





Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>0</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	2	Fire Hazard	0	Reactivity	0	<div></div> <div>See Section 15.</div>
Health Hazard	2							
Fire Hazard	0							
Reactivity	0							

Section 1. Chemical Product and Company Identification

Page Number: 1

Common Name/ Trade Name	Cadmium	Catalog Number(s).	C1005, XX453, C1010
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS#	7440-43-9
Commercial Name(s)	Not available.	RTECS	EU9800000
Synonym	Not available.	TSCA	TSCA 8(b) inventory: Cadmium
Chemical Name	Cadmium	CI#	Not applicable.
Chemical Family	Metal. (Inert material.)	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000	
Chemical Formula	Cd		
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

Section 2. Composition and Information on Ingredients

		<i>Exposure Limits</i>			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Cadmium	7440-43-9	0.01			100

Toxicological Data on Ingredients	Cadmium: ORAL (LD50): Acute: 2330 mg/kg [Rat]. 890 mg/kg [Mouse]. VAPOR (LC50): Acute: 8 mg/l 4 hours [Rabbit].
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Section 3. Hazards Identification

Potential Acute Health Effects	Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Non-hazardous in case of inhalation. Severe over-exposure can result in death.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, 1 (Clear evidence.) by NTP, + (Proven.) by OSHA. Classified A2 (Suspected for human.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, lungs, upper respiratory tract, prostate. 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 if irritation occurs.
Skin Contact	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Serious Inhalation	Not available.
Ingestion	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 if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Some metallic oxides.
Fire Hazards in Presence of Various Substances	Not applicable.
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	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	Cadmium dust or powder ignites spontaneously in air and is flammable and explosive when exposed to heat or flame, or by chemical reaction with oxidizing agents, metals, hydrozoic acid, selenium, tellurium, zinc.
Special Remarks on Explosion Hazards	Cadmium explodes on contact with hydrozoic acid. It causes a violent or explosive reaction when heated with ammonium nitrate. Cadmium dust or powder ignites spontaneously in air and is flammable and explosive when exposed to heat or flame, or by chemical reaction with oxidizing agents, metals, hydrozoic acid, selenium, tellurium, zinc.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. 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. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as acids.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

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	Safety glasses. Lab coat. Gloves (impervious).
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 0.01 (mg/m ³) from ACGIH (TLV) [United States] Inhalation TWA: 0.002 (mg/m ³) from ACGIH (TLV) [United States] Inhalation Respirable. TWA: 0.01 (mg/m ³) [Canada] Inhalation Total. TWA: 0.002 (mg/m ³) [Canada] Inhalation Respirable. Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Lustrous solid. Metal solid. Metal sticks. Mossy)	Odor	Odorless.
Molecular Weight	112.4 g/mole	Taste	Not available.
pH (1% soln/water)	Not applicable.	Color	Silvery.
Boiling Point	765°C (1409°F)		
Melting Point	320.9°C (609.6°F)		
Critical Temperature	Not available.		
Specific Gravity	8.64(Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	Not available.		
Solubility	Insoluble in cold water, hot water. Soluble in acids and ammonium nitrate solution.		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials, moisture/moist air.
Incompatibility with various substances	Reactive with acids.
Corrosivity	Not considered to be corrosive for metals and glass.


Cadmium		Page Number: 4
Special Remarks on Reactivity	<p>Slowly oxidized by moist air to form Cadmium Oxide.</p> <p>Cadmium reacts with dilute nitric acid, and has a slow reaction with hot hydrogen chloride (hydrochloric acid).</p> <p>Cadmium has a rapid reaction with nitryl fluoride when heated.</p> <p>Cadmium in powder or granular form may explode when mixed with air.</p> <p>Cadmium dust or powder ignites spontaneously in air and is flammable and explosive when exposed to heat or flame, or by chemical reaction with oxidizing agents, metals, hydrozoic acid, selenium, tellurium, zinc.</p> <p>Also incompatible with elemental sulfur, dilute nitric acid, hot hydrochloric acid.</p>	
Special Remarks on Corrosivity	Not available.	
Polymerization	Will not occur.	

Section 11. Toxicological Information		
Routes of Entry	Absorbed through skin. Eye contact.	
Toxicity to Animals	<p>WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.</p> <p>Acute oral toxicity (LD50): 890 mg/kg [Mouse].</p> <p>Acute toxicity of the vapor (LC50): 8 mg/l 4 hours [Rabbit].</p> <p>Acute toxicity of the dust (LC50): 25 mg/m³ 0.5 hours [Rat].</p>	
Chronic Effects on Humans	<p>CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, 1 (Clear evidence.) by NTP, + (Proven.) by OSHA. Classified A2 (Suspected for human.) by ACGIH.</p> <p>May cause damage to the following organs: blood, kidneys, lungs, upper respiratory tract, prostate.</p>	
Other Toxic Effects on Humans	<p>Slightly hazardous in case of skin contact (irritant), of ingestion.</p> <p>Non-hazardous in case of inhalation.</p>	
Special Remarks on Toxicity to Animals	Not available.	
Special Remarks on Chronic Effects on Humans	<p>May cause adverse reproductive effects and birth defects (teratogenic).</p> <p>May cause cancer.</p>	
Special Remarks on other Toxic Effects on Humans	<p>Acute Potential Health Effects:</p> <p>Skin: May cause skin irritation and dermatitis.</p> <p>Eyes: Not expected to cause eye irritation since it is in stick or mossy form.</p> <p>Inhalation: Not expected to cause respiratory tract irritation for normal use since it is in stick or mossy form and will not create dust or fume under normal handling conditions. If it is smelted it will release fumes. Inhalation of Cadmium fumes or dust causes respiratory tract irritation and the Cadmium is readily absorbed after inhalation. The absorbed Cadmium accumulates throughout the body, especially in the liver and kidneys. Inhalation of fumes or dust can cause "fume metal fever" , a condition characterized by flu-like symptoms. Symptoms may include shivering, sweating, headache, weakness, body pains, chest pain, difficulty breathing, sore throat, coughing, tracheobronchitis, pulmonary edema, pneumonitis. Other symptoms may include dizziness, irritability, nausea, vomiting, diarrhea.</p> <p>Ingestion: Cadmium in the stick or mossy form is not likely to pose any ingestion hazard. However, symptoms of acute ingestion may include abdominal pain, burning sensation, nausea, vomiting, salivation, muscle cramps, vertigo, shock, unconsciousness, convulsions.</p> <p>Chronic Potential Health Effects:</p> <p>Ingestion or Inhalation: Cadmium in the stick or mossy form is not likely to pose an ingestion or inhalation hazard for normal handling since it is unlikely to be ingested in these forms. However chronic inhalation of dust or fumes or chronic ingestion of Cadmium dust can pose a health hazard. Cadmium is eliminated from the body very slowly and accumulates in the body with increasing age and duration of exposure. Signs and symptoms of chronic exposure include gastrointestinal effects, generalized pain, kidney damage, loss of sense of smell, nasal discharge, nose and throat irritation, rhinitis, nasal septum ulceration, olfactory nerve damage, lack of appetite, weight loss, nausea, tooth discoloration (yellow teeth), bone structure defects and microfractures, osteomalacia, liver damage, anemia, eosinophilia, pulmonary emphysema, chronic bronchitis, bronchopneumonia.</p>	

Section 12. Ecological Information		
Ecotoxicity	<p>Ecotoxicity in water (LC50): 0.0004-0.003 mg/l 96 hours [Fish (pimephales promelas)]. 0.002-0.24 mg/l 96 hours [Fish (cyprinus carpio)]. 0.0.003-0.006 mg/l 96 hours [Fish (oncorhynchus mykiss)]. 0.016 mg/l 96 hours [Fish (oryzias latipes)]. 21.1 mg/l 96 hours [Fish (lepomis macrochirus)]. 0.0244 mg/l 48 hours [Daphnia (daphnia)].</p>	
BOD5 and COD	Not available.	
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.	

Cadmium		Page Number: 5
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	Not a DOT controlled material (United States).	
Identification	Not applicable.	
Special Provisions for Transport	Not applicable.	
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: Cadmium</p> <p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Cadmium</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: Cadmium</p> <p>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: Cadmium</p> <p>New York release reporting list: Cadmium</p> <p>Pennsylvania RTK: Cadmium</p> <p>Minnesota: Cadmium</p> <p>Michigan critical material: Cadmium</p> <p>Massachusetts RTK: Cadmium</p> <p>Massachusetts spill list: Cadmium</p> <p>New Jersey: Cadmium</p> <p>New Jersey spill list: Cadmium</p> <p>Louisiana spill reporting: Cadmium</p> <p>California Director's List of Hazardous Substances: Cadmium</p> <p>TSCA 8(b) inventory: Cadmium</p> <p>SARA 313 toxic chemical notification and release reporting: Cadmium</p> <p>CERCLA: Hazardous substances.: Cadmium: 10 lbs. (4.536 kg)</p>	
California Proposition 65 Warnings	<p>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: Cadmium</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: Cadmium</p>	
Other Regulations	<p>OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).</p> <p>EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 231-152-8).</p> <p>Canada: Listed on Canadian Domestic Substance List (DSL).</p> <p>China: Listed on National Inventory.</p> <p>Japan: Not listed on National Inventory (ENCS).</p> <p>Korea: Listed on National Inventory (KECI).</p> <p>Philippines: Listed on National Inventory (PICCS).</p> <p>Australia: Listed on AICS.</p>	
Other Classifications	WHMIS (Canada)	<p>CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).</p> <p>CLASS D-2A: Material causing other toxic effects (VERY TOXIC).</p>

DSCL (EEC)

R26- Very toxic by inhalation.
 R45- May cause cancer.
 R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R62- Possible risk of impaired fertility.
 R63- Possible risk of harm to the unborn child.
 R48/23/25- Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
 R68- Possible risks of irreversible effects.

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S53- Avoid exposure - obtain special instructions before use.
 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	2
Fire Hazard	0
Reactivity	0
Personal Protection	B

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

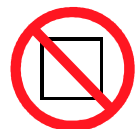
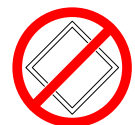
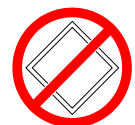
Health



Flammability

Reactivity

Specific hazard

**WHMIS (Canada)
(Pictograms)****DSCL (Europe)
(Pictograms)****TDG (Canada)
(Pictograms)****ADR (Europe)
(Pictograms)****Protective Equipment**

Gloves (impervious).



Lab coat.

Wear appropriate respirator when ventilation is inadequate.



Safety glasses.

Section 16. Other Information**MSDS Code** C3020**References** Not available.

Other Special Considerations Uses: Electroplating of automotive, aircraft, and electronic parts; marine equipment and industrial machinery; in preparation of cadmium sulfides, cadmium selenides and mixtures containing these salts for use as pigments; in fire protection systems, machinery enamels, baking enamels, batteries; chemical intermediate for pigments, plastic stabilizers; catalysts; soft solder and solder for aluminum; reactor control rods; constituent of low melting or easily fusible alloys.

Validated by Sonia Owen on 5/14/2012.**Verified by Sonia Owen.****Printed 7/2/2012.****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.