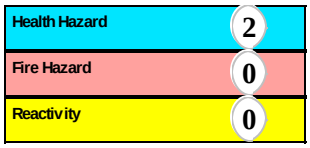
Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
		 See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Cadmium oxide**
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248
Commercial Name(s)	Not available.
Synonym	Cadmiuim Monoxide
Chemical Name	Cadmium Oxide
Chemical Family	Not available.
Chemical Formula	CdO
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248

Catalog Number(s).	C1045, C1349
CAS#	1306-19-0
RTECS	EV1925000
TSCA	TSCA 8(b) inventory: Cadmium oxide
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

CALL (310) 516-8000

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) Cadmium oxide	1306-19-0	0.05			100

Toxicological Data on Ingredients

Cadmium oxide:
ORAL (LD50): Acute: 72 mg/kg [Rat]. 72 mg/kg [Mouse]. 72 mg/kg [Mammal].
DUST (LC50): Acute: 250 ml/m^3 2 hours [Mouse]. 3500 mg/m^3 0.16 hours [Guinea pig]. 2500 mg/m^3 0.16 hours [Rabbit].

Section 3. Hazards Identification

Potential Acute Health Effects

Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant). Severe over-exposure can result in death.

Potential Chronic Health Effects

CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, 1 (Clear evidence. Known carcinogen) by NTP. 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 kidneys, liver.
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.

Continued on Next Page

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	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. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate 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	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	Not applicable.
Special Remarks on Fire Hazards	When heated to decomposition it emits toxic fumes of Cadmium and Cadmium oxide.
Special Remarks on Explosion Hazards	Mixtures with Magnesium explode when heated.

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 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.

Continued on Next Page

Section 7. Handling and Storage

Precautions	Keep locked up.. 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. Keep away from incompatibles such as oxidizing agents.
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. 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: 0.002 (mg(Cd as dust)/m^3) from ACGIH (TLV) [United States] Inhalation Respirable. TWA: 0.01 (mg(Cd as dust)/m^3) from ACGIH (TLV) [United States] Inhalation Total. TWA: 0.025 STEL: 0.05 (mg(Cd as fume)/m^3) [United Kingdom (UK)] Inhalation CEIL: 0.05 (mg(Cd as fume)/m^3) [Canada] Inhalation Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Powdered solid. Crystals solid.)	**Odor**	Odorless.
Molecular Weight	128.4 g/mole	**Taste**	Not available.
pH (1% soln/water)	Not applicable.	**Color**	Reddish-Brown. Brown. (Dark.)
Boiling Point	Sublimation temperature: 1559°C (2838.2°F)		
Melting Point	Decomposition temperature: 950°C (1742°F).		
Critical Temperature	Not available.		
Specific Gravity	Density: 8.15 (Water = 1) (crystal form) 6.95 (amorphous powder form)		
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. Soluble in dilute acids. Slowly soluble in ammonium salts. Insoluble in alkalies.		

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Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials, dust generation.
Incompatibility with various substances	Reactive with oxidizing agents.
Corrosivity	Not available.
Special Remarks on Reactivity	Incompatible with Magnesium
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	**WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.** Acute oral toxicity (LD50): 72 mg/kg [Mammal]. Acute toxicity of the dust (LC50): 2500 mg/m^3 0.16 hours [Rabbit].
Chronic Effects on Humans	**CARCINOGENIC EFFECTS**: Classified 1 (Proven for human.) by IARC, 1 (Clear evidence. Known carcinogen) by NTP. Classified A2 (Suspected for human.) by ACGIH. May cause damage to the following organs: kidneys, liver.
Other Toxic Effects on Humans	Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May cause adverse reproductive effects and birth defects (teratogenic). Can cause cancer.
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: Harmful if inhaled. Inhalation of Cadmium Oxide fume and dust can cause dry throat, cough and pains, fever, headache, chills, shivering, sweating, metallic taste in mouth, chest pain, breathing difficulty, shortness of breath, rales, and potentially fatal non-cardiogenic pulmonary edema, and possibly foamy and bloody sputum. Ingestion: Harmful if swallowed. Can cause gastrointestinal distress, with nausea abdominal cramps, vomiting, diarrhea, salivation, metallic taste in mouth, muscle cramps, dizziness, rare seizures, exhaustion, collapse, shock, possible death. May cause liver or kidney damage Chronic Potential Health Effects: Inhalation/Ingestion: May cause kidney damage (renal tubular dysfunction with protenuria), liver damage, osteomalacia (brittle and painful bones), joint pain, stiffness in limbs, osteoporosis, emphysema, reduced pulmonary function, pulmonary fibrosis, yellow discoloration of teeth, hypertension, heart disorders. May cause neurological changes involving reduced optical and dermal stimulability, functional changes in the cerebral cortex and loss of smell, anemia, eosinophilia. It may also affect the heart.

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.

Continued on Next Page

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: 2570 : Cadmium compound, (Cadmium oxide) PG: III
Special Provisions for Transport	Marine Pollutant
DOT (Pictograms)	

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: Cadmium oxide 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 oxide Illinois toxic substances disclosure to employee act: Cadmium oxide Illinois chemical safety act: Cadmium oxide New York release reporting list: Cadmium oxide Rhode Island RTK hazardous substances: Cadmium oxide Pennsylvania RTK: Cadmium oxide Michigan critical material: Cadmium oxide Massachusetts RTK: Cadmium oxide Massachusetts spill list: Cadmium oxide New Jersey: Cadmium oxide New Jersey spill list: Cadmium oxide Louisiana RTK reporting list: Cadmium oxide California Director's List of Hazardous Substances: Cadmium oxide TSCA 8(b) inventory: Cadmium oxide SARA 302/304/311/312 extremely hazardous substances: Cadmium oxide SARA 313 toxic chemical notification and release reporting: Cadmium oxide CERCLA: Hazardous substances.: Cadmium oxide: 100 lbs. (45.36 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: Cadmium oxide 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: No products were found.
Other Regulations	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. 215-146-2). Canada: Listed on Canadian Domestic Substance List (DSL). China: Listed on National Inventory. Japan: Listed on National Inventory (ENCS). Korea: Listed on National Inventory (KECI). Philippines: Listed on National Inventory (PICCS). Australia: Listed on AICS.
Other Classifications	**WHMIS (Canada)**: CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). **DSCL (EEC)**

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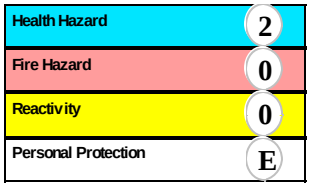
		R22- Harmful if swallowed. R49- May cause cancer by inhalation. R48/23/25- Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.	S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.)



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

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.

Safety glasses.

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Section 16. Other Information

MSDS Code	C3100
References	Not available.
Other Special Considerations	Major Uses: Used as a second polarizer (in addition to silver oxide) in silver-zinc storage batteries; used in nitrile rubbers, and plastics such as Teflon to improve their high-temperature properties and heat resistence; used in phosphors, semiconductors; in manufacturer of silver alloys, glass; as a catalyst for organic reactions, in cadmium electroplating, in ceramic glazes; as a nemtocide.

Validated by Sonia Owen on 3/20/2009.

Verified by Sonia Owen.

Printed 3/20/2009.

CALL (310) 516-8000

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