

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

ATTN: SAFETY DIRECTOR
BEZRYADIN
HARVARD UNIVERSITY
DIVISION OF APPLIED SCIENCES
PURCHASING DEPT/PIERCE HALL
29 OXFORD STREET
CAMBRIDGE MA 02138-2901

EMERGENCY PHONE 1-414-273-3850

DATE 09/29/97
CUST#: 250120
PO#: 69112

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 1

SECTION 1. - - - - - CHEMICAL IDENTIFICATION - - - - -

CATALOG #: 27057-1
NAME: 1,2-DICHLOROETHANE, 99.8%, HPLC GRADE

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -

CAS #: 107-06-2
MF: C2H4CL2
EC NO: 203-458-1

SYNONYMS

AETHYLENCHLORID (GERMAN) * 1,2-BICHLOROETHANE * BICHLORURE D'ETHYLENE (FRENCH) * BORER SOL * BROCID * CHLORURE D'ETHYLENE (FRENCH) * CLORURO DI ETHENE (ITALIAN) * 1,2-DCE * DESTRUOL BORER-SOL * 1,2-DICHLOROETHAN (DUTCH) * 1,2-DICHLOR-AETHAN (GERMAN) * DICHLORREMULSION * 1,2-DICHLOROETHANE * DI-CHLOR-MULSION * DICHLORO-1,2-ETHANE (FRENCH) * ALPHA, BETA-DICHLOROETHANE * SYM-DICHLOROETHANE * 1,2-DICHLOROETHANE (OSHA) * DICHLOROETHYLENE * 1,2-DICLOROETANO (ITALIAN) * DUTCH LIQUID * DUTCH OIL * EDC * ENT 1,656 * ETHANE DICHLORIDE * ETHYLEENDICHLORIDE (DUTCH) * ETHYLENE CHLORIDE * ETHYLENE DICHLORIDE (ACGIH:DOT:OSHA) * 1,2-ETHYLENE DICHLORIDE * GLYCOL DICHLORIDE * NCI-C00511 * RCRA WASTE NUMBER U077 * UN1184 (DOT)

SECTION 3. - - - - - HAZARDS IDENTIFICATION - - - - -

LABEL PRECAUTIONARY STATEMENTS

FLAMMABLE (USA)
HIGHLY FLAMMABLE (EU)
TOXIC
MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):
LIVER
KIDNEYS
KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
DO NOT BREATHE VAPOR.
STORE UNDER NITROGEN.

SECTION 4. - - - - - FIRST-AID MEASURES - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED

CONTINUED ON NEXT PAGE

1921

We are committed to the success of our customers through superior products and services.

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

CUST#: 250120
PO#: 69112

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 2

CATALOG #: 27057-1
NAME: 1,2-DICHLOROETHANE, 99.8%, HPLC GRADE

CLOTHING AND SHOES.
ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -

EXTINGUISHING MEDIA
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
WATER MAY BE EFFECTIVE FOR COOLING, BUT MAY NOT EFFECT EXTINGUISHMENT.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
FLAMMABLE LIQUID.
VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND FLASH BACK.
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES - - - - -

EVACUATE AREA.
SHUT OFF ALL SOURCES OF IGNITION.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
ABSORB ON SAND OR VERMICULITE AND PLACE IN CLOSED CONTAINERS FOR DISPOSAL.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. - - - - - HANDLING AND STORAGE - - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
DO NOT BREATHE VAPOR.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
IRRITANT.
CARCINOGEN.
MUTAGEN.

CONTINUED ON NEXT PAGE



SIGMA-ALDRICH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

CUST#: 250120
PO#: 69112

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 3

CATALOG #: 27057-1
NAME: 1,2-DICHLOROETHANE, 99.8%, HPLC GRADE

HARMFUL LIQUID.
TOXIC.
KEEP TIGHTLY CLOSED.
KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.
STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -

APPEARANCE AND ODOR
COLORLESS LIQUID

PHYSICAL PROPERTIES

BOILING POINT: 83 C
MELTING POINT: -35 C
FLASHPOINT 60 F
15C

EXPLOSION LIMITS IN AIR:
UPPER 15.6%
LOWER 6.2%
AUTOIGNITION TEMPERATURE: 775 F 412C
VAPOR PRESSURE: 87MM 25 C
SPECIFIC GRAVITY: 1.256
VAPOR DENSITY: 3.4

SECTION 10. - - - - - STABILITY AND REACTIVITY - - - - -

INCOMPATIBILITIES
OXIDIZING AGENTS
ALUMINUM

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
CARBON MONOXIDE, CARBON DIOXIDE
HYDROGEN CHLORIDE GAS
PHOSGENE GAS

SECTION 11. - - - - - TOXICOLOGICAL INFORMATION - - - - -

ACUTE EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
CAUSES SKIN IRRITATION.
CAN CAUSE CNS DEPRESSION.
CAUSES DERMATITIS.
PROLONGED EXPOSURE CAN CAUSE:
NAUSEA, HEADACHE AND VOMITING
DAMAGE TO THE LIVER
GASTROINTESTINAL DISTURBANCES
DAMAGE TO THE KIDNEYS

CHRONIC EFFECTS

CONTINUED ON NEXT PAGE

1923

We are committed to the success of our customers through science, technology and service.



SIGMA-ALDRICH
RESEARCH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

CUST#: 250120
PO#: 69112

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 4

CATALOG #: 27057-1
NAME: 1,2-DICHLOROETHANE, 99.8%, HPLC GRADE

CARCINOGEN.
MAY ALTER GENETIC MATERIAL.
TARGET ORGAN(S):
LIVER, KIDNEYS

RTECS #: KI0525000
ETHANE, 1,2-DICHLORO-

IRRITATION DATA

SKN-RBT 625 MG OPEN MLD	UCDS** 3/23/1970
SKN-RBT 500 MG/24H MLD	85JCAE - ,93,1986
EYE-RBT 63 MG SEV	UCDS** 3/23/1970
EYE-RBT 500 MG/24H MLD	85JCAE - ,93,1986

TOXICITY DATA

ORL-HMN LDLO:286 MG/KG	CLCEAL 86,203,1947
ORL-MAN LDLO:714 MG/KG	KLWOAZ 48,822,1970
ORL-RAT LD50:670 MG/KG	FMCHA2 - ,C130,1991
IHL-RAT LC50:1000 PPM/7H	AMIHBC 4,482,1951
IPR-RAT LD50:807 MG/KG	GTPZAB 26(4),26,1982
SCU-RAT LD50:1 GM/KG	FAONAU 48A,91,1970
ORL-MUS LD50:413 MG/KG	EVHPAZ 43,41,1982
IPR-MUS LD50:470 MG/KG	ARZNAD 11,902,1961
ORL-DOG LD50:5700 MG/KG	FAONAU 48A,91,1970
IHL-MKY LC50:3000 PPM/7H	85JCAE - ,93,1986
ORL-RBT LD50:860 MG/KG	GUCHAZ 6,264,1973
SKN-RBT LD50:2800 MG/KG	FAONAU 48A,91,1970

TARGET ORGAN DATA

SENSE ORGANS AND SPECIAL SENSES (LACRIMATION)
BEHAVIORAL (GENERAL ANESTHETIC)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (ATAXIA)
BEHAVIORAL (COMA)
CARDIAC (CHANGE IN RATE)
LUNGS, THORAX OR RESPIRATION (COUGH)
LUNGS, THORAX OR RESPIRATION (CYANOSIS)
LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)
LUNGS, THORAX OR RESPIRATION (TUMORS)
GASTROINTESTINAL (ULCERATION OR BLEEDING FROM STOMACH)
GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)
GASTROINTESTINAL (NAUSEA OR VOMITING)
LIVER (FATTY LIVER DEGENERATION)
LIVER (JAUNDICE, OTHER OR UNCLASSIFIED)
LIVER (OTHER CHANGES)
KIDNEY, URETER, BLADDER (CHANGES IN TUBULES)
BLOOD (LEUKEMIA)
SKIN AND APPENDAGES (TUMORS)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
NUTRITIONAL AND GROSS METABOLIC (BODY TEMPERATURE DECREASE)
TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
BIOCHEMICAL EFFECTS (OTHER TRANSFERASES)

CONTINUED ON NEXT PAGE

1924



SIGMA-ALDRICH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

CUST#: 250120
PO#: 69112

M A T E R I A L S A F E T Y D A T A S H E E T PAGE 5

CATALOG #: 27057-1
NAME: 1,2-DICHLOROETHANE, 99.8%, HPLC GRADE

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

SECTION 12. ----- ECOLOGICAL INFORMATION -----

DATA NOT YET AVAILABLE.

SECTION 13. ----- DISPOSAL CONSIDERATIONS -----

BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY FLAMMABLE. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. ----- TRANSPORT INFORMATION -----

CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. ----- REGULATORY INFORMATION -----

EUROPEAN INFORMATION

EC INDEX NO: 602-012-00-7

HIGHLY FLAMMABLE

TOXIC

R 11

HIGHLY FLAMMABLE.

R 22

HARMFUL IF SWALLOWED.

R 36/37/38

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

R 45

MAY CAUSE CANCER.

S 45

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

S 53

AVOID EXPOSURE - OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN DTLVS* TLV/BEI 1996

ACGIH TLV-TWA 40 MG/M3 (10 PPM) DTLVS* TLV/BEI 1996

IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE IMEMDT 20,429,1979

IARC CANCER REVIEW:HUMAN NO ADEQUATE DATA IMEMDT 20,429,1979

IARC CANCER REVIEW:GROUP 2B IMSUDL 7,56,1987

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION

FEREAC 54,7740,1989

MSHA STANDARD-AIR:TWA 50 PPM (200 MG/M3)

DTLVS* 3,79,1971

OSHA PEL (GEN INDU):8H TWA 50 PPM;CL 100 PPM;PK 200 PPM/5M/3H

CONTINUED ON NEXT PAGE

1925

We are committed to the success of our customers through science, technology and service.



SIGMA-ALDRICH RESEARCH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

CUST#: 250120
PO#: 69112

M A T E R I A L S A F E T Y D A T A S H E E T PAGE 6

CATALOG #: 27057-1
NAME: 1,2-DICHLOROETHANE, 99.8%, HPLC GRADE

CFRGBR 29,1910.1000,1994
OSHA PEL (CONSTRUC):8H TWA 50 PPM (200 MG/M3)
CFRGBR 29,1926.55,1994
OSHA PEL (SHIPYARD):8H TWA 50 PPM (200 MG/M3)
CFRGBR 29,1915.1000,1993
OSHA PEL (FED CONT):8H TWA 50 PPM (200 MG/M3)
CFRGBR 41,50-204.50,1994
OEL-ARAB REPUBLIC OF EGYPT:TWA 5 PPM (2 MG/M3) JAN 1993
OEL-AUSTRALIA:TWA 10 PPM (40 MG/M3) JAN 1993
OEL-AUSTRIA:TWA 20 PPM (80 MG/M3) JAN 1993
OEL-BELGIUM:TWA 10 PPM (40 MG/M3) JAN 1993
OEL-DENMARK:TWA 1 PPM (4 MG/M3);SKIN JAN 1993
OEL-FINLAND:TWA 10 PPM (40 MG/M3);STEL 20 PPM (80 MG/M3);CARCINOGEN JAN 1993
OEL-FRANCE:TWA 10 PPM (40 MG/M3) JAN 1993
OEL-GERMANY:CARCINOGEN JAN 1993
OEL-HUNGARY:STEL 4 MG/M3;CARCINOGEN JAN 1993
OEL-JAPAN:TWA 10 PPM (40 MG/M3) JAN 1993
OEL-THE NETHERLANDS:TWA 50 PPM (200 MG/M3) JAN 1993
OEL-THE PHILIPPINES:TWA 50 PPM (200 MG/M3) JAN 1993
OEL-RUSSIA:TWA 10 PPM JAN 1993
OEL-SWEDEN:TWA 1 PPM (4 MG/M3);STEL 5 PPM (20 MG/M3);SKIN;CARCINOGEN JAN 1993
OEL-SWITZERLAND:TWA 10 PPM (40 MG/M3);STEL 20 PPM (80 MG/M3) JAN 1993
OEL-TURKEY:TWA 50 PPM (200 MG/M3) JAN 1993
OEL-UNITED KINGDOM:TWA 10 PPM (40 MG/M3);STEL 15 PPM (60 MG/M3) JAN 1993
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO ETHYLENE DICHLORIDE-AIR:10H CA TWA 1 PPM;STEL 2 PPM
NIOSH* DHHS #92-100,1992
NOHS 1974: HZD 24130; NIS 92; TNF 7148; NOS 60; TNE 77671
NOES 1983: HZD 24130; NIS 38; TNF 2226; NOS 61; TNE 83246; TFE 33361
ATSDR TOXICOLOGY PROFILE (NTIS** PB/90/171422/AS)
EPA GENETOX PROGRAM 1988, POSITIVE: CARCINOGENICITY-MOUSE/RAT; CELL TRANSFORM.-SA7/SHE
EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER-WHOLE SEX CHROM. LOSS
EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER-NONDISJUNCTION; E COLI POLA WITHOUT S9
EPA GENETOX PROGRAM 1988, POSITIVE: HISTIDINE REVERSION-AMES TEST
EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER SEX-LINKED LETHAL
EPA GENETOX PROGRAM 1988, POSITIVE: CHO GENE MUTATION
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
ON EPA IRIS DATABASE
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1997
NIOSH CURRENT INTELLIGENCE BULLETIN 25, 1978, AND BULLETIN 27, 1978
NIOSH ANALYTICAL METHOD, 1994: HYDROCARBONS, HALOGENATED, 1003
NCI CARCINOGENESIS BIOASSAY (GAVAGE);CLEAR EVIDENCE:MOUSE,RAT
NCITR* NCI-TR-55,78
NTP 7TH ANNUAL REPORT ON CARCINOGENS, 1992 : ANTICIPATED TO BE

CONTINUED ON NEXT PAGE

1926



SIGMA-ALDRICH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

CUST#: 250120
PO#: 69112

M A T E R I A L S A F E T Y D A T A S H E E T PAGE 7

CATALOG #: 27057-1
NAME: 1,2-DICHLOROETHANE, 99.8%, HPLC GRADE

CARCINOGEN
NTP TOXICITY STUDIES, RPT# TOX-04, APRIL 1997
OSHA ANALYTICAL METHOD #03

U.S. INFORMATION
THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.
CALIFORNIA PROPOSITION 65:
THIS PRODUCT IS OR CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF
CALIFORNIA TO CAUSE CANCER.

SECTION 16. - - - - - OTHER INFORMATION - - - - -

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. ALDRICH SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.

COPYRIGHT 1997 ALDRICH CHEMICAL CO, INC.
LICENSE GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

1927

We are committed to the success of our customers through science, technology and service.

