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MATERIAL SAFETY DATA SHEET
ETHYL CHLORIDE



I. IDENTIFICATION

TRADE NAME SYNONYM: ETHYL CHLORIDE
REVISION DATE: MAY, 2001 BY S. WOJCIK, A. GROYS
CHEMICAL NAME SYNONYMS: ETHYL CHLORIDE, CHLOROETHANE HYDROCHLORIC ETHER
CAS NO.: 75-00-3
CHEMICAL FAMILY: HALOGENATED HYDROCARBON
FORMULA: C₂H₅Cl



II. HAZARDOUS INGREDIENTS

PRINCIPAL HAZARDOUS COMPONENTS CAS NO. % EXPOSURE LIMITS

ETHYL CHLORIDE 75-00-3 100 OSHA PEL: 1000 PPM
ACGIH TLV: 100 PPM SKIN A3, SEE SECTION V.

NPCA-HMIS RATINGS:

HEALTH 1

FLAMMABILITY 4

REACTIVITY 0

PERSONAL PROTECTION SEE SEC. VIII.

EPA HAZARD CATEGORIES:

CHRONIC HEALTH: NO

ACUTE HEALTH: YES

FIRE HAZARD: YES

PRESSURE HAZARD: YES

REACTIVITY HAZARD: NO

LISTS:

EXTREMELY HAZARDOUS SUBSTANCE: NO

CERCLA HAZARDOUS SUBSTANCE: YES

TOXIC CHEMICALS: YES

III. PHYSICAL DATA

BOILING POINT: 54.1 DEG. F (12.3 DEG. C)
FREEZING POINT: -213.5 DEG. F (-136.4 DEG. C)
EVAPORATION RATE: GREATER THAN 1 (BUTYL ACETATE = 1)
VAPOR PRESSURE AT 68 DEG. F (20 DEG. C): 20.1 PSIA (5.4 PSIG)
SPECIFIC GRAVITY (H₂O = 1): 0.8939 AT 68 DEG. F
VAPOR DENSITY (AIR = 1): AT BP 2.2
PERCENT VOLATILE BY VOLUME: 100
SOLUBILITY IN WATER: REACTS WITH WATER AT CONCENTRATIONS OF 0.57G/108G WATER AT 68 DEG. F
APPEARANCE AND ODOR: COLORLESS LIQUID WITH A PUNGENT, ETHER-LIKE ODOR, LIQUID IS WATER WHITE

IV. FIRE AND EXPLOSION HAZARDS

FLASH POINT(METHOD USED): -45 DEG. F (-42.8 DEG. C) OC I-58 DEG. F (-50 DEG. C) CC
AUTO-IGNITION TEMPERATURE: 966 DEG. F (519 DEG. C)

FLAMMABLE OR EXPLOSIVE LIMITS IN AIR BY % VOLUME:
LOWER: 3.8
UPPER: 15.4

EXTINGUISHING MEDIA: DRY CHEMICAL OR CARBON DIOXIDE FOR SMALL FIRES
ELECTRICAL CLASSIFICATION: GROUP C. NFPA NO. 70

SPECIAL FIREFIGHTING PROCEDURES:
STOP FLOW OF GAS. FROM A SAFE DISTANCE, USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL. ALLOW FIRE TO BURN ITSELF OUT. USE A POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS. RESCUE PERSONNEL SHOULD AVOID UNNECESSARY EXPOSURE.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
UPON COMBUSTION, ETHYL CHLORIDE FORMS PHOSGENE. EXTREME HAZARD OF FIRE OR EXPLOSION MAY RESULT FROM STATIC ELECTRIC DISCHARGE OR OTHER IGNITION SOURCES. VAPOR IS HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASHBACK. VAPOR MAY EXPLODE IF IGNITED IN ENCLOSED AREAS.

V. HEALTH HAZARDS

OSHA PEL: 1000 PPM
ACGIH TLV: 100 PPM

EFFECTS OF OVEREXPOSURE:

INHALATION: HEADACHE, DIZZINESS, NAUSEA, VOMITING, LOSS OF COORDINATION AND DISORIENTATION MAY PRODUCE NARCOTIC AND ANESTHETIC EFFECTS. MAY PRODUCE CENTRAL NERVOUS SYSTEM DEPRESSION, RESPIRATORY PARALYSIS, OR FATAL COMA WITH RESPIRATORY OR CARDIAC ARREST. MAY SENSITIZE THE MYOCARDIUM TO ENDOGENOUS EPINEPHRINE, CAUSING DANGEROUS DYSRHYTHMIAS. ALTHOUGH ABSORBED THROUGH LUNGS AND SKIN, IT ALSO IS RAPIDLY GIVEN OFF THROUGH THE LUNGS.

V. HEALTH HAZARDS (continued)

SKIN:

RAPID EVAPORATION OF LIQUID MAY CAUSE FROSTBITE. SYMPTOMS OF FROSTBITE ARE BLANCHING OF THE SKIN, COLD FEELING NUMBNESS. CUTANEOUS SENSITIZATION MAY OCCUR, BUT IS EXTREMELY RARE. FREEZING CAN OCCASIONAL ALTER PIGMENTATION. A SINGLE PROLONGED SKIN EXPOSURE IS NOT LIKELY TO RESULT IN ABSORPTION OF HARMFUL AMOUNTS.

EYES: IS A SLIGHT IRRITANT TO MUCOSAL TISSUE.

ETHYL CHLORIDE HAS A ACGIH CARCINOGENIC DESIGNATION OF A3. ETHYL CHLORIDE IS KNOWN AS A LIVER AND KIDNEY TOXIN. IT IS THE LEAST TOXIC OF THE CHLOROHYDROCARBONS AND NO FORM OF CHRONIC POISONING HAS BEEN REPORTED. REPEATED EXCESSIVE EXPOSURE MAY CAUSE INCOORDINATION AND/OR ANESTHESIA.

EMERGENCY FIRST AID PROCEDURES FOR:

INHALATION:

MINOR SYMPTOMS ARE RELIEVED BY BREATHING FRESH UNCONTAMINATED AIR. IF BREATHING HAS STOPPED, OR IS IMPAIRED, GIVE ASSISTED RESPIRATION (I.E., MOUTH-TO-MOUTH). SUPPLEMENTAL OXYGEN SHOULD BE GIVEN. KEEP VICTIM WARM AND QUIET. SEEK MEDICAL ATTENTION PROMPTLY.

EYES:

IF LIQUID ENTERS THE EYES, FLOOD WITH LARGE AMOUNTS OF WATER. CONTACT LENSES SHOULD NOT BE WORN.

SKIN:

UNINTENTIONAL FREEZING:

FLOOD OR SOAK FROZEN TISSUE IN TEPID WATER(105-115 DEG. F). DO NOT USE HOT WATER.

INGESTION: SEEK MEDICAL HELP IMMEDIATELY.

VI. REACTIVITY DATA

STABILITY:

() UNSTABLE

(X) STABLE

CONDITIONS TO AVOID:

LIQUID ETHYL CHLORIDE WILL ATTACK SOME FORMS OF PLASTIC, RUBBER AND COATINGS. SOURCES OF HEAT, IGNITION, OR MOISTURE (NOTE: REACTS WITH WATER TO FORM HCl.)

INCOMPATIBILITY (MATERIALS TO AVOID):

SODIUM, POTASSIUM, CALCIUM, POWDERED ALUMINUM, ZINC & MAGNESIUM

HAZARDOUS DECOMPOSITION PRODUCTS:

FORMS PHOSGENE ON COMBUSTION, FORMS HYDROGEN CHLORIDE WITH WATER OR STEAM.

HAZARDOUS POLYMERIZATION:

() MAY OCCUR

(X) WILL NOT OCCUR

VI. REACTIVITY DATA (continued)

CONDITIONS TO AVOID: N/A

VII. SPILL OR LEAK PROCEDURES

IN CASE MATERIAL IS RELEASED OR SPILLED:
ELIMINATE ALL SOURCES OF IGNITION. ALLOW SPILLED ETHYL CHLORIDE TO EVAPORATE,
VENTILATE ENCLOSED AREAS. IN CASE OF LARGE SPILL, EVACUATE ALL PERSONNEL FROM
AREA.

FOR ENTRY INTO UNKNOWN CONCENTRATIONS THAT COULD BE IDLH (\geq 3800 PPM):
FULL FACE SELF CONTAINED BREATHING APPARATUS:
PRESSURE DEMAND, POSITIVE PRESSURE. CARRY AN AUXILIARY SCBA.

ESCAPE INSTRUCTIONS: FULL FACE GAS MASK, ORGANIC VAPOR OR SCBA

WASTE DISPOSAL METHOD:
COMPLY WITH FEDERAL, STATE AND LOCAL LAWS; RETURN UNUSED QUANTITIES TO
GEBAUER CO BY MAKING APPROPRIATE ARRANGEMENTS FOR PICKUP AND TRANSPORTATION.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:
FOR LARGE SPILLS (\geq 1000 PPM TWA AND \leq 3800 PPM INSTANTANEOUS EXPOSURE):
FULL FACE, POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS SHOULD BE
AVAILABLE FOR EMERGENCY USE.

FOR CLINICAL SETTING:
MINIMIZE INHALATION OF VAPORS BY PATIENT, ESPECIALLY WHEN APPLYING TO HEAD
AND NECK.

VENTILATION: USE LOCAL EXHAUST TO PREVENT ACCUMULATION OF VAPORS
MECHANICAL (GENERAL): NONE

PROTECTIVE GLOVES:
FOR LARGE SPILLS ONLY (ABOVE 3800 PPM): TEFLON(R*) OR KEL-F(R*)
DO NOT USE PVC. SILICONE OR NATURAL RUBBER

EYE PROTECTION:
FOR LARGE SPILLS (\geq 1000 PPM TWA AND \leq 3800 PPM INSTANTANEOUS EXPOSURE):
SA(R*)/SCBAF): SAFETY GOGGLES OR GLASSES OR FACE SHIELD.
FOR PATIENT USE: COVER PATIENT'S EYES, IF APPLYING ON OR NEAR FACE.

OTHER PROTECTIVE EQUIPMENT: EYEBATH

FOR CLINICAL SETTING: GLOVES AND GOGGLES ARE NOT REQUIRED.

IX. SPECIAL PRECAUTIONS

HANDLING AND STORAGE:

PROTECT AGAINST PHYSICAL DAMAGE. STORE IN COOL, DRY, WELL-VENTILATED AREA. DO NOT SUBJECT CONTAINERS TO TEMPERATURES ABOVE 120 DEG. F (50 DEG. C). USE ONLY IN WELL-VENTILATED AREA. DO NOT STORE ON OR NEAR HIGH FREQUENCY ULTRASOUND EQUIPMENT.

OTHER PRECAUTIONS:

DO NOT USE NEAR SPARKING MOTORS OR OTHER NON-EXPLOSIVE EQUIPMENT. NO SMOKING SIGNS SHOULD BE POSTED WHEREVER ETHYL CHLORIDE IS USED OR STORED.

D.O.T. PROPER SHIPPING NAME: ETHYL CHLORIDE
ID NO.: UN 1037

D.O.T. CLASSIFICATION: FLAMMABLE GAS
ID HAZARD CLASS: 2.1

DOT LABELING: "FLAMMABLE GAS"

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