CALEDON LABORATORY CHEMICALS

MATERIAL SAFETY DATA SHEET

KELCAL TABLETS AT 50

PRODUCT CODE NUMBER(S): 4449-8

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Kelcal Tablets AT 50*
Chemical Family: *Mixture*
Chemical Formula: *K_2SO_4, $CuSO_4$, $NaSbO_3$, $Zn\ SO_4$*
Product Use: *Kjeldahl reagent*
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9
Telephone No: *(905) 877-0101*
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Emergency Telephone No: *CANUTEC (613) 996-6666*

HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	*%*	*TLV Units*	*CAS No.*
Potassium sulphate	*82.0*	*Not established*	*7778-80-5*
Cupric sulphate	*0.2*	*1 mg/m^3 (as Cu)*	*7758-98-7*
Sodium antimonate	*15.0*	*0.05 mg/m^3*	*11112-10-0*
Zinc sulphate	*2.6*	*Not established*	*7446-19-7*

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *White and blue 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): *888°C*
pH: *Not available*
Specific Gravity: *2.67*
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: *K_2SO_4 - reacts violently with magnesium and aluminum at elevated temperatures. $CuSO_4$ - hydroxylamine, powdered metals, magnesium, water. $ZnSO_4$ - strong oxidizers.*
Reactivity: *Avoid excessive heat, generation of dust, all incompatible materials.*
Hazardous Decomposition Products: *ZnO_x, SO_x, SbO_x, K_2O*

FIRE AND EXPLOSION DATA

Flammability: *Non 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: *ZnO_x, SO_x, SbO_x, K_2O*
Sensitivity to Impact: *None identified*
Sensitivity to Static discharge: *None identified*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

Toxicological Data:

Most antimony compounds are highly toxic. To the best of our knowledge, the physical, chemical and toxicological properties of sodium antimonate have not yet been thoroughly investigated.
LD_{50}: *$CuSO_4.5H_2O$: (oral, rat) 960 mg/kg; $ZnSO_4$: (oral, rat) 2,150 mg/kg; K_2SO_4 (oral, rat) 6.6 g/kg*
LC_{50}: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *Irritates the respiratory tract. Symptoms may include sore throat, coughing, laboured breathing and headache.*
In contact with skin: *May cause skin irritation. Risk of absorption is slight.*
In contact with eyes: *May irritate causing temporary pain and redness.*
Ingested: *Assume to be toxic. May cause gastrointestinal irritation, nausea and vomiting.*

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 cupric sulphate 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. Chronic exposure to zinc salts or antimony salts

can cause gastrointestinal upset, non-specific respiratory and nervous symptoms, dermatitis or ulceration of skin.

Carcinogenicity: *Potassium sulphate is not considered carcinogenic. Zinc salts have shown tumerogenic results in animal testing, but are unlikely to cause effects from industrial exposure.*

Teratogenicity: *Insufficient information available.*

Reproductive Effects: *Insufficient information available.*

Mutagenicity: *Insufficient information available.*

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 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: *April 1993*

Revision: *February 2011*

MSDS: *4449-8*

Proposed WHMIS Designation: *D2B ($CuSO_4$)*

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

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