CALEDON LABORATORY CHEMICALS

MATERIAL SAFETY DATA SHEET

(-)-ETHYL L-LACTATE

PRODUCT CODE NUMBER(S): 3730-5

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *(-)-Ethyl L-lactate; S(-)-2-Hydroxypropionic acid ethyl ester*
Chemical Family: *Saturated aliphatic hydroxy carboxylic acid ester*
Chemical Formula: $C_5H_{10}O_3$
Product Use: *Laboratory reagent*
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9
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HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	*%*	*TLV Units*	*CAS No.*
(-)-Ethyl L-lactate	*~97*	*Not established*	*687-47-8*

PHYSICAL DATA

Physical State: *Liquid*
Odour and Appearance: *Colourless liquid, mild, characteristic odour.*
Odour Threshold (ppm): *Not available*
Vapour Pressure (mm Hg): *1.5 mm Hg at 20°C*
Vapour Density (Air = 1): *4.1*
Evaporation Rate (bu ac=1): *0.22*
Boiling Point (degrees C): *154.5°C*
Freezing Point (degrees C): *-25°C*
pH: *Not available*
Specific Gravity: *1.0302 @ 20°C*
Coefficient of Water/Oil distribution: *Not available*

SHIPPING DESCRIPTION

UN: *1192*
T.D.G. Class: *3*
Pkg. Group: *III*

REACTIVITY DATA

Chemical Stability: *Stable; may partially decompose in water.*
Incompatibility with other substances: *May react vigorously or violently with strong oxidizing agents, strong acids.*
Reactivity: *Avoid excessive heat, flame and all sources of ignition, generation of mist or vapour, and all incompatible materials.*
Hazardous Decomposition Products: *CO, CO_2*

FIRE AND EXPLOSION DATA

Flammability: *Combustible liquid and vapour. Can form explosive mixtures with air at, or above 46°C. Vapours may travel to distant source of ignition and flash back. Vapours are heavier than air andmay collect in low areas, creating a flammability and toxicity hazard. Closed containers may rupture violently when exposed to excessive heat.*
Extinguishing Media: *CO_2, dry chemical powder, alcohol-resistant foam, water spray or fog. Water as spray or fog may also be used to cool containers, disperse vapours, dilute material and flush material away from fire. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (full face-piece, positive-pressure self-contained breathing apparatus) and clothing (full Bunker gear) sufficient to prevent inhalation of fumes or vapours and contact with skin and eyes. Containers may explode in heat of fire; withdraw immediately in case of rising sound from vent or discoloration of tank.*
Flash Point (Method Used): *46°C*
Autoignition Temperature: *294°C*
Upper Flammable Limit (% by volume): *11.4*
Lower Flammable Limit (% by volume): *1.5*
Hazardous Combustion Products: *CO_x, irritating fumes, smoke*
Sensitivity to Impact: *None identified*
Sensitivity to Static discharge: *Not expected to be sensitive; high electrical conductivity. Mixtures of vapour with air may be sensitive under certain conditions, when ignited by an electrostatic or other high-voltage spark, or other ignition source.*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

Toxicological Data:

LD_{50}: *(oral, rat) >5 g/kg; (oral, mouse) 2,500 mg/kg; (dermal, rabbit) >5 g/kg*
LC_{50}: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *Animal studiies indicate low toxicity; probably essentially non-toxic following short-term exposure. May cause mild irritation of the nose and throat.*
In contact with skin: *Not irritating in animal and human studies.*
In contact with eyes: *No human information and limited animal information available. Not expected to be irritating based on skin studies.*
Ingested: *No human information available. Animal information indicates low toxicity by ingestion. Ingestion not a typical route of occupational exposure.*

Effects of Chronic Exposure to Product:

Carcinogenicity: *No animal or human information available. Not expected to be carcinogenic.*

Teratogenicity: *No information available*
Reproductive Effects: *No information available*
Mutagenicity: *No information available*
Synergistic Products: *None known*

PREVENTIVE MEASURES

Engineering Controls: *Local exhaust recommended*
Respiratory Protection: *Dust/mist mask. For high or unknown concentrations, as in fire or spill conditions, wear NIOSH/OSHA approved air-purifying organic vapour cartridge respirator or full face-piece, positive-pressure self-contained breathing apparatus.*
Eye Protection: *Chemical safety goggles*
Skin Protection: *Impervious gloves. Other protective clothing, coveralls, apron, boots, sufficient to prevent contact.*
Other Personal Protective Equipment: *Safety shower and eye-wash fountain in work area.*
Leak and Spill Procedure: *Evacuate area, and provide maximum ventilation. Eliminate all sources of ignition. Cleanup personnel mst wear protective equipment and clothing sufficient to prevent inhalation of mists or vapours and contact with skin and eyes, and must be thoroughly trained in the handling of hazardous materials. Do not touch spilled material. Contain spill with sand, activated carbon adsorbent or other inert material. Prevent from entering sewers or waterways. Collect contaminated adsorbent in labelled containers and hold for disposal. Contaminated adsorbent may have the same hazards as the product; treat with caution. Wash site of spill thoroughly with detergent and water.*
Waste Disposal: *Follow all federal, provincial and local regulations for disposal.*
Handling Procedures and Equipment: *COMBUSTIBLE. Workers must be thoroughly trained in the hazards of this chemical and its safe use, and must wear protective equipment and clothing sufficient to prevent inhalation of mists or vapours and contact with skin and eyes. Eliminate all ignition sources. Post "No Smoking" signs. Bond and ground during liquid transfer. Use spark-resistant tools and avoid "splash filling" of containers. Keep storage and work areas free of combustible or incompatible materials. Avoid generating mists or vapours. Avoid contact and inhalation. Use the smallest possible amount for the purpose, in designated areas with adequate ventilation. Keep work area clean and free of extraneous materials. Empty containers may contain hazardous residues; treat with caution.*
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. Store away from all sources of heat and ignition, and from all incompatible materials.Protect from damage, and inspect frequently for signs of leaking.*

FIRST AID MEASURES

Specific Measures:

Eyes: *Flush eyes thoroughly with running water for five to ten (5-10) minutes, or until no trace of chemical remains, holding eyelids open while flushing. Get medical attention if irritation persists.*
Skin: *Remove contaminated clothing, including watches, rings, belts and shoes. Flush affected areas with soap and plenty of running water for five to ten (5-10) minutes, or until no trace of chemical remains. If irritation persists, get medical attention . Decontaminate clothing before reuse, os discard.*
Inhalation: *Move victim to fresh air. Give oxygen and get medical attention for any breathing difficulty.*
Ingestion: *If victim is alert and not convulsing, give 2 to 4 glasses of water to drink to dilute material. If vomiting occurs, rinse mouth and give more water to drink. If victim feels unwell, or if a large amount has been ingested, get medical attention.*

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: *June 10, 1991*
Revision: *December 2009*
MSDS: *3730-5*
Proposed WHMIS Designation: *B3*

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