

MATERIAL SAFETY DATA SHEET**PHOSPHOTUNGSTIC ACID**

PRODUCT CODE NUMBER(S): 6230-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** *Phosphotungstic acid; Tungstophosphoric acid; Dodeca-tungstophosphoric acid***Chemical Family:** *Tungsten compound***Chemical Formula:** $P_2O_5 \cdot 24WO_3 \cdot xH_2O$ **Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9***Telephone No:** (905) 877-0101**Fax No:** (905) 877-6666**Emergency Telephone No:** CANUTEC (613) 996-6666**HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Phosphotungstic acid</i>	<i>99</i>	<i>1 mg/m³</i>	<i>12067-99-1</i>
	<i>(soluble tung-sten compounds, as W)</i>		

PHYSICAL DATA**Physical State:** *Solid***Odour and Appearance:** *Colourless to grey or yellow-green crystals, odourless***Odour Threshold (ppm):** *Not applicable***Vapour Pressure (mm Hg):** *Not applicable***Vapour Density (Air = 1):** *Not applicable***Evaporation Rate:** *Not available***Boiling Point (degrees C):** *Not available***Melting Point (degrees C):** *89°C (24 H₂O hydrate)***pH:** *Not available***Specific Gravity:** *Not available***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *Not regulated***T.D.G. Class:** *Not regulated***Pkg. Group:** *Not regulated***REACTIVITY DATA****Chemical Stability:** *Stable under normal temperatures and pressures***Incompatibility with other substances:** *May react violently with strong bases.***Reactivity:** *Avoid high temperatures, incompatible or combustible materials, generation of dust or mist.***Hazardous Decomposition Products:** *Toxic fumes of phosphorus oxides.***FIRE AND EXPLOSION DATA****Flammability:** *Not combustible as solid. Strong oxidizer in solution, increased risk of fire or explosion when in contact with combustible materials.***Extinguishing Media:** *Use extinguishing media appropriate to the surrounding fire. Use water in flooding amounts to cool containers, prevent dust formation, flush chemical away from fire. Fight fire from upwind direction, from a safe distance. Firefighters must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes and contact with skin and eyes.***Flash Point (Method Used):** *Not applicable***Autoignition Temperature:** *Not applicable***Upper Flammable Limit (% by volume):** *Not applicable***Lower Flammable Limit (% by volume):** *Not applicable***Hazardous Combustion Products:** *Toxic fumes of phosphorus oxides, tungsten fumes.***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *None identified***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** *(oral, rat) 3,300 mg/kg***LC₅₀:** *Not available***Effects of Acute Exposure to Product:****Inhaled:** *Corrosive. Inhalation of dust may cause irritation of upper respiratory tract with wheezing, coughing, and shortness of breath. Severe overexposure to dusts of tungsten compounds has caused changes in body weight, behaviour, blood cells, cholinesterase activity and sperm in animal testing. Severe overexposure may cause destruction of lung tissue and may be fatal as a result of spasm, inflammation, and edema of the larynx and bronchi.***In contact with skin:** *Corrosive. Dust or solutions may cause severe irritation with redness, swelling, pain, chemical burns. Severity of effects depends on degree and duration of exposure.***In contact with eyes:** *Corrosive. Dust, mist or vapour can cause severe irritation or burns, pain, blurred vision, redness, and swelling of conjunctiva, corneal damage and even blindness.***Ingested:** *Not particularly toxic, but can cause irritation of the mouth and throat, stomach. Large amounts can cause abdominal pain, nausea, vomiting, and diarrhea, burns to gastrointestinal tissue. Exposure to large amounts of tungsten compounds has caused changes in body weight, behaviour, blood cells, cholinesterase activity and sperm in animal testing.*

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Effects of Chronic Exposure to Product:

Prolonged skin exposure may cause dermatitis. Prolonged inhalation can cause chronic respiratory irritation or lung damage.

Carcinogenicity: No information available

Teratogenicity: No information available

Reproductive Effects: No information available

Mutagenicity: No information available

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust required.

Respiratory Protection: Dust/mist mask. Up to 10x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH/OSHA approved half-face dust/mist filter respirator. Up to 50x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH/OSHA approved full face-piece dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.

Eye Protection: Chemical safety goggles and/or face shield. Do not wear contact lenses when working with chemicals.

Skin Protection: Wear impervious protective gloves. Other body-covering protective clothing, apron, sleeves, coveralls, boots, sufficient to prevent contact.

Other Personal Protective Equipment: Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure: Evacuate area of spill. Keep away from combustible materials. Eliminate sources of ignition. Cleanup personnel must be thoroughly trained in the handling of hazardous materials, and must wear protective equipment and clothing sufficient to prevent inhalation of dusts, fumes or mists, and contact with skin, eyes or clothing. Mix with inert absorbent, transfer to container and arrange removal by disposal company. Prevent from entering sewers or waterways. Solutions are strong oxidizers that can render organic matter (paper, wood, textiles) dangerously combustible, wash area of spillage and contaminated clothing thoroughly with copious amounts of water.

Waste Disposal: Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment: CORROSIVE, OXIDIZER IN SOLUTION; keep solutions away from combustible materials. Workers must be thoroughly trained in the hazards of this material and its safe use, and must wear appropriate protective equipment and clothing. Use smallest amounts possible in designated areas with adequate ventilation. Avoid generating dusts or mists (solutions). Do not breath dust or mist. Avoid contact with eyes, skin or clothing. Keep work area free of extraneous, incompatible, or combustible materials. Treat empty containers with caution; they may contain hazardous residues.

Storage Requirements: Store in suitable, labelled containers in a cool, dry, well-ventilated area, out of direct sunlight and away from all incompatible and combustible materials. Keep containers tightly closed when not in use and when empty. Treat empty containers with caution as they may contain hazardous residues. Protect from physical damage; inspect frequently for signs of damage or leaking.

FIRST AID MEASURES**Specific Measures:**

Eyes: Flush thoroughly with gently running water for at least fifteen (15) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear protective gloves to avoid contact with this chemical during first aid procedures. Get medical attention immediately.

Skin: Remove contaminated clothing. Flush skin with soap and plenty of running water for at least fifteen (15) minutes. Wear protective gloves to avoid contact with this chemical. Get medical attention immediately. Decontaminate clothing before reuse, or discard; clothing contaminated with oxidizers can burn spontaneously.

Inhalation: Remove to fresh air. Give oxygen and get medical attention immediately for any breathing difficulty. If breathing has stopped, begin artificial respiration immediately. Symptoms of pulmonary edema (shortness of breath, cyanosis) may not appear until several hours after exposure; monitor for 48 hours, and if symptoms appear, get medical attention immediately.

Ingestion: If victim is alert and not convulsing, rinse mouth thoroughly with water and give victim 2 to 4 glasses of water to drink. DO NOT INDUCE VOMITING. Get medical attention immediately.

REFERENCES USED

CCINFO disc

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: July 7, 1999

Revision: June 2011

MSDS: 6230-1

Proposed WHMIS Designation: E

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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