

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: Aluminium standard metal solution 1000 ppm in nitric acid
Catalog Numbers: J/8000/05, J/8000/08, J/8000/15, J/8206/08
Synonyms: None.
Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#: 7429-90-5
Chemical Name: Aluminum
%: 0.1
EINECS#: 231-072-3
Hazard Symbols: F
Risk Phrases: 15 17

CAS#: 7697-37-2
Chemical Name: Nitric acid
%: <10
EINECS#: 231-714-2
Hazard Symbols:
Risk Phrases:

CAS#: 7732-18-5
Chemical Name: Water
%: >89.9
EINECS#: 231-791-2
Hazard Symbols:
Risk Phrases:

Text for R-phrases: see Section 16

Hazard Symbols: C



Risk Phrases: 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! Causes eye and skin burns. Causes digestive and respiratory tract burns. Corrosive to metal.
Target Organs: Lungs, eyes, skin, mucous membranes.

Potential Health Effects

- Eye:** Causes eye burns. May cause irreversible eye injury.
- Skin:** Causes skin burns. Concentrated nitric acid dyes human skin yellow on contact.
- Ingestion:** Causes gastrointestinal tract burns.
- Inhalation:** May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.
- Chronic:** Exposure to high concentrations of nitric acid vapor may cause pneumonitis and pulmonary edema which may be fatal. Symptoms may or may not be delayed. Continued exposure to the vapor & mist of nitric acid may result in a chronic bronchitis, & more severe exposure results in a chemical pneumonitis. The vapor & mists of nitric acid may erode the teeth, particularly affecting the canines & incisors.

Section 4 - First Aid Measures

- Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.
- Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
- Ingestion:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

- General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. May react with metal surfaces to form flammable and explosive hydrogen gas. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Concentrated nitric acid is a strong oxidizer and contact with other material may cause fire.
- Extinguishing Media:** Use extinguishing media most appropriate for the surrounding fire.
- Autoignition** Not available.
- Temperature:**
- Flash Point:** Not applicable.
- Explosion** Not available
- Limits: Lower:**
- Explosion** Not available
- Limits: Upper:**
- NFPA Rating:** health: 3; flammability: 0; instability: 0;

Section 6 - Accidental Release Measures

- General Information:** Use proper personal protective equipment as indicated in Section 8.
- Spills/Leaks:** Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Provide ventilation. Approach spill from upwind. Use water spray to cool and disperse vapors and protect personnel.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use

with adequate ventilation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Do not use with metal spatula or other metal items.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from metals. Store away from alkalies.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Aluminum mg/m3 TWA	10 mg/m3 (metal dust)	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	15 (total dust); 5 mg/m3 TWA (respirable fraction)
Nitric acid TWA	2 ppm; 4 ppm STEL	2 ppm TWA; 5 mg/m3 TWA 25 ppm IDLH	2 ppm
Water listed	none listed	none listed	none

OSHA Vacated PELs: Aluminum: 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) Nitric acid: 2 ppm TWA; 5 mg/m3 TWA Water: None listed

Personal Protective Equipment

- Eyes:** Wear chemical splash goggles.
- Skin:** Wear appropriate protective gloves to prevent skin exposure.
- Clothing:** Wear appropriate protective clothing to prevent skin exposure.
- Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: colorless
Odor: Not available
pH: Not available

Vapor Pressure: Not available
Vapor Density: Not available
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: Not available
Freezing/Melting Point: Not available
Decomposition Temperature: Not available
Solubility in water: Soluble
Specific Gravity/Density: Not available.
Molecular Formula: Solution
Molecular Weight: 0

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. The yellow color is due to release of nitrogen dioxide on exposure to light.

Conditions to Avoid: High temperatures, light, confined spaces.

Incompatibilities with Other Materials: Metals, reducing agents, strong bases.

Hazardous Decomposition Products: Nitrogen oxides.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 7429-90-5: BD0330000 BD1020000
CAS# 7697-37-2: QU5775000 QU5900000
CAS# 7732-18-5: ZC0110000

LD50/LC50: RTECS: Not available. RTECS:
CAS# 7697-37-2: Inhalation, rat: LC50 = 260 mg/m³/30M;
Inhalation, rat: LC50 = 130 mg/m³/4H;
Inhalation, rat: LC50 = 67 ppm(NO₂)/4H;
.
RTECS:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;
.

Carcinogenicity: Aluminum - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Nitric acid - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Not available
Teratogenicity: No information found
Reproductive: Not available
Neurotoxicity: Not available
Mutagenicity: Not available
Other: Not available

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT

Shipping Name: Nitric Acid Solution
Hazard Class: 8
UN Number: UN2031
Packing Group: II
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:
USA RQ: CAS# 7697-37-2: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 7429-90-5 is listed on the TSCA Inventory.
CAS# 7697-37-2 is listed on the TSCA Inventory.
CAS# 7732-18-5 is listed on the TSCA Inventory.

Health & Safety Reporting List	None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules Section 12b	None of the chemicals in this product are under a Chemical Test Rule.
TSCA Significant New Use Rule	None of the chemicals are listed under TSCA Section 12b.
CERCLA Hazardous Substances and corresponding RQs	None of the chemicals in this material have a SNUR under TSCA.
SARA Section 302 Extremely Hazardous Substances	CAS# 7697-37-2: 1000 lb final RQ; 454 kg final RQ
SARA Codes	CAS# 7697-37-2: 1000 lb TPQ
Section 313	CAS # 7429-90-5: acute, chronic. CAS # 7697-37-2: acute, chronic, flammable.
Clean Air Act:	This chemical is not at a high enough concentration to be reportable under Section 313. This material contains Nitric acid (CAS# 7697-37-2, 10%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.
Clean Water Act:	This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.
OSHA: STATE	CAS# 7697-37-2 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
California Prop 65	Aluminum can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. Nitric acid can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level: European/International Regulations	None of the chemicals in this product are listed.

European Labeling in Accordance with EC Directives

Hazard Symbols: C

Risk Phrases:

R 34 Causes burns.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36 Wear suitable protective clothing.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7429-90-5: 0

CAS# 7697-37-2: 1

CAS# 7732-18-5: Not available

Canada

CAS# 7429-90-5 is listed on Canada's DSL List

CAS# 7697-37-2 is listed on Canada's DSL List

CAS# 7732-18-5 is listed on Canada's DSL List

Canadian WHMIS Classifications: E

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 7429-90-5 is listed on Canada's Ingredient Disclosure List

CAS# 7697-37-2 is listed on Canada's Ingredient Disclosure List

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: 12/12/1997

Revision #6 Date 3/22/2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.