

Material Safety Data Sheet

Manganese, reference standard solution 1000 ppm

ACC# 40116

Section 1 - Chemical Product and Company Identification

MSDS Name: Manganese, reference standard solution 1000 ppm**Catalog Numbers:** SM81-100, SM81-500**Synonyms:** None.**Company Identification:**Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	97.03	231-191-2
7697-37-2	Nitric acid	2.45	231-714-2
17141-63-8	Manganese nitrate hexahydrate	0.52	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid.

Danger! May cause severe eye irritation and possible injury. Causes skin and respiratory tract<https://fscimage.fishersci.com/msds/40116.htm>

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irritation. Corrosive to metal.

Target Organs: Eyes.**Potential Health Effects****Eye:** May cause severe eye irritation. May cause irreversible eye injury.**Skin:** Causes skin irritation.**Ingestion:** May cause irritation of the digestive tract.**Inhalation:** Causes respiratory tract irritation.**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

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.**Skin:** Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.**Ingestion:** 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:** Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal<https://fscimage.fishersci.com/msds/40116.htm>

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decomposition products.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.**Flash Point:** Not applicable.**Autoignition Temperature:** Not applicable.**Explosion Limits, Lower:** Not available.**Upper:** Not available.**NFPA Rating:** (estimated) 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 with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

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

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: 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
Water	none listed	none listed	none listed
		2 ppm TWA; 5 mg/m ³ TWA 25 ppm	

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	Nitric acid	2 ppm TWA; 4 ppm STEL	IDLH	2 ppm TWA; 5 mg/m ³ TWA
Manganese nitrate hexahydrate	0.2 mg/m ³ TWA (as Mn) (listed under Manganese, inorganic compounds).	1 mg/m ³ TWA (as Mn) (listed under Manganese compounds, n.o.s.); 500 mg/m ³ IDLH (as Mn) (listed under Manganese compounds, n.o.s.);	5 mg/m ³ Ceiling (as Mn) (listed under Manganese compounds, n.o.s.);	

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Nitric acid: 2 ppm TWA; 5 mg/m³ TWA Manganese nitrate hexahydrate: No OSHA Vacated PELs are listed for this chemical.**Personal Protective Equipment****Eyes:** Wear chemical splash goggles.**Skin:** Wear appropriate protective gloves and clothing to prevent skin exposure.**Clothing:** Wear appropriate protective clothing to prevent skin exposure.**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid**Appearance:** colorless**Odor:** none reported**pH:** Not available.**Vapor Pressure:** 14 mm Hg @20C**Vapor Density:** 0.7**Evaporation Rate:** >1 (ether=1)**Viscosity:** Not available.**Boiling Point:** > 212 deg F**Freezing/Melting Point:** Not available.**Decomposition Temperature:** Not available.**Solubility:** Completely soluble in water.**Specific Gravity/Density:** > 1.0**Molecular Formula:** Mixture<https://fscimage.fishersci.com/msds/40116.htm>

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Molecular Weight: Not available

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.**Conditions to Avoid:** Excess heat.**Incompatibilities with Other Materials:** Nitric acid reacts with over 150 chemical combinations. Refer to NFPA Fire Protection Guide for specifics. Reacts explosively with organic materials and combustibles.**Hazardous Decomposition Products:** Irritating and toxic fumes and gases.**Hazardous Polymerization:** Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 7732-18-5: ZC0110000

CAS# 7697-37-2: QU5775000; QU5900000

CAS# 17141-63-8 unlisted.

LD50/LC50:

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg;

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;

CAS# 17141-63-8:

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Carcinogenicity:

CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 7697-37-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 17141-63-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.**Teratogenicity:** Fetotoxicity; Stunted fetus, Oral-rat TDLo=21150 mg/kg (female 1-21D post).**Reproductive Effects:** No information available.**Mutagenicity:** No information available.**Neurotoxicity:** No information available.**Other Studies:**

Section 12 - Ecological Information

No information 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	Canada TDG
Shipping Name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	No information available.
Hazard Class:	8	

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UN Number:	UN3264
Packing Group:	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7732-18-5 is listed on the TSCA inventory.
 CAS# 7697-37-2 is listed on the TSCA inventory.
 CAS# 17141-63-8 is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

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

SARA Section 302 Extremely Hazardous Substances

CAS# 7697-37-2: 1000 lb TPQ

SARA Codes

CAS # 7697-37-2: immediate, delayed, fire.

Section 313

This material contains Nitric acid (CAS# 7697-37-2, 2.45%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Manganese nitrate hexahydrate (listed as Manganese compounds, n.o.s.), 0.52%, (CAS# 17141-63-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

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Clean Air Act:

CAS# 17141-63-8 (listed as Manganese compounds, n.o.s.) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

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.

OSHA:

CAS# 7697-37-2 is considered highly hazardous by OSHA.

STATE

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 7697-37-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 17141-63-8 can be found on the following state right to know lists: California, (listed as Manganese compounds, n.o.s.), Pennsylvania, (listed as Manganese compounds, n.o.s.), Minnesota, (listed as Manganese compounds, n.o.s.).

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI

Risk Phrases:

R 37/38 Irritating to respiratory system and skin.

R 41 Risk of serious damage to eyes.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of

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water and seek medical advice.
 S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.

CAS# 7697-37-2: 1

CAS# 17141-63-8: No information available.

Canada - DSL/NDSL

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

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

Canada - WHMIS

This product has a WHMIS classification of E, D2B.

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.

Canadian Ingredient Disclosure List

CAS# 7697-37-2 is listed on the Canadian Ingredient Disclosure List.

CAS# 17141-63-8 (listed as Manganese compounds, n.o.s.) is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997

Revision #4 Date: 10/03/2005

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 Fisher 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 Fisher has been advised of the possibility of such damages.

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