

# Material Safety Data Sheet

## Mercury(II) nitrate monohydrate

ACC# 13831

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Mercury(II) nitrate monohydrate**Catalog Numbers:** AC213140000, AC213140500, AC213142500, AC423940000, AC423941000, S75157, S80076, M168-100, M168-500**Synonyms:** Nitric acid, mercury(2+) salt, monohydrate; Mercuric nitrate monohydrate.**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
7783-34-8	Mercury(II) nitrate monohydrate	>98	unlisted

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white to pale yellow solid.

**Danger!** Causes digestive and respiratory tract burns. Causes eye and skin burns. Oxidizer. May cause central nervous system effects. May cause kidney damage. May cause methemoglobinemia. May cause reproductive and fetal effects.

**Target Organs:** Kidneys, central nervous system, blood forming organs.

#### Potential Health Effects

**Eye:** Contact may cause severe eye irritation and possible eye damage.

**Skin:** Causes skin burns. May be absorbed through the skin in harmful amounts.

**Ingestion:** Causes gastrointestinal tract burns. May cause kidney damage. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, and death. Can cause nervous system damage. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored blood. Effects may be delayed.

**Inhalation:** May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient

oxygenation of the blood), convulsions, tachycardia, dyspnea (labored breathing), and death. May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. May cause effects similar to those described for ingestion.

**Chronic:** May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death. May cause reproductive and fetal effects.

## Section 4 - First Aid Measures

**Eyes:** Immediately 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. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood.

**Antidote:** The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel. Methylene blue, alone or in combination with oxygen is indicated as a treatment in nitrite induced methemoglobinemia.

## 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. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Oxidizer. Greatly increases the burning rate of combustible materials. Some oxidizers may react explosively with hydrocarbons(fuel). Containers may explode when heated.

**Extinguishing Media:** Use water only! Cool containers with flooding quantities of water until well after fire is out. Do NOT use dry chemicals, CO<sub>2</sub>, Halon or foams.

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:**Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 1; Instability: 1; Special Hazard: OX

## Section 6 - Accidental Release Measures

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

**Spills/Leaks:** Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not ingest or inhale. Store protected from light. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light.

## 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 explosion-proof ventilation to keep airborne levels to acceptable levels.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Mercury(II) nitrate monohydrate	0.025 mg/m <sup>3</sup> TWA (as Hg) (listed under Mercury inorganic compounds).Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Mercury inorganic compounds).	0.05 mg/m <sup>3</sup> TWA (vapor, except organo alkyls, as Hg) (listed under Mercury compounds).10 mg/m <sup>3</sup> IDLH (as Hg, except organo(alkyl) compounds) (listed under Mercury compounds).	none listed
Mercuric nitrate	0.025 mg/m <sup>3</sup> TWA (as Hg) (listed under Mercury inorganic compounds).Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Mercury inorganic compounds).	none listed	none listed

**OSHA Vacated PELs:** Mercury(II) nitrate monohydrate: No OSHA Vacated PELs are listed for this chemical. Mercuric nitrate: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate gloves 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:** Solid  
**Appearance:** white to pale yellow  
**Odor:** odor of nitric acid  
**pH:** Not applicable.  
**Vapor Pressure:** Not applicable.  
**Vapor Density:** Not available.  
**Evaporation Rate:** Not applicable.  
**Viscosity:** Not applicable.  
**Boiling Point:** Not available.  
**Freezing/Melting Point:** 77 - 79 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Soluble in water.  
**Specific Gravity/Density:** 4.3  
**Molecular Formula:**  $\text{Hg}(\text{NO}_3)_2 \cdot \text{H}_2\text{O}$   
**Molecular Weight:** 324.60

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures. May discolor on exposure to light. Deliquescent (tending to absorb atmospheric water vapor and become liquid).  
**Conditions to Avoid:** High temperatures, light.  
**Incompatibilities with Other Materials:** Reducing agents, cyanides, thiocyanates, isothiocyanates, hypophosphites.  
**Hazardous Decomposition Products:** Nitrogen oxides, mercury/mercury oxides.  
**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**  
**CAS#** 7783-34-8 unlisted.  
**CAS#** 10045-94-0: OW8225000  
**LD50/LC50:**  
Not available.

CAS# 10045-94-0:  
Oral, mouse: LD50 = 25 mg/kg;  
Oral, rat: LD50 = 26 mg/kg;  
Skin, rat: LD50 = 75 mg/kg;

**Carcinogenicity:**  
CAS# 7783-34-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.  
CAS# 10045-94-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.  
**Teratogenicity:** No information available.  
**Reproductive Effects:** No information available.  
**Mutagenicity:** No data available.  
**Neurotoxicity:** No information available.  
**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.  
**Environmental:** No information available.  
**Physical:** No information available.  
**Other:** Destroys plant lice.

## 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
<b>Shipping Name:</b>	MERCURIC NITRATE	MERCURIC NITRATE
<b>Hazard Class:</b>	6.1	6.1
<b>UN Number:</b>	UN1625	UN1625
<b>Packing Group:</b>	II	II

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 7783-34-8 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 10045-94-0 is listed on the TSCA inventory.

#### 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# 10045-94-0: 10 lb final RQ; 4.54 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

**SARA Codes**

CAS # 7783-34-8: immediate, delayed, fire.

CAS # 10045-94-0: immediate, delayed, fire.

**Section 313**

This material contains Mercury(II) nitrate monohydrate (listed as Mercury compounds), >98%, (CAS# 7783-34-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Mercuric nitrate (listed as Water Dissociable Nitrate Compounds), -%, (CAS# 10045-94-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

CAS# 7783-34-8 (listed as Mercury compounds) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

CAS# 10045-94-0 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 7783-34-8 is listed as a Toxic Pollutant under the Clean Water Act.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 7783-34-8 can be found on the following state right to know lists: California, (listed as Mercury compounds), New Jersey, (listed as Mercury compounds), New Jersey, (listed as Mercury inorganic compounds), Pennsylvania, (listed as Mercury compounds).

CAS# 10045-94-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

**California Prop 65**

WARNING: This product contains Mercury(II) nitrate monohydrate, listed as 'Mercury compounds', a chemical known to the state of California to cause developmental reproductive toxicity.

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:**

T+ N

**Risk Phrases:**

R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

R 33 Danger of cumulative effects.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety Phrases:**

- S 13 Keep away from food, drink and animal feeding stuffs.  
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S 60 This material and its container must be disposed of as hazardous waste.  
S 28A After contact with skin, wash immediately with plenty of water.  
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

**WGK (Water Danger/Protection)**

CAS# 7783-34-8: No information available.

CAS# 10045-94-0: 3

**Canada - DSL/NDSL**

CAS# 10045-94-0 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of C, D1A.

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# 7783-34-8 (listed as Mercury compounds) is listed on the Canadian Ingredient Disclosure List.

CAS# 10045-94-0 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 4/29/1999

**Revision #4 Date:** 9/26/2007

*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.*