



MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Name Nu-Calgon Wholesaler, Inc.	Phone Number (314) 469-7000 / (800) 554-5499	CHEMTREC (800) 424-9300		
Street Address 2008 Altom Court	City St. Louis	State MO	Postal Code 63146-4151	Last Update 2/21/07
Product Name Cal-Treat 233	Product Number 4149	Product Use Aqueous Cooling Tower Treatment		EPA Registration # N/A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Ingredients</u>	<u>% By Wt.</u>	<u>CAS Number</u>	<u>TLV</u>	<u>PEL</u>
Potassium hydroxide	1-10	1310-58-3	Ceiling: 2 mg/m3	Ceiling: 2 mg/m3
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)*	1-10	2809-21-4	None established	None established
Zinc nitrate	1-10	7779-88-6	None established	None established
Anionic copolymer*	1-10	Proprietary	None established	None established
Sodium molybdate dihydrate	<0.5	10102-40-6	TWA: 0.5 mg/m3***	TWA: 5.0 mg/m3**

*Present in formulation as potassium/sodium salt.

Soluble molybdenum compounds as Mo; *Soluble molybdenum compounds as Mo, respirable fraction

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview: Clear colorless solution. DANGER! Causes eye and skin irritation and burns. Harmful if swallowed. Product mist causes respiratory tract irritation.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, ingestion, and inhalation

TARGET ORGANS: Eye, skin, mucous membranes, and nervous system

Potential Health Effects

Eyes: Contact causes irritation and possibly eye burns with tearing, redness, swelling, and/or tissue damage.

Skin: Contact causes irritation of the skin with redness, itching, and pain. If product is not removed promptly, burns may occur. There may be a delay between the time of exposure and when the sense of irritation begins.

Ingestion: Ingestion of this product causes severe irritation or burns of the mucous membranes of the mouth, throat, esophagus, and stomach. Abdominal pain, nausea, and vomiting may occur. Ingestion of the product component, zinc nitrate, can cause methemoglobinemia, a reduced capacity of the blood to carry oxygen characterized by cyanosis, headache, dizziness, fatigue, nausea, vomiting, drowsiness, stupor, coma and in rare, severe cases, death.

Inhalation: Inhalation of product mist causes respiratory tract irritation. Symptoms may include coughing and shortness of breath. Methemoglobinemia, a reduced ability of the blood to carry oxygen, may occur with symptoms paralleling those covered under "INGESTION".

Chronic Exposure: No information is available for this product. Information on components follows.

Prolonged contact with dilute solutions or mists of potassium hydroxide has a destructive effect on tissues.

Some blood effects have been produced by HEDP in chronic feeding studies with rats. A product containing 60% HEDP was administered to beagle dogs at dietary concentrations as high as 10,000 ppm for 90 days with no adverse hematological, biochemical, or histopathological effects.

Numerous publications in the scientific literature discuss the effects of HEDP related to bone resorption in tissue and cell culture, and in animals. The effects of HEDP related to bone mineralization, calcium absorption, and metabolism of calcium and phosphate have also been evaluated.

Prolonged or repeated skin contact with zinc nitrate can cause dermatitis (inflammation and redness of the skin). Repeated ingestion of small amounts of zinc nitrate may cause weakness, depression, headaches, neurological effects, and mental impairment.

Chronic ingestion of sodium molybdate dihydrate may cause lack of appetite and diarrhea. Chronic inhalation overexposure may cause liver dysfunction with hyperbilirubinemia.

Carcinogenicity: NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

ACGIH: Sodium molybdate dihydrate: A3, Confirmed animal carcinogen with unknown relevance to humans

Medical Conditions Aggravated by Exposure: Conditions of the eye, skin, respiratory tract, and nervous system may be aggravated by overexposure to this product.

SECTION 4 – FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally, to ensure complete rinsing. Seek medical aid immediately.

Skin: Immediately flush the affected area with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do NOT induce vomiting. If victim is conscious and alert, give one or two glasses of water. Seek medical aid immediately. Never give anything by mouth to an unconscious person.

Inhalation: If inhalation occurs, remove victim to fresh air. If victim breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Seek medical aid.

SECTION 5 – FIREFIGHTING MEASURES

Flash Point: None°C / None°F

Autoignition Temp: N/A°C / N/A°F

Hazardous Products of Combustion: No Data.

Flammable Limits in Air: No Data.

Extinguishing Media: Use extinguishing media appropriate for the surrounding fire.

Fire and Explosion Hazards: Product emits toxic gases under fire conditions. Contact with some metals can generate flammable hydrogen gas.

Special Firefighting Procedures: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak: Wear appropriate personal protective equipment. Keep unnecessary and unprotected people away from the spill site. Ventilate the area of the spill, contain the spill, recover as much liquid as possible, absorb the residue on an inert absorbent, and place the used absorbent in a suitable container. Prevent entry into sewers and waterways. Dispose of recovered product, if unusable, and used absorbent according to federal, state, and local regulations. U.S. Regulations (CERCLA) require the reporting of spills and releases to soil, water, and air in excess of reportable quantities. The toll free number for the U.S. Coast Guard National Response Center is 800-424-8802.

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment: Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. Wash thoroughly after handling. Keep containers closed when not in use.

Storage Requirements: Store in a cool, dry, well-ventilated area away from incompatible materials.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Respiratory protection is not normally needed. If mists, vapors, or aerosols are generated, an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, and maintenance and inspection.

Eye Protection: Chemical splash goggles and face shield.

Protective Clothing: Chemical resistant gloves and impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Exposure Guidelines: No Data.

Specific Engineering Controls (such as ventilation, enclosed process): Use local and/or general exhaust ventilation to maintain airborne concentrations below irritating levels or airborne exposure limits, whichever is lower. Local exhaust is generally preferred because it can control the emission 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, the most recent edition, for details. An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid	Freezing Point: N/A°C/N/A°F	% Volatile by Weight: N/A%
Color: Clear	Vapor Density [air =1]: N/A	Evaporation Rate: N/A
Odor: No Odor	Vapor Pressure: N/A	Specific Gravity: 1.08-1.14 g/mL
Boiling Point: N/A°C/N/A°F	Solubility in Water: Complete	pH (concentrate): 12.0-13.0

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable

Hazardous Polymerization: Will not occur.

Incompatibilities: Acids, oxidizers, and amphoteric metals, such as aluminum

Reactive Conditions to avoid: Incompatibles

Decomposition Products: Thermal decomposition or combustion may produce oxides of potassium, carbon, nitrogen, zinc, phosphorus, sulfur, and sodium.

SECTION 11 – TOXICOLOGICAL INFORMATION

<u>Hazardous Ingredients</u>	<u>CAS #</u>	<u>EINECS #</u>	<u>LD 50 of Ingredient</u> (Specify Species)	<u>LC50 of Ingredient</u> (Specify Species)
Potassium hydroxide			Oral (rat): 273 mg/Kg Dermal (rabbit): 1,260 mg/Kg	N/A
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)			Oral (rat): 2,400 mg/Kg (60% solution) Dermal (rabbit): >7,940 mg/Kg (60% solution)	N/A
Zinc nitrate			Oral (rat): 1,190 mg/Kg	N/A
Anionic copolymer			Oral (rat): >1,400 mg/Kg Dermal (rabbit): >560 mg/Kg	N/A
Sodium molybdate dihydrate			Oral (rat): 4,233 mg/Kg Dermal (rabbit): >2,000 mg/Kg	Inhalation (rat): >1.93 mg/L/4H

SECTION 12 – ECOLOGICAL INFORMATION

<u>Hazardous Ingredients</u>	<u>Aquatic Toxicity Data</u>
Potassium hydroxide	48 hr EC50 (Water flea): 60 mg/L (45.25% solution) 96 hr LC50 (Fathead minnow): 179 mg/L (45.25% solution) 96 hr LC50 (Mosquito fish): 39-56 mg/L 96 hr LC50 (Green algae): 61 mg/L (45.25% solution)
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)	48 hr LC50 (Daphnia magna): 527 mg/L 96 hr LC50 (Bluegill sunfish): 868 mg/L 96 hr LC50 (Rainbow trout): 368 mg/L
Zinc nitrate	96 hr LC50 (Fathead minnow): 0.1-7.2 mg/L 96 hr LC50 (Bluegill): 0.1-7.2 mg/L 96 hr LC50 (Rainbow trout, juvenile): 0.43 mg/L 96 hr LC50 (Rainbow trout, juvenile): 1.2-7.2 mg/L
Anionic copolymer	48 hr LC50 (Daphnia magna): 2,800 mg/L 96 hr LC50 (Bluegill sunfish): >10,000 mg/L 96 hr LC50 (Rainbow trout): 4,900 mg/L
Sodium molybdate dihydrate	48 hr EC50 (Daphnia magna): 330 mg/L 96 hr LC50 (Rainbow trout): 7,600 mg/L 72 hr IC50 (Selenastrum capricornutum, algae): >100 mg/L

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: RCRA STATUS: Discarded product as sold would be considered a RCRA Hazardous Waste based on the characteristic of corrosivity. The EPA Hazardous Waste Number is D002. DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Special Shipping Information: No Data.

<u>Purview</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT (Land)	Corrosive Liquid, n.o.s. (contains potassium hydroxide). Label: Corrosive	1760	III	8
IMO (Water)	No Data.			
ICAO (Air)	No Data.			

