CAB

SIGMA-ALDRICH

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

ATTN: SAFETY DIRECTOR
RECEIVING DOCK
SCHOOLCRAFT COLLEGE
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LIVONIA MI 48152

EMERGENCY PHONE 1-414-273-3850

DATE 09/24/99
CUST#: 938609
PO#: 89527

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

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

CATALOG #: D5682-9
NAME: 1,4-DICHLOROBENZENE, 99+%

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

CAS #: 106-46-7
MF: C6H4CL2
EC NO: 203-400-5

SYNONYMS
P-CHLOROPHENYL CHLORIDE * P-DICHLOORBENZEEN (DUTCH) * 1,4-DICHLOORBENZEEN (DUTCH) * P-DICHLORBENZOL (GERMAN) * 1,4-DICHLORBENZOL (GERMAN) * DI-CHLORICIDE * P-DICHLOROBENZENE * 1,4-DICHLOROBENZENE * P-DICHLOROBENZENE (ACGIH:OSHA) * P-DICHLOROBENZOL * P-DICLOROBENZENE (ITALIAN) * 1,4-DICLOROBENZENE (ITALIAN) * EVOLA * GLOBOL * NCI-C54955 * PARACIDE * PARA CRYSTALS * PARADI * PARADICHLORBENZOL (GERMAN) * PARADICHLOROBENZENE * PARADICHLOROBENZOL * PARADOW * PARAMOTH * PARANUGGETS * PARAZENE * PDB * PDCB * PERSIA-PERAZOL * RCRA WASTE NUMBER U070 * RCRA WASTE NUMBER U071 * RCRA WASTE NUMBER U072 * SANTOCHLOR *

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

LABEL PRECAUTIONARY STATEMENTS
TOXIC
MAY CAUSE CANCER.
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):
LIVER
KIDNEYS
COMBUSTIBLE.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
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.

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 CLOTHING AND SHOES.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS

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WITH FINGERS.

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

EXTINGUISHING MEDIA
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

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

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.

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

REFER TO SECTION 8.

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

REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY.
WASH THOROUGHLY AFTER HANDLING.
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 DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
TOXIC.
IRRITANT.
KEEP TIGHTLY CLOSED.
KEEP AWAY FROM HEAT AND OPEN FLAME.
STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR
COLORLESS CRYSTALS

PHYSICAL PROPERTIES
BOILING POINT: 173 C
MELTING POINT: 54 C TO 56 C
FLASHPOINT 150 F

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VAPOR PRESSURE:	1.03MM	65C 25 C	10MM 54.8 C
SPECIFIC GRAVITY:	1.241		
VAPOR DENSITY:	5.07		

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

INCOMPATIBILITIES
OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
CARBON MONOXIDE, CARBON DIOXIDE

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

ACUTE EFFECTS
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
CAUSES EYE AND SKIN IRRITATION.
DAMAGE TO THE LIVER
DAMAGE TO THE KIDNEYS
DAMAGE TO THE LUNGS

CHRONIC EFFECTS
TARGET ORGAN(S):
DAMAGE TO THE LIVER
DAMAGE TO THE KIDNEYS
DAMAGE TO THE LUNGS
LIVER
KIDNEYS
LUNGS
CARCINOGEN.

RTECS #: CZ4550000
BENZENE, P-DICHLORO-

IRRITATION DATA

EYE-HMN 80 PPM	AMIHAB 14,138,1956

TOXICITY DATA

ORL-HMN LDLO:857 MG/KG	34ZIAG -,210,1969
UNR-HMN LDLO:357 MG/KG	YKYUA6 31,1499,1980
UNR-MAN LDLO:221 MG/KG	85DCAI 2,73,1970
ORL-RAT LD50:500 MG/KG	WRPCA2 9,119,1970
SKN-RAT LD50:>6 GM/KG	FAATDF 7,299,1986
IPR-RAT LD50:2562 MG/KG	JAPMA8 38,124,1949
ORL-MUS LD50:2950 MG/KG	GUCHAZ 6,183,1973
IPR-MUS LD50:2 GM/KG	MUTAEX 2,111,1987
SCU-MUS LD50:5145 MG/KG	TOIZAG 20,772,1973
ORL-RBT LD50:2830 MG/KG	YKYUA6 29,453,1978
SKN-RBT LD50:>2 GM/KG	SPEADM 78-1,18,1978

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ORL-MAM LD50:2600 MG/KG	GTPZAB 32(10),25,1988
IHL-MAM LC50:12 GM/M3	GTPZAB 32(10),25,1988

TARGET ORGAN DATA
SENSE ORGANS AND SPECIAL SENSES (OTHER EYE EFFECTS)
LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)
GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CARDIOVASCULAR SYSTEM)
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 - - - - - - - - -

THIS COMBUSTIBLE MATERIAL MAY BE BURNED IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
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: 602-035-00-2
TOXIC
R 22
HARMFUL IF SWALLOWED.
R 36/38
IRRITATING TO EYES AND SKIN.
S 22
DO NOT BREATHE DUST.
S 24/25
AVOID CONTACT WITH SKIN AND EYES.
S 46
IF SWALLOWED, SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-ANIMAL CARCINOGEN	DTLVS* TLV/BEI,1997
ACGIH TLV-TWA 60 MG/M3 (10 PPM)	DTLVS* TLV/BEI,1997
IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE	IMSUDL 7,192,1987
IARC CANCER REVIEW:HUMAN INADEQUATE EVIDENCE	IMEMDT 7,231,1974
IARC CANCER REVIEW:ANIMAL INADEQUATE EVIDENCE	IMEMDT 7,231,1974
IARC CANCER REVIEW:HUMAN INADEQUATE EVIDENCE	IMEMDT 29,213,1982

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IARC CANCER REVIEW:ANIMAL INADEQUATE EVIDENCE IMEMDT 29,213,1982
IARC CANCER REVIEW:GROUP 2B IMSUDL 7,192,1987
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,1989
MSHA STANDARD-AIR:TWA 75 PPM (450 MG/M3)
DTLVS* 3,77,1971
OSHA PEL (GEN INDU):8H TWA 75 PPM (450 MG/M3)
CFRGBR 29,1910.1000,1994
OSHA PEL (CONSTRUC):8H TWA 75 PPM (450 MG/M3)
CFRGBR 29,1926.55,1994
OSHA PEL (SHIPYARD):8H TWA 75 PPM (450 MG/M3)
CFRGBR 29,1915.1000,1993
OSHA PEL (FED CONT):8H TWA 75 PPM (450 MG/M3)
CFRGBR 41,50-204.50,1994
OEL-AUSTRALIA:TWA 75 PPM (450 MG/M3);STEL 110 PPM (675 MG/M3) JAN 1993
OEL-AUSTRIA: CARCINOGEN, JAN1999
OEL-BELGIUM:TWA 75 PPM (451 MG/M3);STEL 110 PPM (661 MG/M3) JAN 1993
OEL-FINLAND:TWA 75 PPM (450 MG/M3);STEL 115 PPM (690 MG/M3);SKIN JAN 1993
OEL-GERMANY:TWA 75 PPM (450 MG/M3) JAN 1993
OEL-JAPAN: OEL 50 PPM (300 MG/M3), 2B CARCINOGEN, JAN1999
OEL-JAPAN:TWA 50 PPM (300 MG/M3) JAN 1993
OEL-THE NETHERLANDS:TWA 75 PPM (450 MG/M3) JAN 1993
OEL-THE PHILIPPINES:TWA 75 PPM (450 MG/M3) JAN 1993
OEL-POLAND: MAC(TWA) 20 MG/M3, JAN1999
OEL-RUSSIA:TWA 50 PPM JAN 1993
OEL-SWEDEN:TWA 75 PPM (450 MG/M3);STEL 110 PPM (700 MG/M3) JAN 1993
OEL-SWITZERLAND:TWA 75 PPM (450 MG/M3);STEL 150 PPM (900 MG/M3) JAN 1993
OEL-TURKEY:TWA 75 PPM (450 MG/M3) JAN 1993
OEL-UNITED KINGDOM:TWA 75 PPM (450 MG/M3);STEL 110 PPM JAN 1993
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO P-DICHLOROBENZENE-AIR:CA (1.7 PPM LOQ)
NIOSH* DHHS #92-100,1992
NOHS 1974: HZD 24006; NIS 21; TNF 1963; NOS 18; TNE 23116
NOES 1983: HZD 24006; NIS 22; TNF 2629; NOS 21; TNE 33978; TFE 9412
ATSDR TOXICOLOGY PROFILE (NTIS** PB/89/160352/AS)
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA 8(A) PRELIMINARY ASSESSMENT INFORMATION, FINAL RULE
FEREAC 47,26992,82
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-9004
ON EPA IRIS DATABASE
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1999
NIOSH ANALYTICAL METHOD, 1994: HYDROCARBONS, HALOGENATED, 1003
NIOSH ANALYTICAL METHOD, 1996: VOLATILE ORGANIC COMPOUND, 2549
NTP CARCINOGENESIS STUDIES (GAVAGE);CLEAR EVIDENCE:MOUSE,RAT
NTPTR* NTP-TR-319,1987
NTP 8TH ANNUAL REPORT ON CARCINOGENS, 1998:REASONABLY ANTICIPATED TO BE HUMAN CARCINOGEN

U.S. INFORMATION

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

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

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