

MATERIAL SAFETY DATA SHEET**KELCAL POWDER 60**

PRODUCT CODE NUMBER(S): 4433-8, 4434-8

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** Kelcal powder 60, with and without pumice**Chemical Family:** Mixture**Chemical Formula:** K_2SO_4 , $CuSO_4$, Se**Product Use:** Kjeldahl 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**

Ingredients	%	TLV Units	CAS No.
K_2SO_4	~95	Not established	7778-80-5
Selenium	<1	0.2 mg/m ³	10214-40-1
$CuSO_4$	<5	1 mg/m ³ (as Cu)	7758-98-7
May contain:			
Pumice	<1	Not established	Not available

PHYSICAL DATA**Physical State:** Solid**Odour and Appearance:** White and blue granules in powder or tablets, odourless**Odour Threshold (ppm):** Not available**Vapour Pressure (mm Hg):** Not applicable**Vapour Density (Air = 1):** Not applicable**Evaporation Rate:** Not applicable**Boiling Point (degrees C):** Not available**Melting Point (degrees C):** 1072°C**pH:** Not available**Specific Gravity:** 2.66**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**Incompatibility with other substances:** $CuSO_4$ - hydroxylamine, powdered metals, magnesium, water.

Selenium - acids, oxidizers, carbides, alkali metals, halogen compounds

 K_2SO_4 - strong oxidizing agents**Reactivity:** Avoid excessive heat, generation of dust, all incompatible materials.**Hazardous Decomposition Products:** Copper fumes, copper and sulphur oxides**FIRE AND EXPLOSION DATA****Flammability:** Not combustible**Extinguishing Media:** Use any means suitable for surrounding fire. Fight fire from up wind, 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:** Copper fumes, sulphur and copper oxides**Sensitivity to Impact:** None identified**Sensitivity to Static discharge:** None identified**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** $CuSO_4$ (oral, rat) 960 mg/kg;Se (oral, rat) 6.7 g/kg; K_2SO_4 (oral, rat) 6.6 g/kg**LC₅₀:** Not available**Effects of Acute Exposure to Product:****Inhaled:** Copper sulphate is irritating to mucous membranes and upper respiratory tract. Severe overexposure can cause ulceration of nasal septum, probably due to traces of sulphuric acid impurities.**In contact with skin:** May cause skin irritation.**In contact with eyes:** Particles of copper sulphate can cause inflammation, tissue destruction and corneal opacity.**Ingested:** Toxic. Copper sulphate may cause metallic taste in mouth, burning sensation in the throat, and repeated vomiting. More severe exposures may cause ulceration of the gastrointestinal tract, diarrhea.**Effects of Chronic Exposure to Product:**

Prolonged or repeated contact with potassium sulphate may cause skin irritation or eye damage, and may aggravate kidney disorders. Prolonged or repeated contact with copper compounds may cause skin irritation, contact dermatitis. Prolonged inhalation can cause lung damage. Chronic copper poisoning is typified by hepatic cirrhosis, copper deposits in the cornea, brain damage and kidney damage, hemolytic anemia. Occupational exposure to selenium has

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caused pallor, nervousness, depression, garlic odour of breath and sweat, gastrointestinal disturbances and dermatitis. Experiments with animals have produced liver damage.

Carcinogenicity: None of the components is listed as carcinogenic, although selenium, in large doses, has caused tumors in animal testing.

Teratogenicity: Selenium is fetotoxic in animal testing

Reproductive Effects: Reproductive effects cited for selenium and copper in animal testing.

Mutagenicity: Selenium is a weak mutagen in Ames test.

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust ventilation recommended.

Respiratory Protection: Dust mask. NIOSH approved respiratory equipment sufficient to prevent inhalation of fumes or dusts. For high or unknown concentrations, as in fire or spill conditions, NIOSH approved positive-pressure, full face-piece self-contained breathing apparatus.

Eye Protection: Chemical safety goggles

Skin Protection: Neoprene gloves. Other protective body-covering clothing sufficient to prevent contact.

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

Leak and Spill Procedure: Ventilate area. Cleanup personnel must be thoroughly trained in the hazards of this material and must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Mix with sand or inert absorbent, collect in a manner that does not raise dust, and transfer carefully into labelled, covered container(s) for removal by disposal company. Wash site of spillage thoroughly with water and detergent.

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

Handling Procedures and Equipment: TOXIC. Workers using this chemical must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Avoid all contact and inhalation of dust or fumes. Use the smallest possible amount for the purpose, in designated areas with adequate ventilation. Keep work area clean and free of extraneous materials. Maintain good housekeeping procedures to avoid accumulation of dust. Keep containers closed when not in use and when empty.

Storage Requirements: Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Keep containers tightly closed when not in use and when empty. Protect from damage. Store away from incompatible materials.

FIRST AID MEASURES

Specific Measures:

Eyes: Immediately flush eyes with gently running water, holding eyelids open while flushing, for five to ten (5-10) minutes, or until no trace of chemical remains. If irritation persists, obtain medical attention.

Skin: Remove contaminated clothing. Brush or wipe off dry material. Flush affected areas with soap and running water for five to ten (5-10) minutes, or until no trace of chemical remains. If irritation persists, or if exposure was extensive, obtain medical attention.

Inhalation: Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.

Ingestion: If the person is alert, and not convulsing, give 2 to 4 glasses of water to drink immediately. After the water has been swallowed encourage vomiting (under medical supervision) by touching the back of throat with finger or by administering syrup of ipecac. Get medical attention immediately.

REFERENCES USED

CCINFO disc: Cheminfo

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

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

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: November 30, 1991

Revision: February 2011

MSDS: 4433-8, 4434-8

Proposed WHMIS Designation: D2B (CuSO₄)

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