



KENCRO

CHEMICALS

ACETIC ACID (GLACIAL)

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT IDENTIFIER: ACETIC ACID (GLACIAL)
PRODUCT USE: MANUFACTURE OF CELLULOSE ACETATE, VINYL ACETATE AND A VARIETY OF ACETATE ESTERS
CHEMICAL FAMILY: N/AV.
SUPPLIER'S NAME AND ADDRESS: KENCRO CHEMICALS LIMITED
2172 WYECROFT RD., UNIT #4
OAKVILLE, ON
L6L 5V6
905-827-4133
24 HR. EMERGENCY NUMBER: 613-996-6666 (CANUTEC)

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS | C.A.S. # | WT.% | TWAEV/TLV | LC50 INHALATION | LD50 ORAL | SKIN |
|-------------|----------|------|------------------------|--------------------|--------------------|-----------------------|
| ACETIC ACID | 64-19-7 | >80% | 10/25mg/m ³ | 2810ppm (MOUSE) | 3310mg/kg (RAT) | 1590mg/kg (RABBIT) |

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
CORROSIVE TO SKIN & EYES.
FLAMMABLE LIQUID, HEAVY VAPOUR TRAVELS, DISTANT IGNITION & FLASHBACK POSSIBLE.

SIGNS AND SYMPTOMS OF SHORT-TERM EXPOSURE:

SKIN CONTACT: CONCENTRATED PRODUCT SEVERELY CORROSIVE TO TISSUE; MAY CAUSE PERMANENT SCARRING; LESS CORROSIVE WITH DILUTION – 10% SLIGHTLY IRRITATING IF NOT REMOVED.
SKIN ABSORPTION: UNLIKELY; SEVERE LOCAL TISSUE DAMAGE PROBABLY PREVENTS ABSORPTION.
EYE CONTACT: CORROSIVE TO EYES; PERMANENT SCARRING OF CORNEA AND BLINDNESS; IRRITATING EVEN WHEN DILUTE.
INHALATION: IRRITATING; MAY CAUSE DELAYED BRONCHOCONSTRICTION AND DIFFICULTY BREATHING; AIRWAY HYPERACTIVITY MAY PERSIST FOR YEARS AFTER INHALATION.
INGESTION: CONCENTRATED PRODUCT SEVERELY CORROSIVE TO MOUTH, THROAT AND STOMACH.
POTENTIAL CHRONIC HEALTH EFFECTS: SEVERAL REPORTS OF LONG-LASTING BRONCHIAL HYPER-REACTIVITY FOLLOWING YEARS OF EXPOSURE TO ACETIC ACID VAPOUR; RODENTS EXPOSED TO VAPOUR LOST APPETITE.

SECTION 4: FIRST AID MEASURES

INHALATION: REMOVE FROM CONTAMINATED AREA PROMPTLY. CAUTION: RESCUER MUST NOT ENDANGER HIMSELF! IF BREATHING STOPS ADMINISTER ARTIFICIAL RESPIRATION AND SEEK MEDICAL AID PROMPTLY.
SKIN CONTACT: WASH WITH PLENTY OF WATER. FLUSH SKIN FOR A MINIMUM OF 30 MINUTES. REMOVE CONTAMINATED CLOTHING AND DO NOT REUSE UNTIL THOROUGHLY LAUNDERED. IF IRRITATION PERSISTS, REPEAT FLUSHING. OBTAIN MEDICAL ATTENTION IMMEDIATELY. DO NOT TRANSPORT VICTIM UNTIL THE RECOMMENDED FLUSHING PERIOD IS COMPLETED UNLESS FLUSHING CAN BE CONTINUED DURING TRANSPORT.

EYE CONTACT: WASH EYES WITH PLENTY OF WATER, HOLDING EYELIDS OPEN. IF IRRITATION PERSISTS, REPEAT FLUSHING. SEEK MEDICAL ASSISTANCE PROMPTLY IF THERE IS IRRITATION. DO NOT TRANSPORT VICTIM UNTIL THE RECOMMENDED FLUSHING PERIOD IS COMPLETED UNLESS FLUSHING CAN BE CONTINUED DURING TRANSPORT.

INGESTION: GIVE PLENTY OF WATER TO DILUTE PRODUCT. DO NOT INDUCE VOMITING (NOTE BELOW). KEEP VICTIM QUIET. IF VOMITING OCCURS, LOWER VICTIM'S HEAD BELOW HIPS TO PREVENT INHALATION OF VOMITED MATERIAL. SEEK MEDICAL ATTENTION PROMPTLY.

NOTES TO PHYSICIAN:
INADVERTENT INHALATION OF VOMITED MATERIAL MAY SERIOUSLY DAMAGE THE LUNGS. THE DANGER OF THIS IS GREATER THAN THE RISK OF POISONING THROUGH ABSORPTION OF THIS RELATIVELY LOW-TOXICITY SUBSTANCE. THE STOMACH SHOULD ONLY BE EMPTIED UNDER MEDICAL SUPERVISION, AND AFTER THE INSTALLATION OF AN AIRWAY TO PROTECT THE LUNGS.

SECTION 5: FIRE FIGHTING MEASURES

FIRE HAZARDS/CONDITION OF FLAMMABILITY:

SUMMER FIRE POTENTIAL: IN HOT (OVER 39°C) WEATHER BLANKET SPILL WITH FOAM AS A PRECAUTION AGAINST ACCIDENTAL IGNITION. TAKE CARE TO AVOID SPARKS – DO NOT OPERATE (TURN ON OR OFF) ELECTRICAL APPLIANCES NEAR SPILL, UNLESS EXPLOSION PROOF.

FLASH POINT: 39°C / 103°F

FLASH POINT METHOD: CLOSED CUP

AUTO IGNITION TEMPERATURE: 464°C / 867°F

FLAMMABLE LIMITS: 4% - 16%

(% BY VOL.)

OXIDIZING PROPERTIES: N/AV.

FLAME PROJECTION LENGTH: N/AV.

EXPLOSION DATA: SENSITIVITY TO MECHANICAL IMPACT/STATIC DISCHARGE:

NOT EXPECTED TO BE SENSITIVE TO MECHANICAL IMPACT OR STATIC DISCHARGE.

STATIC CHARGE ACCUMULATION:

CANNOT ACCUMULATE A STATIC CHARGE ON AGITATION OR PUMPING.

SUITABLE EXTINGUISHING MEDIA:

FOAM, DRY CHEMICAL, WATER FOG OR SPRAY. USE WATER SPRAY TO KEEP FIRE-EXPOSED CONTAINERS COOL.

SPECIAL FIRE-FIGHTING PROCEDURES/EQUIPMENT:

FIRE FIGHTERS MUST WEAR SCBA (SELF-CONTAINED BREATHING APPARATUS).

HAZARDOUS COMBUSTION PRODUCTS:

CARBON MONOXIDE, NITROGEN OXIDES, UNBURNT ACID, PART OXIDIZED HYDROCARBON FRAGMENTS.

SECTION 6: ACCIDENTAL RELEASE MEASURES

LEAK AND SPILL PROCEDURES:

DYKE TO CONTROL SPILLAGE AND PREVENT ENVIRONMENTAL CONTAMINATION. DYKE WITH INERT MATERIAL (SAND, ASH, ETC.). NEUTRALIZATION OF MATERIAL MAY BE ACCOMPLISHED WITH SODA ASH, DILUTE CAUSTIC SODA OR LIME. ONLY TRAINED AND PROPERLY PROTECTED PERSONNEL SHOULD BE INVOLVED IN SPILL CLEAN-UP OPERATIONS. ELIMINATE ALL SOURCES OF IGNITION. VENTILATE CONTAMINATED AREA; RECOVER FREE LIQUID WITH SUITABLE PUMPS; ABSORB RESIDUE ON AN INERT SORBENT, SWEEP & PICK UP USING PLASTIC SHOVEL & STORE IN CLOSED CONTAINERS FOR RECYCLING OR DISPOSAL; ANY RESIDUE MAY BE NEUTRALIZED WITH SODIUM CARBONATE FOLLOWED BY RINSING TO SEWER.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING PROCEDURES:

STORE BELOW 40°C, BUT ABOVE 17°C. KEEP AWAY FROM SOURCES OF IGNITION AND SUBSTANCES LISTED IN PART 7. ALWAYS ENSURE THAT CONTAINERS WHEN EMPTY OR FULL, OR PART FULL, ARE TIGHTLY SEALED UNLESS IN USE. AVOID BREATHING PRODUCT VAPOUR. USE WITH ADEQUATE VENTILATION. IF DEALING WITH A SPILL, VENTILATE WELL AND WEAR A SUITABLE RESPIRATOR WITH ORGANIC VAPOUR, ACID GAS CARTRIDGE. NEVER CUT, DRILL, WELD OR GRIND ON OR NEAR THIS CONTAINER. AVOID CONTACT WITH SKIN AND WASH WORK CLOTHES FREQUENTLY. AN EYE BATH AND SAFETY SHOWER MUST ALWAYS BE AVAILABLE NEAR THE WORKPLACE.

STORAGE REQUIREMENTS:

STORE AWAY FROM OXIDIZING MATERIALS AND ALL SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE.

INCOMPATIBLE MATERIALS:

DANGEROUSLY REACTIVE WITH STRONG OXIDIZING AGENTS AND STRONG ALKALIES. ALSO REACTS WITH MOST METALS (EXCEPT ALUMINIUM) TO PRODUCE HYDROGEN GAS. REACTS WITH PHOSPHOROUS TRICHLORIDE AND PHOPHOROUS ISOCYANCATE.

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| SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION |
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EXPOSURE LIMITS

| INGREDIENTS | ACGIH TLV | | OSHA PEL | |
|-------------|---------------------------|---------------------------|---------------------------|------------|
| | TWA | STEL | PEL | STEL |
| ACETIC ACID | 10ppm/25mg/m ³ | 15ppm/37mg/m ³ | 10ppm/25mg/m ³ | NOT LISTED |

SEE COMPOSITION/INFORMATION ON INGREDIENTS, SECTION 2.

ENGINEERING CONTROLS:

MECHANICAL VENTILATION MAY BE REQUIRED TO MAINTAIN AIRBORNE TITRE BELOW TWA EV. USE PROCESS ENCLOSURE, LOCAL EXHAUST VENTILATION TO MAINTAIN LEVELS BELOW EXPOSURE LIMITS.

GLOVES/TYPE:

BUTYL GLOVES RECOMMENDED – OTHER TYPES MAY ALSO PROTECT; CONSULT SUPPLIER TO CONFIRM SUITABILITY.

RESPIRATORY/TYPE:

A RESPIRATOR WITH ORGANIC VAPOUR, ACID GAS CARTIDGE MUST BE AVAILABLE FOR ESCAPE PURPOSES, SHOULD VENTILATION OR ENGINEERING CONTAINMENT FAIL.

EYE/TYPE:

SAFETY GLASSES WITH SIDE SHIELDS – ALWAYS PROTECT THE EYES.

CLOTHING/TYPE:

WEAR IMPERMEABLE (ABOVE) APRON, BOOTS & LONG SLEEVES IF THERE IS ANY DANGER OF SPLASHING.

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| SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES |
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| PHYSICAL STATE: | HYGROSCOPIC LIQUID | APPEARANCE: | CLEAR, COLOURLESS |
| ODOUR: | PUNGENT, PENETRATING VINEGAR ODOUR | | |
| ODOUR THRESHOLD: | 0.07ppm – GEOMETRIC MEAN | | |
| PH: | 2.4 (6% SOLUTION) – HIGHLY ACIDIC | SPECIFIC GRAVITY: | 1.05 (20/20°C) |
| COEFFICIENT OF WATER/OIL DISTRIBUTION: | N/AV. | SOLUBILITY IN WATER: | COMPLETE |
| EVAPOURATION RATE: | 1 (BUTYL ACETATE = 1) | VAPOUR DENSITY (AIR=1): | 2.1 |
| BOILING POINT: | 118°C (GLACIAL 99.5%) 110.0°C (92%) | 105.5°C (80%) 102.0°C (56%) | 100.5°C (28%) |
| FREEZING POINT: | 16.6°C (GLACIAL 99.5%) 4°C (92%) | -7°C (80%) -24°C (56%) | -10°C (28%) |
| MOLECULAR WEIGHT: | 60GRAMS PER MOLE (GLACIAL) | | |
| MOLECULAR FORMULA: | CH ₃ COOH | | |

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| SECTION 10: REACTIVITY AND STABILITY DATA |
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REACTIVITY: DANGEROUSLY REACTIVE WITH STRONG OXIDIZING AGENTS AND STRONG ALKALIES. ALSO REACTS WITH MOST METALS (EXCEPT ALUMINIUM) TO PRODUCE HYDROGEN GAS. REACTS WITH PHOSPHOROUS TRICHLORIDE AND PHOPHOROUS ISOCYANCATE.

STABILITY: STABLE UNDER NORMAL CONDITIONS. WILL NOT NORMALLY POLYMERIZE – POLYMERIZES WITH ACETALDEHYDE.

CONDITIONS TO AVOID:

KEEP AWAY FROM HEAT & FLAME.

HAZARDOUS DECOMPOSITION PRODUCTS:

NONE. APART FROM HAZARDOUS COMBUSTION PRODUCTS.

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| SECTION 11: TOXICOLOGICAL INFORMATION |
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CARCINOGENIC STATUS: NOT CONSIDERED A CARCINOGEN IN HUMANS OR ANIMALS.

REPRODUCTIVE EFFECTS: NO KNOWN EFFECT IN HUMANS OR ANIMALS.

TERATOGENICITY: N/AV.

MUTAGENICITY: NO KNOWN EFFECT ON HUMANS OR ANIMALS.

SENSITIZATION TO MATERIAL:

SEE ROUTE OF ENTRY: SKIN CONTACT.

SYNERGISTIC MATERIALS:

POTENTIATES THE EFFECTS OF SEVERAL KNOWN CARCINOGENS.

ADDITIONAL HEALTH HAZARDS:

SKIN CONTACT; MAY CAUSE SEVERE BURNS, PAIN AND BROWNISH OR YELLOWISH STAINS, PROLONGED OR REPEATED EXPOSURE TO DILUTE SOLUTIONS MAY CAUSE IRRITATION AND DERMATITIS. EYE CONTACT; MAY CAUSE SEVERE IRRITATION, CORNEAL BURNS AND CONJUNCTIVITIS, POSSIBLE CORNEAL DAMAGE. INHALATION OF MISTS OR VAPOURS MAY CAUSE SEVERE IRRITATION OF EYES, NOSE AND THROAT, COUGHING, CHOKING AND DIFFICULTY IN BREATHING. SEVERE OVEREXPOSURE MAY RESULT IN DELAYED PULMONARY EDEMA, WHICH CAN BE FATAL. PROLONGED OR REPEATED EXPOSURE MAY CAUSE DISCOLORATION AND EROSION OF TEETH. INGESTION; MAY CAUSE SEVERE BURNING PAIN IN THE MOUTH, THROAT AND ABDOMEN. VOMITING, DIARRHEA AND PERFORATION OF THE ESOPHAGUS OR STOMACH MAY OCCUR.

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| SECTION 12: ECOLOGICAL INFORMATION |
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IMPORTANT ENVIRONMENTAL CHARACTERISTICS:

THIS PRODUCT IS READILY METABOLIZED BY ALL LIVING CREATURES AND CANNOT BIOACCUMULATE. THIS PRODUCT DEGRADES READILY AND RAPIDLY IN THE PRESENCE OF OXYGEN; 58% BIODEGRADATION IN 5 DAYS. THIS PRODUCT REACTS WITH ATMOSPHERIC HYDROXYL RADICALS; ITS ESTIMATED HALF-LIFE IN AIR IS 22 DAYS; HOWEVER RAIN WILL KNOCK DOWN ANY VAPOUR VERY RAPIDLY. THIS PRODUCT IS WATER SOLUBLE AND WILL MOVE READILY IN SOIL AND WATER, HOWEVER, SOIL BIOTA MAY WELL METABOLIZE IT BEFORE IT REACHES AN AQUIFER.

ECOTOXICOLOGICAL:

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| LC50 (FISH 96HR) | 75MG/LITRE (BLUEGILL SUNFISH), 251MG/LITRE (MOSQUITO FISH), NEUTRALIZED AT PH6.9-8.7 |
| EC50 (CRUSTACEA, 24HR) | 6000MG/LITRE (DAPHNIA MAGNA) |

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| SECTION 13: DISPOSAL CONSIDERATIONS |
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METHOD OF DISPOSAL: DO NOT FLUSH TO SEWER, RECYCLE IF POSSIBLE, MAY BE INCINERATED IN APPROVED FACILITY.

CONTAINERS: DRUMS SHOULD BE REUSED. RECONDITION AND PRESSURE TEST BY A LICENSED RECONDITIONER PRIOR TO RE-USE. PAILS MUST BE VENTED AND THOROUGHLY DRIED PRIOR TO CRUSHING AND RECYCLING. IBC'S (INTERMEDIATE BULK CONTAINERS) POLYETHYLENE BOTTLE MUST BE PRESSURE TESTED AND RECERTIFIED AT 30 MONTHS. REPLACE AT 60 MONTHS (5YRS). STEEL CONTAINERS MUST BE INSPECTED, PRESSURE TESTED AND RECERTIFIED EVERY 5 YEARS. NEVER CUT, DRILL, WELD OR GRIND ON OR NEAR THIS CONTAINER, EVEN IF EMPTY.

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| SECTION 14: TRANSPORTATION INFORMATION |
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PROPER SHIPPING NAME: ACETIC ACID, GLACIAL
TDG CLASSIFICATION: GLACIAL & 92% CLASS 8(3), UN 2789, PACKING GROUP II
MARINE POLLUTANT: NOT A MARINE POLLUTANT

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| SECTION 15: REGULATORY INFORMATION |
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WHMIS CLASSIFICATION: CLASS B3 – COMBUSTIBLE LIQUID, FLASH POINT >38°C & <93°C
 CLASS E – CORROSIVE MATERIAL

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| SECTION 16: OTHER INFORMATION |
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| LEGEND: | ACGIH | AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS |
| | CAS # | CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER |
| | EC | EFFECTIVE CONCENTRATION |
| | LC | LETHAL CONCENTRATION |
| | LD | LETHAL DOSE |
| | MSHA | MINE SAFETY AND HEALTH ADMINISTRATION |
| | N/AP. | NOT APPLICABLE |
| | N/AV. | NOT AVAILABLE |
| | NIOSH | NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH |
| | OSHA | OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION |
| | PEL | PERMISSIBLE EXPOSURE LIMIT |
| | SCBA | SELF CONTAINED BREATHING APPARATUS |
| | STEL | SHORT TERM EXPOSURE LIMIT |
| | TDG | TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS |

TLV
TWAEV
WHMIS

THRESHOLD LIMIT VALUE
TIME WEIGHTED AVERAGE EXPOSURE VALUE
WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

PREPARED BY:

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MSDS PREPARATION DATE:

(DD/MM/YYYY)
01/06/2011

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