   |            |   |                     |   |
| REACTIVITY   | 1  |        |   |              |   |            |   |                     |   |
| PERSONAL PROTECTION  | J  |        |   |              |   |            |   |                     |   |

### 1. Product And Company Identification

|  |  |
|--|--|
| <b>Supplier</b><br>Colonial Metals, Inc.<br>Building 20<br>505 Blue Ball Road<br>Elkton, MD 21921 United States<br><br><b>Company Contact:</b> Joseph Fittos III<br><b>Telephone Number:</b> 410-398-7200<br><b>FAX Number:</b> 410-398-2918<br><b>E-Mail:</b> jfittos@colonialmetals.com<br><b>Web Site:</b> colonialmetals.com | <b>Manufacturer</b><br>Colonial Metals, Inc.<br>Building 20<br>505 Blue Ball Road<br>Elkton, MD 21921 United States<br><br><b>Company Contact:</b> Joseph Fittos III<br><b>Telephone Number:</b> 410-398-7200<br><b>FAX Number:</b> 410-398-2918<br><b>E-Mail:</b> jfittos@colonialmetals.com<br><b>Web Site:</b> colonialmetals.com |
|--|--|

|   |   |
|---|---|
| <b>Supplier Emergency Contacts &amp; Phone Number</b><br>Chemtrac: 800-424-9300<br>World Wide - Call COLLECT to U.S: 703-527-3887 | <b>Manufacturer Emergency Contacts &amp; Phone Number</b><br>Chemtrac: 800-424-9300<br>World Wide - Call COLLECT to U.S: 703-527-3887 |
|---|---|

**Issue Date:** 10/01/2008

**Product Name:** Gold (III) Nitrate Solution  
**CAS Number:** Not Established  
**Chemical Family:** Group 1B Metal Salt solution  
**Chemical Formula:** H<sub>Au</sub>(NO<sub>3</sub>)<sub>4</sub> in Nitric Acid Solution  
**MSDS Number:** 2014  
**Product Code:** 2014-S

**Synonyms**  
Gold (III) Nitrate Solution

### 2. Composition/Information On Ingredients

| Ingredient Name | CAS Number | Percent Of Total Weight |
|-----------------|------------|-------------------------|
| Gold            | 7440-57-5  | 1 - 5                   |
| Nitric Acid     | 7697-37-2  | 60 - 65                 |
| Water           | 7732-18-5  | 30 - 35                 |

### EMERGENCY OVERVIEW

**OXIDIZING AND CORROSIVE**

**AVOID CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.**  
**IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.**  
**CAUSES BURNS.**

# MATERIAL SAFETY DATA SHEET

## Gold (III) Nitrate Solution

### Hazards Identification (Pictograms)



### 3. Hazards Identification

#### Primary Routes(s) Of Entry

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

#### Eye Hazards

Strong corrosive and irritating effect on the eyes.

#### Skin Hazards

Corrosive and irritating effect on skin.

#### Ingestion Hazards

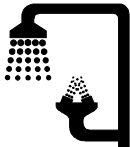
May have corrosive and irritating effects on the gastrointestinal tract.

#### Inhalation Hazards

Can cause irritation and delayed pulmonary edema, and respiratory compromise. Irritating and corrosive to mucous membranes.

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

### First Aid (Pictograms)



### 4. First Aid Measures

#### Eye

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

#### Skin

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

#### Ingestion

If swallowed contact a physician immediately.

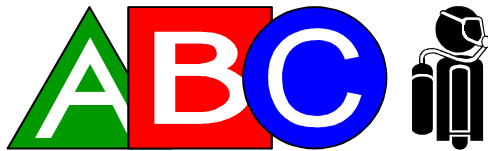
#### Inhalation

Remove to fresh air immediately. If required provide artificial respiration. Keep victim warm. Contact a physician immediately.

# MATERIAL SAFETY DATA SHEET

## Gold (III) Nitrate Solution

### Fire Fighting (Pictograms)



### 5. Fire Fighting Measures

**Flash Point:** NA °C

**Autoignition Point:** NA °C

**Flammability Class:** NA

#### Fire And Explosion Hazards

Use proper safety equipment. This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can decompose to emit toxic nitrous oxide (NOX) gases.

#### Extinguishing Media

Use water spray, foam, dry chemical, carbon dioxide or medium for primary source.

#### Fire Fighting Instructions

Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. EMITS TOXIC FUMES UNDER FIRE CONDITIONS. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY ACCELERATE COMBUSTION.

### 6. Accidental Release Measures

Dike major spills. Neutralize with slaked lime or sodium bicarbonate solution, soak up and place in a sealed container. Person protected with full face shield and proper respirator for dust/mist/fume, rubber/neoprene gloves and rubber apron.

### Handling & Storage (Pictograms)



### 7. Handling And Storage

#### Handling And Storage Precautions

#### Handling Precautions

USE ONLY IN A CHEMICAL FUME HOOD. DO NOT GET IN EYES, ON SKIN, ON CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE.

#### Storage Precautions

KEEP IN A TIGHTLY CLOSED CONTAINER IN A COOL DRY PLACE.

#### Work/Hygienic Practices

KEEP AWAY FROM COMBUSTIBLE MATERIALS, HEAT, SPARKS, FLAMMABLES, REDUCING AGENTS, AND OPEN FLAME. MAY REACT WITH ORGANICS AND INORGANICS.

Use good personal hygiene. Wash thoroughly with soap and water 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

# MATERIAL SAFETY DATA SHEET

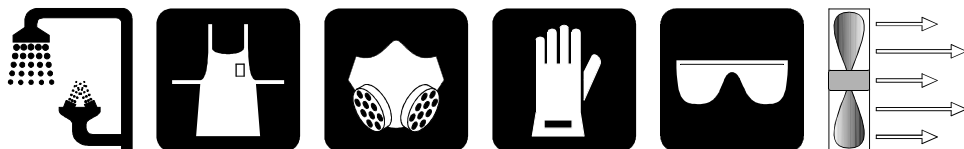
## Gold (III) Nitrate Solution

### 7. Handling And Storage - Continued

#### Work/Hygienic Practices - Continued

area away from volatile acids.

#### 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 with corrosive-resistant materials

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 acid gas/chlorine (42 CFR part 84) and 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

#### Ingredient(s) - Exposure Limits

Nitric Acid  
ACGIH- 2 ppm TWA; 4 ppm STEL  
NIOSH - 2 ppm TWA; 5mg/m<sup>3</sup> TWA 25 ppm IDLH  
OSHA -Final PELs - 2 ppm TWA; 5 mg/m<sup>3</sup> TWA

### 9. Physical And Chemical Properties

#### Appearance

Yellow solution

#### Odor

Acidic

#### Odor Threshold

**Chemical Type:** Mixture

**Physical State:** Liquid

**Melting Point:** NA °C

**Boiling Point:** NA °C

# MATERIAL SAFETY DATA SHEET

## Gold (III) Nitrate Solution

### 10. Stability And Reactivity

**Stability:** Stable

**Hazardous Polymerization:** Will not occur

#### Conditions To Avoid (Stability)

#### Incompatible Materials

REDUCING AGENTS, EASILY OXIDIZED MATERIALS, INORGANICS, ALKALI METALS, FLAMMABLES  
ALKALINE EARTH METALS AIR, ORGANIC MATERIALS, FINELY POWDERED METALS.

#### Hazardous Decomposition Products

Nitrous oxide (NO<sub>x</sub>) gases

#### Conditions To Avoid (Polymerization)

Polymerization will not occur.

### 11. Toxicological Information

#### Acute Studies

MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER  
RESPIRATORY TRACT, EYES AND SKIN.  
INHALATION MAY RESULT IN SPASM, INFLAMMATION AND EDEMA OF THE  
LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.  
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,  
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND  
VOMITING.

#### Eye Effects

#### Chronic/Carcinogenicity

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

### 12. Ecological Information

#### Acute Toxicity - Fish And Invertebrates

Nitric Acid - 1DLH = 100 ppm

#### Other Environmental Information

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the emergency planning and community right-to-know act of 1986 (40 CFR 372):

| CAS#      | Chemical Name | Percent of Weight |
|-----------|---------------|-------------------|
| 7697-32-2 | Nitric Acid   | < 30              |

"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".

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### 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

### 14. Transport Information

#### Proper Shipping Name

Oxidizing Liquid, Corrosive, N.O.S (contains nitric acid)  
(gold (III) nitrate solution)

#### Hazard Class

5.1

#### Secondary Hazard Class

NA

#### DOT Identification Number

3098

#### DOT Shipping Label

Oxidizing Agent, Corrosive

#### Freight Class

NA

#### Packaging Exceptions

Refer to DOT 49 CFR

#### Packaging Requirements

PG II

#### Additional Shipping Paper Description

Same as 49 CFR (DOT) regulation. Refer to IATA regulations for further shipping regulations.

#### DOT (Pictograms)



### 15. Regulatory Information

#### SARA Section 313 Notification

THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS -NITRATE COMPOUNDS (WATER DISSOCIABLE).

### 16. Other Information

#### NFPA Rating

Health: 3

Fire: 0

Reactivity: 0

Other: OX

# MATERIAL SAFETY DATA SHEET

## Gold (III) Nitrate Solution

### 16. Other Information - Continued

#### HMIS Rating

Health: 2

Fire: 0

Reactivity: 1

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: 09/07/2007

### 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 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.

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