



Material Safety Data Sheet



Section 1. Chemical Product and Company Identification Page Number: 1				
Common Name/ Trade Name	Mercuric nitrate monohydrate		Catalog Number(s).	M1165, M1166
			CAS#	7783-34-8; 10045-94-0(anhydrous)
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC	С.	RTECS	OW8225000
	14422 S. SAN PEDRO STREET GARDENA, CA 90248		TSCA	TSCA 8(b) inventory: No products were found. It is not listed on the TSCA 8(b)
				hydrate. However, the anhydrous form (CAS number 10045-94-0) is listed on the TSCA 8(b) inventory.
Commercial Name(s)	Not available.		CI#	Not available.
Synonym	Mercury (II) nitrate (1:2), monohydrate; Nitric acid, mercury (II) salt, monohydrate; Mercury pernitrate, monohydrate		IN CASE OF CHEMTREC	EMERGENCY (24hr) 800-424-9300
Chemical Name	Nitric acid, mercury (2+) salt, monohydrate			
Chemical Family	Not available.		CALL (310) 5	16-8000
Chemical Formula	Hg(NO3)2.H2O			
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) Mercuric nitrate monohydrate		7783-34-8	0.05		0.1	100
Toxicological Data on Ingredients	Mercuric nitrate (CA ORAL (LD50): DERMAL (LD50):	\S number 10045-94 Acute: 26 mg/k Acute: 75 mg/k	⊢0) : :g [Rat]. 25 mg/kg :g [Rat].	[Mouse].		

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Section 3. Hazards Identification		
Potential Acute Health Effects	Very hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion. Hazardous in case of inhalation. 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: A4 (Not classifiable for human or animal.) by ACGIH. 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. Cold water may be used. Get medical attention.	
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. Cold water may be used.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. Slightly explosive in presence of heat.
Fire Fighting Media and Instructions	Not applicable.
Special Remarks on Fire Hazards	Contact with combustible or organic materials (wood, paper, oil, clothing, etc.) may cause fire. Non-combustible, but will accelerate the burning of combustible materials. May increase the intensity of fire if in contact with burning material. Solid in contact with wood or paper may cause fire. When heated to decomposition it emits toxic fumes of nitrogen oxides, mercury/mercury oxides.

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Special Remarks on Explosion Hazards	Phosphine reacts with aqueous salt solution to give a complex nitrate phosphide whic on heating or impact. ALCOHOL SHOULD NOT BE MIXED WITH MERCURIC NITRATE, AS EXPLOSIVE F FORMED. THE REACTION OF PHOSPHINES & MERCURIC NITRATE GIVES A YEL WHICH EXPLODES WHEN HEATED OR SUBJECTED TO SHOCK.	h when dry explodes FULMINATE MAY BE LOW PRECIPITATE
Section 6. Accidental	Release Measures	
Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container.	
Large Spill	Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled mater to reduce vapors. Prevent entry into sewers, basements or confined areas; dike assistance on disposal. Be careful that the product is not present at a concentrati Check TLV on the MSDS and with local authorities.	rial. Use water spray if needed. Call for on level above TLV.

Section 7. Handling and Storage

Precautions	Do not ingest. Do not breathe dust. Wear suitable protective clothing. 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.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Storage

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	TWA: 0.025 (mg(Hg)/m ³) from ACGIH (TLV) [United States] TWA: 0.05 (for mercury vapor) CEIL: 0.1(for inorganic mercury compounds) (mg(Hg)/m ³) with skin designation - from OSHA (PEL) [United States] TWA: 0.05 (for mercury vapor) CEIL: 0.1(for inorganic mercury compounds) (mg(Hg)/m ³) with skin designation - from NIOSH [United States] TWA: 0.05 (mg(Hg)/m ³) with skin designation [Australia] TWA: 0.025 (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. (Deliquescent crystals solid. Crystalline powder.)	Odor	Not available.
Molecular Weight	342.62 g/mole	Taste	Not available.
pH (1% soln/water)	Not available.	Color	White to yellowish.
Boiling Point	Decomposes.		
Melting Point	79°C (174.2°F)		
Critical Temperature	Not available.		
Specific Gravity	4.3 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	11 (Air = 1)		
Volatility	Not available.		
Odor Threshold	Not available.		

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Water/Oil Dist. Coeff.	Not available.	
Ionicity (in Water)	Not available.	
Dispersion Properties	See solubility in water, acetone.	
Solubility	Easily soluble in cold water. Soluble in acetone. Soluble in dilute acids. Soluble in nitric acid, ammonia. Insoluble in alcohol.	
Section 10. Stability	and Reactivity Data	
Stability	The product is stable.	
Instability Temperature	Not available.	
Conditions of Instability	Incompatible materials	
Incompatibility with various substances	Highly reactive with combustible materials, organic materials. Reactive with reducing agents.	
Corrosivity	Non-corrosive in presence of glass.	
Special Remarks on Reactivity	Incompatible with acetylene, hypophosphoric acid, sulfur, unsatured and aromatic compounds, gas oil, alcohol, phosphine, hypophosphites, phosphinic acid. Phosphinic ('hypophosphorus') acid violently reduces the salt to the metal, cyanides, thiocyanates, isothiocyanates	
Special Remarks on Corrosivity	Not available.	
Polymerization	Will not occur.	
Section 11. Toxicolo	gical Information	
Routes of Entry	Absorbed through skin. Dermal contact. Inhalation. Ingestion.	
Toxicity to Animals	Acute oral toxicity (LD50): 25 mg/kg [Mouse]. Acute dermal toxicity (LD50): 75 mg/kg [Rat].	
Chronic Effects on Humans	CARCINOGENIC EFFECTS : A4 (Not classifiable for human or animal.) by ACGIH. 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, permeator), of ingestion. Hazardous in case of inhalation.	
Special Remarks on Toxicity to Animals	Not available.	
Special Remarks on Chronic Effects on Humans	Human: passes through the placenta, excreted in maternal milk. 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 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 difficulities, and/or shortness of breath. Pneumonitis may develop. Ingestion: Toxic. May be fatal if swallowed. May cause burning of the mouth and pharynx. Can cause salivation, metallic taste, abdominal pain, nausea, vomiting, bloody diarrhea. May affect the kidneys (proteinuria, acute renal failure). Chronic Potential Health Effects: 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.	
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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 perpheral 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 tachydardia (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

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.

Section 14. Transport Information				
DOT Classification	CLASS 6.1: Poisonous material.			
Identification	UNNA: 1625 : Mercuric nitrate PG: II			
Special Provisions for Transport	Marine Pollutant			
DOT (Pictograms)	POISON			

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	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: Mercuric nitrate monohydrate (listed as Mercury or Mercury compounds) 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: Mercuric nitrate monohdyrate (listed as Mercury or Mercury compounds) Connecticut hazardous material survey.: Mercuric nitrate (CAS number 10045-94-0) Illinois chemical safety act: Mercuric nitrate (CAS number 10045-94-0) New York release reporting list: Mercuric nitrate (CAS number 10045-94-0) Pennsylvania RTK: Mercuric nitrate (CAS number 10045-94-0) Massachusetts RTK: Mercuric nitrate (CAS number 10045-94-0) Massachusetts spill list: Mercuric nitrate (CAS number 10045-94-0) New Jersey: Mercuric nitrate (CAS number 10045-94-0)
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	New Jersey spill list: Mercuric nitrate (CAS number 10045-94-0) Louisiana spill reporting: Mercuric nitrate (CAS number 10045-94-0) California Director's List of Hazardous Substances: Mercuric nitrate (CAS number 10045-94-0) SARA 313 toxic chemical notification and release reporting: Mercuric nitrate monohydrate (listed as mercury compounds) CERCLA: Hazardous substances.: Mercuric nitrate monohydrate: 10 lbs. (4.536 kg)						
California prop. 65: This product contains the following ingredients for which the Stat							
Proposition 65 Warnings	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: Mercuric nitrate monohydrate (listed as Mercury or Mercury compounds)						
Other Regulations	OSHA: Hazardous b EINECS: This produ No. 233-152-3). Canada: Not listed List (NDSL) China: Listed on Na Japan: Not listed on Korea: Listed on Na Philippines: Not liste Australia: Listed on	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 233-152-3). Canada: Not listed on Canadian Domestic Substance List (DSL) or Canadian Non-Domestic Substances List (NDSL) China: Listed on National Inventory. Japan: Not listed on National Inventory (ENCS). Korea: Listed on National Inventory (KECI). Philippines: Not listed on National Inventory (PICCS). Australia: Listed on AICS.					
Other Classifications	WHMIS (Canada)	The clas repertoi CLASS CLASS CLASS	ssification of this product has n re toxicologique. However, it n C: Oxidizing material. D-1A: Material causing immed D-2B: Material causing other to	this product has not been validated yet by the Service du que. However, it might be classified as: material. ial causing immediate and serious toxic effects (VERY TOXIC). ial causing other toxic effects (TOXIC).			
	DSCL (EEC)	R26/27/2 in contac R50/53- organism adverse environm	28- Very toxic by inhalation, ct with skin and if swallowed. Very toxic to aquatic ns, may cause long-term effects in the aquatic nent.	 S13- Keep away from food, drink and animal feedingstuffs. S28- After contact with skin, wash immediately with plenty of water. 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. 			
HMIS (U.S.A.)	Health Hazard Fire Hazard Reactivity Personal Protection	3 0 0 E	National Fire Protection Association (U.S.A.)	Health	Flammability Reactivity Specific hazard		
WHMIS (Canada) (Pictograms)							
DSCL (Europe) (Pictograms)			<n< td=""><td></td><td></td></n<>				
TDG (Canada) (Pictograms)							
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Mercuric nitrate	emonohydrate	Pag	e Number: 7			
ADR (Europe) (Pictograms)						
Protective Equipme	ent	Gloves.				
		Lab coat.				
		Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.				
Section 16. Othe	er Information					
MSDS Code	M3580					
References	Not available.					
Other Special Considerations	Uses: Manufacturing of felt; in bronzing; in the inside of field glasses; analytic reagent; preparation of mercuric nitrate standard solution; nitration of aromatic organic compounds; organic synthesis as the starting material and for the formulation of many other mercuric products; determination of chloride ion.					
Validated by Sonia Owe	n on 1/26/2011.	Verified by Sonia Owen. Printed 1/26/2011.				
CALL (310) 516-8000						
Notice to Reader						
All chemicals may pose unk	nown hazards and should be	used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as package	ed. If this product is			

An chemical may pose unknown magana and should be used with claudon. This indering should be should be used 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.