



MATERIAL SAFETY DATA SHEET

Manganese standard metal solution in approx. M nitric acid

Section 1 - Chemical Product and Company Identification

MSDS Name: Manganese standard metal solution in approx. M nitric acid
Catalog Numbers: J/8045/05, J/8045/08, J/8045/15, J/8290/05, J/8291/08
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#	Chemical Name:	%	EINECS#	Hazard Symbols:	Risk Phrases:
7439-96-5	Manganese	<1	231-105-1		
7697-37-2	Nitric acid	6.3	231-714-2		
7732-18-5	Water	93	231-791-2		

Text for R-phrases: see Section 16

Hazard Symbols: C



Risk Phrases: 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Causes burns.

Potential Health Effects

Eye: Causes eye burns.

Skin: Causes skin burns.

Ingestion: May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns.

Inhalation: May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung 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: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep

eyes closed.

Skin: Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. 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. Use water spray to keep fire-exposed containers cool. Substance is noncombustible.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Neutralize spill with sodium bicarbonate. Use water spray to disperse the gas/vapor.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get on skin or in eyes. Do not ingest or inhale. Discard contaminated shoes.

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

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

CAS# 7439-96-5:

United Kingdom, WEL - TWA: 0.5 mg/m³ TWA United Kingdom, WEL - STEL: 1.5 mg/m³ STEL

United States OSHA: ; 5 mg/m³ Ceiling (fume)

Belgium - TWA: 0.2 mg/m³ VLE

France - VME: 1 mg/m³ VME (fume, as Mn)

Germany: 0.5 mg/m³ TWA (inhalable fraction)

Japan: 0.3 mg/m³ OEL

Malaysia: 0.2 mg/m³ TWA

Netherlands: 3 mg/m³ STEL Netherlands: 1 mg/m³ MAC

Russia: 0.2 mg/m³ TWA (fumes, share to 20%); 0.1 mg/m³ TWA (fumes, share to 30%)

Spain: 0.2 mg/m³ VLA-ED

CAS# 7697-37-2:

United Kingdom, WEL - TWA: 2 ppm TWA; 5.2 mg/m³ TWA United Kingdom, WEL - STEL: 4 ppm STEL; 10 mg/m³ STEL

United States OSHA: 2 ppm TWA; 5 mg/m³ TWA
Belgium - TWA: 2 ppm VLE; 5.3 mg/m³ VLE Belgium - STEL: 4 ppm VLE; 10 mg/m³ VLE
France - VME: 2 ppm VME; 5 mg/m³ VME France - VLE: 4 ppm VLE; 10 mg/m³ VLE
Germany: 2 ppm TWA; 5.2 mg/m³ TWA
Japan: 2 ppm OEL; 5.2 mg/m³ OEL
Malaysia: 2 ppm TWA; 5.2 mg/m³ TWA
Netherlands: 0.5 ppm STEL; 1.3 mg/m³ STEL
Russia: 2 mg/m³ TWA
Spain: 2 ppm VLA-ED; 5.2 mg/m³ VLA-ED Spain: 4 ppm VLA-EC; 10 mg/m³ VLA-EC

CAS# 7732-18-5:

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

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: Not available

Autoignition Temperature: Not available.

Flash Point: Not available

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

Decomposition Temperature: Not available

Solubility in water: Soluble in water.

Specific Gravity/Density: 1.0

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.

Conditions to Avoid: Confined spaces.

Incompatibilities with Other Materials Not available

Hazardous Decomposition Products Nitrogen oxides.

Hazardous Polymerization Has not been reported.

Section 11 - Toxicological Information

- RTECS#:** CAS# 7439-96-5: 009275000
CAS# 7697-37-2: QU5775000 QU5900000
CAS# 7732-18-5: ZC0110000
- LD50/LC50:** RTECS:
CAS# 7439-96-5: Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Oral, rat: LD50 = 9 gm/kg;
. .
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:** Manganese - 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.
- Other:** See actual entry in RTECS for complete information.

Section 12 - Ecological Information

- Ecotoxicity:** Not available

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	Nitric Acid Solution	Nitric Acid Solution	Nitric Acid Solution
Hazard Class:	8	8	8
UN Number:	2031	2031	2031
Packing Group:	II	II	II

USA RQ: CAS# 7697-37-2: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

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# 7439-96-5: Not available

CAS# 7697-37-2: 1

CAS# 7732-18-5: Not available

Canada

CAS# 7439-96-5 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

US Federal

TSCA

CAS# 7439-96-5 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.

Section 16 - Other Information

Text for R-phrases from Section 2

MSDS Creation Date: 12/12/1997

Revision #3 Date 10/05/2004

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.
