


MATERIAL SAFETY DATA SHEET

Gold (III) Nitrate Solution

NFPA 	HMIS <table border="1"><tr><td>HEALTH</td><td style="text-align: center;">2</td></tr><tr><td>FLAMMABILITY</td><td style="text-align: center;">0</td></tr><tr><td>REACTIVITY</td><td style="text-align: center;">1</td></tr><tr><td>PERSONAL PROTECTION</td><td style="text-align: center;">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

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
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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
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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_{Au}(NO₃)₄ 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

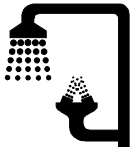
May have corrosive and irritating effects on the gastrointestinal tract.

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.

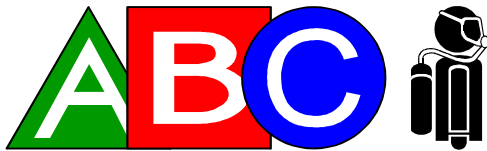
Inhalation

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

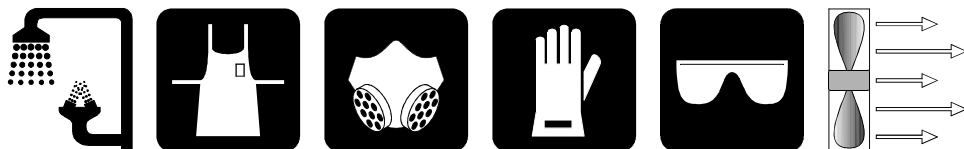
MATERIAL SAFETY DATA SHEET

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/m³ TWA 25 ppm IDLH
OSHA -Final PELs - 2 ppm TWA; 5 mg/m³ 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_x) 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".

MATERIAL SAFETY DATA SHEET

Gold (III) Nitrate Solution

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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