MATERIAL SAFETY DATA SHEET
EM SCIENCE
A DIVISION OF EM INDUSTRIES
P.O. BOX 70
480 DEMOCRAT RD.
GIBBSTOWN, N.J. 08027

PREPARATION DATE ........: OCT 6, '89
DATE SENT TO CUSTOMER....: DEC 20, '89
INFORMATION PHONE NUMBER :
(609) 354-9200
CHEMTREC EMERGENCY NUMBER:
1-800-424-9300

NFPA HAZARD RATINGS

- HEALTH ....: 2 FLAMMABILITY ....: 0
- REACTIVITY : 0 SPECIAL HAZARDS:

SECTION I - GENERAL INFORMATION
CATALOG NUMBER(S): CX1051 CX1053 CX1054 CX1055 CX1055P
CX1057 CX1059 CX1060 CX1050
CHEMICAL NAME.... : CHLOROFORM
TRADE NAME....... : TRICHLOROMETHANE
C.A.S. NUMBER....: 67-66-3
CHEMICAL FAMILY..: CHLORINATED HYDROCARBON
FORMULA...........: CHCl3
MOLECULAR WEIGHT: 119.38
DOT SHIPPING NAME: CHLOROFORM
DOT NUMBER........: UN1888

SECTION II - HAZARDOUS INGREDIENTS
NONE OTHER THAN SPECIFIED PRODUCT

SECTION III- PHYSICAL DATA
BOILING POINT (°C 760 MM HG): 61.2°C
MELTING POINT (°C)...........: -63.5°C
SPECIFIC GRAVITY(H.2.O = 1)......: 1.49
VAPOR PRESSURE (MM HG)........: 167 20°C
PERCENT VOLATILE BY VOL (%)...: 100
VAPOR DENSITY (AIR=1).........: 4.12
EVAPORATION RATE (BUAC=1).....: 0.56
SOLUBILITY IN WATER (X).......: SLIGHT
APPEARANCE AND ODOR.........: CLEAR, COLORLESS LIQUID, SWEET,
ETHEREAL ODOR

SECTION IV - FIRE & EXPLOSION HAZARD DATA

THE STATEMENTS CONTAINED HEREIN ARE OFFERED FOR INFORMATIONAL PURPOSES ONLY AND
ARE BASED UPON TECHNICAL DATA THAT EM SCIENCE BELIEVES TO BE ACCURATE. IT IS
INTENDED FOR USE ONLY BY PERSONS HAVING THE NECESSARY TECHNICAL SKILL AND AT
THEIR OWN DISCRETION AND RISK. SINCE CONDITIONS AND MANNER OF USE ARE OUTSIDE
CONTROL, WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FIT-
NESS OR OTHERWISE.
FLASH POINT (F)........: NONE (TCC)
FLAMMABLE LIMITS LEL %: N/A
FLAMMABLE LIMITS UEL %: N/A
EXTINGUISHING MEDIA.....: USE ANY SUITABLE FOR ADJACENT MATERIALS
FIRE FIGHTING PROCEDURE: WEAR SELF-CONTAINED BREATHING APPARATUS
FIRE & EXPL. HAZARDS....: PRODUCES HIGHLY TOXIC FUMES ON THERMAL DECOMPOSITION

SECTION V - HEALTH HAZARD DATA (ACUTE AND CHRONIC)
ACGIH TLV/OSHA PEL (TWA)......: (TLV) 10 PPM
(OSHA) 2 PPM

TOXICITY DATA.....................:
ORL-HMN LDLO: 140 MG/KG
ORL-RAT LD50: 908 MG/KG
IHL-RAT LC50: 47702 UG/CM2/4H

SYMPTOMS OF EXPOSURE ...........:
HARMFUL IF INHALED OR SWALLOWED.
REPEATED EXPOSURE TO LOW CONCENTRATIONS MAY DAMAGE LIVER, KIDNEYS AND HEART.
ALSO CAUSES HEADACHE, DROWSINESS, MENTAL CONFUSION, NAUSEA AND UNCONSCIOUSNESS.
HIGHLY SUSPECTED CARCINOGEN PER NTP AND IARC.
MEDICAL COND. AGGRAVATED BY EXPOS: PREGNANCY, ALCOHOLISM, LIVER, HEART AND KIDNEY CONDITIONS

ROUTES OF ENTRY...............: INHALATION, INGESTION OR SKIN CONTACT.
CARCINOGENICITY.................:
PROVEN ANIMAL CARCINOGENIC SUBSTANCE. POSSIBLE CANCER HAZARD.

EMERGENCY FIRST AID.............:
GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE.
SKIN: IMMEDIATELY FLUSH THOROUGHLY WITH LARGE AMOUNTS OF WATER.
EYES: IMMEDIATELY FLUSH THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES
INHALATION: REMOVE TO FRESH AIR; GIVE ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED.
INGESTION: IF CONSCIOUS, INDUCE VOMITING.
GET IMMEDIATE MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA
STABILITY....................: YES
CONDITIONS TO AVOID .........:
CONTACT WITH OPEN FLAME, ELECTRIC ARCS, OTHER HOT SURFACES
MATERIALS TO AVOID..........: ( ) WATER  ( ) ACIDS
( ) BASES  ( ) CORROSIVES  ( ) OXIDIZERS
( ) OTHER: ALKALI METALS, ACETONE, DINITROGEN TETRAOXIDE, FLUORINE,
TRIISOPROPYLPHOSPHINE, DISILANE, MAGNESIUM

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HAZARDOUS POLYMERIZATION: DOES NOT OCCUR
HAZARDOUS DECOMPOSITION: CO₂, PHOSGENE, OTHER CHLORINE COMPOUNDS

SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:
- VENTILATE AREA; DIKE SPILL
  TAKE UP WITH ABSORBENT AND CONTAINERIZE FOR PROPER DISPOSAL
WASTE DISPOSAL: TO BE PERFORMED IN COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION
VENTILATION, RESPIRATORY PROTECTION, PROTECTIVE CLOTHING, EYE PROTECTION:
- MATERIAL MUST BE HANDLED OR TRANSFERRED IN AN APPROVED FUME HOOD
  OR WITH EQUIVALENT VENTILATION
  PROTECTIVE GLOVES (VITON, PVA OR EQUIVALENT) SHOULD BE WORN
  TO PREVENT SKIN CONTACT
  SAFETY GLASSES WITH SIDE SHIELDS SHOULD BE WORN AT ALL TIMES
  NIOSH/MSHA-APPROVED RESPIRATOR SHOULD BE WORN IN THE ABSENCE OF ADEQUATE VENTILATION.

SECTION IX - SPECIAL PRECAUTIONS
HANDLING & STORAGE: *
- KEEP CONTAINER TIGHTLY CLOSED
  DO NOT BREATHE VAPOR
  DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING
  STORE IN A COOL, WELL-VENTILATED AREA, OUT OF DIRECT SUNLIGHT
WORK/HYGIENIC PRACTICES: WASH THOROUGHLY AFTER HANDLING. DO NOT TAKE
  INTERNALLY. EYE WASH AND SAFETY EQUIPMENT SHOULD BE READILY AVAILABLE.

SECTION X - OTHER INFORMATION

COMMENTS: TESTS ON LABORATORY ANIMALS INDICATE MATERIAL MAY CAUSE TUMOURS
  AND MAY PRODUCE ADVERSE MUTAGENIC AND REPRODUCTIVE EFFECTS
REVISION HISTORY: 08/01/81, 9/83, 12/85, 6/4/86, 9/20/86,
  2/23/87, 10/27/87

N/A = NOT AVAILABLE: MSDS-CX1051 PAGE #: 03