

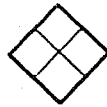


**SECTION 1. MATERIAL IDENTIFICATION** 19

**MATERIAL NAME:** MERCURY (II) NITRATE

**OTHER DESIGNATIONS:** Mercuric Nitrate; Nitric Acid, Mercury (II) Salt; Mercury Pernitrate;  $Hg(NO_3)_2$ ; CAS #10045-94-0

**SUPPLIERS:** Available from several suppliers, including:  
 Aldrich Chemical Co., Inc., PO Box 355, Milwaukee, WI 53201; Telephone: 800-558-9160

**HMIS**  **R 0**  
**H: 3** **I 3**  
**F: 0** **S 2**  
**R: 0** **K 0**  
**PPE: \*** Not Found  
 \* See Sect. 8

**SECTION 2. INGREDIENTS AND HAZARDS** **HAZARD DATA**

	%	
<p>MERCURIC NITRATE, <math>Hg(NO_3)_2</math></p> <p>* Current (1985-86) ACGIH TLV for inorganic mercury compounds.                      The OSHA PEL for "mercury" is 0.1 mg/m<sup>3</sup> as a ceiling concentration.</p> <p>In its 1973 Criteria Document on inorganic mercury, NIOSH recommended a PEL of 0.05 mg Hg/m<sup>3</sup> as an 8-hr TWA for all inorganic mercury compounds.</p>	>99	<p>8-hr TWA TLV:                      0.1 mg/m<sup>3</sup>, as Hg*</p> <p>-----                      Oral, Rat, LD<sub>50</sub>: 51.4 mg/kg</p> <p>-----                      Oral, Mouse, LD<sub>50</sub>: 29.1 mg/kg</p> <p>-----</p>

**SECTION 3. PHYSICAL DATA**

The following physical data refers to the properties of hemihydrated mercuric nitrate,  $Hg(NO_3)_2 \cdot 1/2H_2O$ :

Melting Point ... 174.2°F (79°C)  
 Boiling Point ... Decomposes  
 Specific Gravity ... 4.3  
 Solubility in Water ... Soluble  
 Molecular Weight ... 333.61

Appearance and odor: White or yellowish deliquescent crystals/powder. No odor.

**SECTION 4. FIRE AND EXPLOSION DATA** **LOWER** **UPPER**

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air		
NA	NA	NA	--	--

**EXTINGUISHING MEDIA:** Mercuric nitrate is an oxidizer and can promote and accelerate combustion. Flood fires with water (if water is a suitable extinguisher for the burning material). Prevent runoff to sewers and waterways.

Toxic fumes may be evolved under fire conditions.

Fire fighters should wear self-contained breathing apparatus and full protective gear.

**SECTION 5. REACTIVITY DATA**

Mercuric nitrate is stable at room temperature. It does not polymerize. Contact of aqueous solutions with acetylene, ethanol, or phosphine can result in the formation of explosive products that are sensitive to heat, friction, and/or impact. It is violently reduced to mercury by phosphinic acid (hydrophosphorous acid). It can also be incompatible with petroleum, hydrocarbons, and, as an oxidizer, reducing agents and flammable and combustible materials.

Thermal decomposition yields mercury oxide and oxides of nitrogen.

**SECTION 6. HEALTH HAZARD INFORMATION | TLV**

Mercuric nitrate is toxic by inhalation and ingestion. Mercuric salts are also readily absorbed through the skin. Overexposure because of acute inhalation can irritate the mucous membrane of the respiratory tract and cause abdominal pain, vomiting, diarrhea, and inflammation of the gums (gingivitis) and mouth (stomatitis). Symptoms of chronic toxicity include psychic and emotional disturbances (excitability, anxiety, depression, indecision, insomnia), nervous system effects (muscular tremors, incoordination), gingivitis, stomatitis, and kidney damage. Ingestion can severely irritate the GI tract and cause difficulty in swallowing, nausea, vomiting, abdominal pain, diarrhea, shock, and death. Skin and eye contact can cause irritation.

Mercuric nitrate has not been identified as a known or suspected carcinogen by the NTP, IARC, or OSHA.

**FIRST AID:** **EYE CONTACT:** Immediately flush eyes, including under the eyelids, with large amounts of running water. Get prompt medical attention. **SKIN CONTACT:** Remove contaminated clothing. Thoroughly wash contaminated area with soap and water. Seek medical attention if irritation or other symptoms develop. **INHALATION:** Remove from exposure. Restore/aid breathing as required. Get prompt medical attention. **INGESTION:** Immediately give victim a large quantity of water to drink and induce vomiting. Repeat. Keep victim warm and at rest. Get medical help immediately.\* (Do not give anything by mouth or induce vomiting if victim is unconscious.)

\* GET MEDICAL HELP = In plant, paramedic, community.

**SECTION 7. SPILL, LEAK, AND DISPOSAL PROCEDURES**

Notify safety/environmental personnel of spills. Ventilate spill area. Cleanup personnel should wear respiratory protective equipment, gloves, goggles, and protective clothing. Carefully scoop up spilled material into a suitable container with cover. Minimize dust generation throughout cleanup process. Wash area with dilute calcium sulfide solution. Do not allow release of mercuric nitrate into drains or waterways. Reportable spill quantity = 10 lbs. (4.54 Kg) (40 CFR 117.3).

**DISPOSAL:** Reclaim material when possible. Unsalvageable material requires disposal as a hazardous waste. Do not allow release of solutions without prior treatment (such as precipitation as the sulfide) to remove mercury to allowable levels. Contact supplier or licensed chemical waste disposal contractor for treatment/disposal instruction. Follow Federal, state and local regulations.

Applicable EPA Hazardous Waste No.: D001 (ignitable, 40 CFR 261.21); D009 (EP Toxic, 40 CFR 261.24).

**SECTION 8. SPECIAL PROTECTION INFORMATION**

Provide general and local exhaust ventilation to meet TLV. NIOSH-approved respirators should be worn during nonroutine operations and whenever the TLV is exceeded. NIOSH recommends a gas mask with full facepiece, high-efficiency filter, and canister containing iodine-impregnated charcoal for concentrations up to 5 mg/m<sup>3</sup>. Above 5 mg/m<sup>3</sup>, a positive-pressure supplied-air respirator or a self-contained breathing apparatus are recommended. Respirator usage must be in accordance with OSHA requirements (29 CFR 1910.134).

Wear chemical safety goggles, gloves, and protective clothing (aprons, coveralls, etc.) when handling this material. Launder contaminated clothing before reuse.

Eyewash stations, safety showers, and washing facilities should be readily accessible to workers handling this material. Contact lenses pose a special hazard; soft lenses may absorb and all lenses concentrate irritants.

**SECTION 9. SPECIAL PRECAUTIONS AND COMMENTS**

Store in tightly closed containers in a cool, dry location away from incompatibles. Protect containers from physical damage. Maintain good housekeeping practices to prevent accumulation of dust. Use techniques that minimize dust generation. Clean up spills promptly. Employees should be trained in safe handling procedure for this toxic material. Workers should follow good personal hygiene practices and wash thoroughly after handling, before eating, drinking, smoking, and after the workshift. Do not eat, drink, or smoke in the work area. Promptly remove contaminated clothing and wash any area of the skin that comes in contact with this material. Preplacement and periodic medical exams of exposed workers are recommended, with emphasis on CNS (central nervous system) involvement, kidney dysfunction, and other symptoms of mercury toxicity. Determining levels of urinary mercury is often used as a measure of mercury absorption. Levels of 0.1 to 0.5 mg Hg/L are considered significant.

**DOT Classification:** Oxidizer **DOT ID No.:** UN1625 **LABEL:** Oxidizer (49 CFR 172.101)  
**Data Source(s) Code:** 2, 4, 5, 6, 12, 14, 19, 25, 43, 44, 49, 55, 56, 58, 60, 61, 62, 82, 84. CV

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Approvals

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Indust. Hygiene/Safety

*JW 6/86*

Medical Review

*[Signature]* July 86