

## MERCUROUS NITRATE

## Material Safety Data Sheet

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Mallinckrodt Chemical Inc.

P.O. Box 800

Paris, Kentucky 40362

Emergency Telephone Number  
314-539-1600

Effective Date: 04-06-89 Supersedes 08-27-85

## PRODUCT IDENTIFICATION:

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Synonyms: Nitric acid, mercury (1+) salt, monohydrate; mercurous nitrate  
mononitrate; mercury protonitrate

Formula CAS No.: 7782-86-7 (Hydrated)

Molecular Weight: 280.61

TSCA CAS No.: 10415-75-5 (Anhydrous)

Hazardous Ingredients: Mercurous nitrate

Chemical Formula: HgNO3 H2O

## PRECAUTIONARY MEASURES

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DANGER! MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH  
SKIN. CAUSES IRRITATION. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY  
CAUSE FIRE. MERCURY COMPOUNDS AFFECT THE KIDNEYS AND CENTRAL NERVOUS SYSTEM.

Avoid breathing dust.

Avoid contact with eyes, skin and clothing.

Keep container closed.

Wash thoroughly after handling.

Remove and wash contaminated clothing promptly.

## EMERGENCY FIRST AID

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If swallowed, induce vomiting immediately by giving two glasses of water, or  
milk if available and sticking finger down throat. Never give anything by mouth  
to an unconscious person. If inhaled, remove to fresh air. If not breathing,  
give artificial respiration. If breathing is difficult, give oxygen. In case  
of contact, immediately flush eyes or skin with plenty of water for at least 15  
minutes. In all cases call a physician.

SEE SECTION 5.

## Physical Data

## SECTION 1

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Appearance: Colorless crystals.

Odor: Odorless or slight nitric acid odor.

Solubility: Soluble in 13 parts water containing 1% nitric acid.

Boiling Point: Decomposes.

Vapor Density (Air=1): No information  
found.Melting Point: 70 C (158 F)  
(Dihydrate).Vapor Pressure (mm Hg): No information  
found.

Density: 4.78 (Dihydrate)

Evaporation Rate: No information  
found.

## Fire and Explosion

## SECTION 2

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Information-----  
Fire:This oxidizing material can increase the  
flammability of adjacent combustible materials.

Explosion:

Strong oxidants may explode when shocked, or if

exposed to heat, flame, or friction. Also may act as initiation source for dust or vapor explosions.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Special Information: Wear full protective clothing and breathing equipment for high-intensity fire or potential explosion conditions. Substance may react violently with some organic compounds or reducing agents.

Reactivity Data  
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Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products: Emits volatile mercury or mercury compounds and nitrous oxides when heated to decomposition.

Hazardous Polymerization: This substance does not polymerize.

Incompatibilities: Phosphorus, ammonia.

Leak/Spill Disposal Information      SECTION 4  
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Ventilate the area of the leak or spill. Clean-up personnel should wear respiratory equipment for toxic dusts. Collect by scooping, mopping or wet vacuuming as appropriate. Waste may be transferred to a closed, preferably metal, container and sent to a RCRA-approved waste disposal facility. Do not flush to sewer.

Reportable Quantity (RQ) (CWA/CERCLA) : 10 lbs.

Ensure compliance with local, state and federal regulations.

Health Hazard Information      SECTION 5  
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A. Exposure/Health Effects  
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Inhalation: Toxic, possibly corrosive due to action of combined nitrous acid and mercury compounds formed by hydrolysis on surfaces of the respiratory tract. Sore throat, coughing, shortness of breath and headaches are symptoms of inhalation poisoning.

Ingestion: Toxic, fatal dose for soluble mercury compounds reported to be 1 gm. Symptoms of mercury poisoning are a metallic taste, sore throat, abdominal pain, vomiting and serious diarrhea. Decreased urinary output may appear in 1-14 days with possible eventual death from kidney failure.

Skin Contact: Irritant, possible corrosive on prolonged contact. Mercury may be absorbed through the skin and nitrous acid can form via hydrolysis on moist skin. Soreness, redness and possible destruction of skin can occur with mercury poisoning symptoms in extreme cases.

Eye Contact: Irritant, possibly corrosive to eye tissues on prolonged contact.

Chronic Exposure: Chronic exposure through any route can produce central nervous system damage. Symptoms may include muscle tremors, personality and behavior changes, metallic taste, loosening of the teeth, digestive

disorders and skin rashes.

#### Aggravation of

Pre-existing Conditions: Persons with nervous disorders, or impaired kidney or respiratory function, or a history of allergies or a known sensitization to mercury may be more susceptible to the effects of the substance.

#### B. FIRST AID

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, induce vomiting immediately by giving two glasses of water, or milk if available and sticking finger down throat. Call a physician immediately. Never give anything by mouth to an unconscious person.

Skin Exposure: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician.

Eye Exposure: Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

#### C. TOXICITY

(RTECS, 1986)

Oral rat LD50: 170 mg/kg (Anhydrous).

#### Occupational Control Measures

#### SECTION 6

Airborne Exposure Limits: For Mercury Compounds: -OSHA Permissible Exposure Limit (PEL): 0.1mg/m<sup>3</sup> Ceiling as Hg skin  
-ACGIH Threshold Limit Value (TLV): 0.1 mg/m<sup>3</sup> (TWA) as Hg skin

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved) If the TLV is exceeded, a dust/mist respirator with chemical goggles may be worn, in general, up to ten times the TLV. Consult respirator supplier for limitations. Alternatively, a supplied air full facepiece respirator or airlined hood may be worn.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

#### Storage and Special Information

#### SECTION 7

Keep in a tightly closed container. Store in a cool, dry, ventilated area away



from sources of heat or ignition. Protect against physical damage. Wear special protective equipment (Sec. 6) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace.

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### Addendum to Material Safety Data Sheet

#### REGULATORY STATUS

This Addendum Must Not Be  
 Detached from the MSDS  
 Identifies SARA 313 substance(s)

Any copying or redistribution of the MSDS  
 must include a copy of this addendum

#### Hazard Categories for SARA Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
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X	X			X

Product or Components of Product: -----	SARA EHS		SARA Sec. 313 Chemicals		CERCLA	RCRA
	Sec. 302 RQ	TPQ	Name List	Chemical Category	Sec. 103 RQ lbs	Sec. 261.33
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MERCUROUS NITRATE (10415-75-5)	No	No	No	Mercury compound	No	No

SARA Section 302 EHS RQ:  
 Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:  
 Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (\*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:  
 Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERCLA Sec. 103:  
 Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

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