



Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table border="1" style="margin: auto;"> <tr><td style="background-color: #00FFFF;">Health Hazard</td><td style="text-align: center; border: 1px solid black;">3</td></tr> <tr><td style="background-color: #FFCCCC;">Fire Hazard</td><td style="text-align: center; border: 1px solid black;">0</td></tr> <tr><td style="background-color: #FFFF00;">Reactivity</td><td style="text-align: center; border: 1px solid black;">0</td></tr> </table>	Health Hazard	3	Fire Hazard	0	Reactivity	0	 See Section 15.
Health Hazard	3							
Fire Hazard	0							
Reactivity	0							

Section 1. Chemical Product and Company Identification		Page Number: 1
Common Name/Trade Name Mercurous Nitrate, Dihydrate	Catalog Number(s). M1206, M1208	
Manufacturer SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS# 14836-60-3; 10415-75-5 (anhydrous CAS number)	
Commercial Name(s) Not available.	RTECS OW8000000	
Synonym Mercury (I) Nitrate	TSCA TSCA 8(b) inventory: No products were found. The product with CAS number 14830-60-3 is exempt from TSCA 8(b) listing since it is a hydrate. However, the anhydrous form (CAS number 10415-75-5 is listed on the TSCA 8(b) inventory	
Chemical Name Nitric acid, mercury(1+)salt, dihydrate	CI# Not available.	
Chemical Family Not available.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000	
Chemical Formula Hg ₂ (NO ₃) ₂ ·2H ₂ O		
Supplier SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

Section 2. Composition and Information on Ingredients					
			Exposure Limits		
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Mercurous Nitrate, Dihydrate	14836-60-3	0.05		0.15	100
Toxicological Data on Ingredients Mercurous Nitrate, anhydrous (CAS number 10415-75-5): ORAL (LD50): Acute: 170 mg/kg [Rat]. 49.3 mg/kg [Mouse]. DERMAL (LD50): Acute: 2330 mg/kg [Rat].					

Section 3. Hazards Identification

Potential Acute Health Effects	Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Hazardous in case of inhalation. Slightly hazardous in case of skin contact (permeator). Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, the nervous system, gastrointestinal tract, skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Products of Combustion	Not available.
Fire Hazards in Presence of Various Substances	of combustible materials of organic materials
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Not applicable.
Special Remarks on Fire Hazards	Contact with combustible or organic materials may cause fire. When heated to decomposition it emits toxic fumes of nitrogen oxides, mercury/mercury oxides
Special Remarks on Explosion Hazards	Contact with red hot carbon causes mild explosion. Mixture of Mercurous nitrate and Phosphorus explodes violently when struck with hammer.

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Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill	Oxidizing material. Poisonous solid. Stop leak if without risk. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not ingest. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, metals.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Sensitive to light. Store in light-resistant containers.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Exposure Limits for Inorganic Mercury Compounds (as Hg): TWA: 0.025 (mg(Hg)/m ³) from ACGIH (TLV) [United States] SKIN (skin designation). Skin absorption as potential significant contribution to overall exposure. TWA: 0.1 (mg(Hg)/m ³) from ACGIH (TLV) [United States] Inhalation TWA: 0.1 (mg(Hg)/m ³) from NIOSH [United States] SKIN (skin designation). Skin absorption as potential significant contribution to overall exposure. TWA: 0.1 (mg(Hg)/m ³) from OSHA (PEL) [United States] Inhalation TWA: 0.05 STEL: 0.15 (mg(Hg)/m ³) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystals/solid.)	Odor	Not available.
Molecular Weight	561.22 g/mole	Taste	Not available.
pH (1% soln/water)	Not available.	Color	Not available.
Boiling Point	Not available.		
Melting Point	Decomposition temperature: 70°C (158°F)		
Critical Temperature	Not available.		
Specific Gravity	4.78 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		

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Water/Oil Dist. Coeff.	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	Not available.
Solubility	Soluble in 13 parts water containing 1% Nitric acid.. Insoluble in ammonium hydroxide.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials
Incompatibility with various substances	Reactive with reducing agents, combustible materials, organic materials, metals, acids
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Effloresces and becomes anhydrous in dry air. Incompatible with phosphorus, ammonia, most common metals, strong reducing agents, combustible materials, organic materials, cyanide, thiocyanates, isothiocyanates, hypophosphites, hypophosphoric acid
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 49.3 mg/kg [Mouse]. Acute dermal toxicity (LD50): 2330 mg/kg [Rat].
Chronic Effects on Humans	May cause damage to the following organs: kidneys, the nervous system, gastrointestinal tract, skin, central nervous system (CNS).
Other Toxic Effects on Humans	Very hazardous in case of skin contact (irritant), of ingestion. Hazardous in case of inhalation. Slightly hazardous in case of skin contact (permeator).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May cause adverse reproductive effects and birth defects (teratogenic)
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects Skin: Causes irritation and possible burns. It can be absorbed through the skin with symptoms similar to ingestion. Harmful if absorbed through skin. Eyes: Causes irritation with possible burns and eye damage. Inhalation: Can cause respiratory tract (nose, throat, lung) irritation causing sore throat, coughing, tightness in chest, breathing difficulties, and/or shortness of breath. Pneumonitis may develop. Ingestion: Toxic. Harmful if swallowed. May cause burning of the mouth and pharynx. Can cause salivation, metallic taste, abdominal pain, nausea, vomiting, hypermotility, bloody diarrhea. May affect the kidneys (proteinuria, acute renal failure). Inhalation/Ingestion: High or repeated exposure can cause Mercury poisoning. Mercury poisoning causes sore gums, personality changes, tremor/"shakes" (often with shaky handwriting), clumsiness, fatigue, irritability and increased saliva. Other changes may include serious personality changes, memory loss, extreme shyness, weakness, stomatitis, gingivitis, loss of teeth, gastrointestinal disturbances, metallic taste, poor appetite/anorexia, weight loss, "pins and needles" (peripheral neuropathy). Exposures can also affect the liver, cause kidney damage, and may cause decreased visual acuity, and affect peripheral vision (the ability to see to the side). Brain damage can occur, especially if exposure continues. Chronic Potential Health Effects

Inhalation/Ingestion: High or repeated exposure can cause Mercury poisoning. See above for symptoms of Mercury poisoning.

Eye Contact: brown staining in the eye without visual impairment.

Skin: Repeated skin contact can make the skin turn gray. Skin allergy/dermatitis can also occur. If this happens, even small future exposures can cause rash.

Note: In addition to the effects of exposure to mercury, this product is also a nitrate. The first clinical signs associated with nitrate poisoning include: Gastroenteritis, abdominal pain, nausea, vomiting (spontaneous vomiting), diarrhea, metabolic acidosis. Purging and diuresis can be expected. The toxicity of nitrates is due to the in vivo conversion to nitrites. The primary toxic effects of nitrites include orthostatic hypotension (due to peripheral vasodilation) and methemoglobinemia (the formation of methemoglobin in the blood which causes deficient oxygenation of the blood due to decreased available hemoglobin). Other symptoms may include muscular weakness, dizziness, lightheadness, fatigue, throbbing headache, mental impairment, incoordination, seizures convulsions, bradycardia or tachycardia (slow or fast heart beat), dysrhythmias, dyspnea. Furthermore, methemoglobinemia due to inadequate oxygenation of the blood can lead to progressive cyanosis, and coma. Cyanosis is first visible as a bluish discoloration of the mucous membranes and unpigmented areas of the body. Prolonged or repeated ingestion of large amounts of nitrates may affect the liver and can cause nausea, vomiting, anorexia/weight loss, methemoglobinemia (characterized by dizziness, rapid or slow heart beat, irregular breathing, convulsions), and possible coma and death.


Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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Section 14. Transport Information

DOT Classification	CLASS 6.1: Poisonous material.
Identification	: Mercurous nitrate UNNA: 1627 PG: II
Special Provisions for Transport	Marine Pollutant
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	<p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Mercurous Nitrate, Dihydrate (Listed as Mercury and Mercury compounds)</p> <p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Mercurous Nitrate, Dihydrate (Listed as Mercury and Mercury compounds)</p> <p>Connecticut hazardous material survey.: Mercurous Nitrate (CAS number 10415-75-5)</p> <p>Illinois chemical safety act: Mercurous Nitrate (CAS number 10415-75-5)</p> <p>New York release reporting list: Mercurous Nitrate (CAS number 10415-75-5)</p> <p>Pennsylvania RTK: Mercurous Nitrate (CAS number 10415-75-5)</p> <p>Massachusetts RTK: Mercurous Nitrate (CAS number 10415-75-5)</p>
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Massachusetts spill list: Mercurous Nitrate (CAS number 10415-75-5)
 New Jersey: Mercurous Nitrate (CAS number 10415-75-5)
 New Jersey spill list: Mercurous Nitrate (CAS number 10415-75-5)
 Louisiana spill reporting: Mercurous Nitrate (CAS number 10415-75-5)
 California Director's List of Hazardous Substances: Mercurous Nitrate (CAS number 10415-75-5)
 SARA 313 toxic chemical notification and release reporting: Mercurous Nitrate, Dihydrate (Listed as Mercury and Mercury compounds)
 CERCLA: Hazardous substances: Mercurous Nitrate: 10 lbs. (4.536 kg)

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Mercurous Nitrate, Dihydrate (Listed as Mercury and Mercury compounds)

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications

WHMIS (Canada) The classification of this product has not been validated yet by the Service du repertoire toxicologique. However, it might be classified as:
 CLASS C: Oxidizing material.
 CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
 CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC)


R8- Contact with combustible material may cause fire.
 R20/21- Harmful by inhalation and in contact with skin.
 R25- Toxic if swallowed.
 R33- Danger of cumulative effects.
 R36/38- Irritating to eyes and skin.
 R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
 S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S60- This material and its container must be disposed of as hazardous waste.
 S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

HMS (U.S.A.)

Health Hazard	3
Fire Hazard	0
Reactivity	0
Personal Protection	E

National Fire Protection Association (U.S.A.)

Health  Flammability
 Reactivity
 Specific hazard

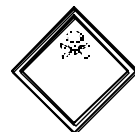
WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)



ADR (Europe) (Pictograms)



Protective Equipment

Gloves



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Splash goggles

Section 16. Other Information**MSDS Code** M3650**References** Not available.**Other Special Considerations** Uses: Fire gilding; blackening brass; analytical reagent; intermediate for other mercury derivatives

Validated by Sonia Owen on 7/14/2008.

Verified by Sonia Owen.

Printed 7/15/2008.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.