CALEDON LABORATORY CHEMICALS

MATERIAL SAFETY DATA SHEET

ACETYL CHLORIDE

PRODUCT CODE NUMBER(S): 0650-5, 0651-5

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Acetyl chloride*
Chemical Family: *Acid chloride*
Chemical Formula: *CH_3COCl*
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

Ingredients	*%*	*TLV Units*	*CAS No.*
Acetyl chloride	*>95*	*Not established*	*75-36-5*

PHYSICAL DATA

Physical State: *Liquid*
Odour and Appearance: *Clear to yellow fuming liquid; punguent odour*
Odour Threshold (ppm): *Not available*
Vapour Pressure (mm Hg): *11.69 psi @ 20°C*
Vapour Density (Air = 1): *2.7*
Evaporation Rate: *Not available*
Boiling Point (degrees C): *51°C*
Freezing Point (degrees C): *-112°C*
pH: *Not applicable*
Specific Gravity: *1.11 @ 20°C*
Coefficient of Water/Oil distribution: *Not available*

SHIPPING DESCRIPTION

UN: *1717*
T.D.G. Class: *3.2*
Pkg. Group: *II*

REACTIVITY DATA

Chemical Stability: *Stable in closed containers at 25°C. Volatile. Wil fume when exposed to moist air. Readily hydrolyzes to form HCl and acetic acid. Reacts violently with water.*
Incompatibility with other substances: *May react violently or explosively with oxidizers, alkalies, DMSO, amines, water, alcohol acids. Reacts violently with water, acids, and alcohols to produce heat and toxic fumes. Water hydrolyzes material, liberating acidic gas, which in contact with metal can generate flammable/explosive hydrogen gas.*
Reactivity: *Avoid heat, hot surfaces, ignition sources, flames, all incompatible materials,moisture, generation of mist.*
Hazardous Decomposition Products: *Phosgene, hydrogen chloride gas, CO_x*

FIRE AND EXPLOSION DATA

Flammability: *Flammable liquid andvapour. Vapour can travel distances to ignition source and flashback. Vapours are heavier than air and can collect in low-lying areas and create an explosion hazard. Vapour forms explosive mixtrues with air at or above the flash point.*
Extinguishing Media: *CO_2, dry chemical. Do not use water or foam. Reacts violently with water. Fight fire from upwind, from a safe distance. FIrefighters must wear NIOSH approved positive-pressure, full face-piece self-contained breathing apparatus,and chemcial splash suit (Bunker gear will not be adequate). Containers may explode in heat of fire; withdraw immediately in case of rising sound from vent or discoloration of tank.*
Flash Point (Method Used): *4°C (CC)*
Autoignition Temperature: *390°C*
Upper Flammable Limit (% by volume): *Not available*
Lower Flammable Limit (% by volume): *5%*
Hazardous Combustion Products: *Emits toxic fumes under fire conditions: phosgene, hydrogen chloride gas, CO_x*
Sensitivity to Impact: *None identified*
Sensitivity to Static discharge: *Liquid or mixtures of vapour and air at concentrations in the flammable range may be ignited by a static charge of sufficient energy.*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

Toxicological Data:

LD_{50}: *(oral, rat) 910 mg/kg*
LC_{50}: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *Corrosive; causes choking, coughing, headache, dizziness, weakness, tightness in chest, shortness of breath, nausea and vomiting. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of pulmonary edema (shortness of breath, cyanosis) may not appear until several hours after exposure.*
In contact with skin: *Corrosive. Can cause severe burns, with tissue damage, ulceration, permanent scarring.*
In contact with eyes: *Corrosive. Contact with liquid or mist causes severe irritation or burns to the eyes with possible permanent damage and blindness. The degree of injury depends on the concentration and duration of contact.*
Ingested: *Corrosive. May cause severe burns to mouth, throat, stomach, with tissue desrtuction, pernament damage. May cause stomach perforation, severe abdominal pain, vomiting of blood; may be fatal.*

MSDS ACETYL CHLORIDE

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Effects of Chronic Exposure to Product:

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

PREVENTIVE MEASURES

Engineering Controls: *Non-sparking, grounded corrision-resistant exhaust ventilation, separate from other ventilation systems.*
Respiratory Protection: *Dust/mist mask. Use only in chemical fumehood. For conditions where mist or vapour is present, to the maximum use specified by the respirator supplier, NIOSH approved half- face high-efficiency dust/mist filter respirator, or NIOSH approved full face-piece high-efficiency 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.*
Skin Protection: *Impermeable gloves. Other protective clothing, apron, coveralls, boots as required to prevent contact.*
Other Personal Protective Equipment: *Safety shower and eye-wash fountain in work area.*
Leak and Spill Procedure: *Eliminate all sources of igntion. Evacuate area. Cleanup personnel must wear protective equipment and clothing sufficient to prevent inhalation of fumes or vapours and contact with skin, eyes, or clothing. DO NOT USE WATER; reacts violently with water. Cover spill with dry-lime, sand or soda ash, sweep up with non-sparking tools and place in closed container. Prevent from entering sewers or waterways. Arrange for removal by disposal company. After cleanup is complete, wash site of spillage thoroughly with running water.*
Waste Disposal: *Follow all federal, provincial and local regulations for disposal.*
Handling Procedures and Equipment: *FLAMMABLE, TOXIC, CORROSIVE. Workers must be thoroughly trained in the hazards of this material and its safe use, and must wear appropriate protective equipment and clothing. Post "No Smoking" signs. Ground and bond equipment to prevent static charge accumulation. Use non-sparking tools. Avoid splash filling. Keep workplace free of flammable materials. Keep away from water; do not use in a sprinklered area. Use non-sparking ventilation systems and electrical equipment. Avoid contact with skin and eyes and inhalation of vapours. Avoid generating vapours or mists. Use the smallest amount possible for the purpose, in an area with adequate ventilation. Empty containers may contain hazardous residues; treat with extreme caution.*
Storage Requirements: *Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Store away from ignition sources and incompatible materials. Keep containers tightly closed when not in use and when empty. Protect from damage. Inspect frequently for damage or leaks. Use grounded, non-sparking ventilation system and electrical equipment that does not provide a source of ignition. Storage facilities should be made of fire and corrosion-resistant materials, and have raised sills or ramps, with trenching to a safe area.*

FIRST AID MEASURES

Specific Measures:

Eyes: *Immediately flush eyes with running water for at least twenty (20) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear protective gloves to avoid contact during first aid procedures. Get medical advice immediately.*
Skin: *Under running water, remove contaminated clothing, including rings, watches, belts, shoes. Flush skin with plenty of running water for fifteen to twenty (15-20) minutes, or until no trace of chemical remains. Take particular care to clean folds, crevices, and creases of skin. Wear protective gloves to avoid contact during first aid procedures. Get medical attention immediately. Decontaminate clothing before reuse, or discard.*
Inhalation: *Remove source of contamination or move victim to fresh air (caution must be used by rescuers to avoid exposure to contaminating fumes). Give oxygen for breathing difficulty. If breathing has stopped, give artificial respiration. If the heart has stopped, start CPR. Get medical attention immediately. Symptoms of pulmonary edema may be delayed for up to 72 hours; if exposure was severe, continue to monitor for at least that long.*
Ingestion: *Never give anything by mouth if victim is losing consciousness, or is unconscious or convulsing. Rinse mouth thoroughly with water. Do not induce vomiting. Have victim drink 2 to 4 glasses of water to dilute. Get medical attention immediately.*

REFERENCES USED

CCINFO disc: Cheminfo, MSDS's
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: *February 20, 1990*
Revision: *February 2011*
MSDS: *0650-5, 0651-5*
Proposed WHMIS Designation: *B2; E; F*

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