MATERIAL SAFETY DATA SHEET

SECTION 1. - - - - - - - - - CHEMICAL IDENTIFICATION- - - - - - - - - -
CATALOG #:            P1045
NAME:                 PENTACHLOROPHENOL

SECTION 2. - - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -
CAS #:    87-86-5
MF: C6HCL5O
EC NO:  201-778-6
SYNONYMS
AD 73 * CHEM-PENTA * CHEM-TOL * CHLON * CHLOROPHEN * CM 613 * CP 1309
* DOWICIDE 7 * DOWICIDE EC-7 * DOW PENTACHLOROPHENOL DP-2
ANTIMICROBIAL * DUROTOX * EP 30 * FUNGIFEN * GRUNDIER ARBEZOL * 1-
HYDROXYPENTACHLOROBENZENE * LAUXTOL * LAUXTOL A * LIROPREM * MB 333 *
NCI-C54933 * NCI-C55378 * NCI-C56655 * PCP (PESTICIDE) * PENCHLOROL *
PENTA * PENTACHLORFENOL (Dutch) * PENTACHLOROFENOL *
PENTACOLORENOLO (ITALIAN) * PENTACHLOROPHENOL * 2,3,4,5,6-
PENTACHLOROPHENOL * PENTACHLOROPHENOL (ACGIH:OSHA) *
PENTACHLOROPHENOL, DP-2 * PENTACHLOROPHENOL (GERMAN) * PENTACON *
PENTA-KIL * PENTA READY * PENTA WR * PENWAR * PERATOX * PERMAGARD *
PERMASAN * PERMATEX* PERMATEX PENTA * PERMITE *
POLE TOPPER FLUID * POL NU * PREVENTOL P * RCRA WASTE NUMBER U242 *
SANTOPHEN 20 * THOMPSON’S WOOD FIX * WOODTREAT A *

SECTION 3. - - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - -
LABEL PRECAUTIONARY STATEMENTS
HIGHLY TOXIC (USA)
TOXIC (EU)
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
LIMITED EVIDENCE OF CARCINOGENIC EFFECT.
POSSIBLE RISK OF HARM TO THE UNBORN CHILD.
READILY ABSORBED THROUGH SKIN.
POSSIBLE MUTAGEN.
CALIF. PROP. 65 CARCINOGEN.
TARGET ORGAN(S):
KIDNEYS
LIVER
AVOID EXPOSURE - OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.
DO NOT BREATHE DUST.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

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.

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.
COVER WITH DRY LIME OR SODA ASH, PICK UP, KEEP IN A CLOSED CONTAINER AND HOLD FOR WASTE DISPOSAL.
SECTION 7. - - - - - - HANDLING AND STORAGE- - - - - - - - - - - -
REFER TO SECTION 8.
SECTION 8. - - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - - -
WASH CONTAMINATED CLOTHING BEFORE REUSE.
WASH THOROUGHLY AFTER HANDLING.
WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.
SECTION 9. - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - -
PHYSICAL PROPERTIES
BOILING POINT: 310 C
MELTING POINT: 188 - 191 C
VAPOR PRESSURE: 40 MMHG @ 211,2 C
SOLUBILITY:

MOST ORGANIC SO

SPECIFIC GRAVITY: 1,978
VAPOR DENSITY: 9,2 G/L
SECTION 10. - - - - - - STABILITY AND REACTIVITY - - - - - - - - - -
INCOMPATIBILITIES
STRONG OXIDIZING AGENTS
STRONG BASES
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
CARBON MONOXIDE, CARBON DIOXIDE
HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.
SECTION 11. - - - - - - TOXICOLOGICAL INFORMATION - - - - - - - - -
ACUTE EFFECTS
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
EXPOSURE CAN CAUSE:
CONVULSIONS
READILY ABSORBED THROUGH SKIN.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
MAY BE FATAL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN.
CAUSES EYE AND SKIN IRRITATION.
CHRONIC EFFECTS
THE EVIDENCE FOR CARCINOGENICITY OF PENTACHLOROPHENOL (PCP) IS BASED ON ASSAYS THAT UTILIZED LESS THAN PURE PCP. CONTAMINANTS OF PCP INCLUDE: TRI- OR TETRA- CHLOROPHENOL, HEXACHLOROBENZENE, POLYCHLORINATED DIBENZO-P-DIOXINS OR POLYCHLORINATED DIBENZOFLURANS. INDICATIONS ARE THAT POSITIVE EVIDENCE FOR CARCINOGENICITY IS FROM THE CONTAMINANT(S) AND NOT THE PCP.
OVEREXPOSURE MAY CAUSE REPRODUCTIVE DISORDER(S) BASED ON TESTS WITH LABORATORY ANIMALS.
TARGET ORGAN(S):
LIVER
KIDNEYS
RTECS #: SM6300000
PHENOL, PENTACHLORO-

IRRITATION DATA
SKN-RBT 10 MG/24H OPEN MLD  AIHAPP 23,95,1962
EYE-RBT 100 UL/24 MLD   NTIS** OTS0546023

TOXICITY DATA
ORL-MAN LDLO:401 MG/KG   EESADV 1,343,1977
ORL-RAT LD50:27 MG/KG    JPETAB 76,104,1942
IHL-RAT LC50:355 MG/M3   GTPZAB 13(9),58,1969
SKN-RAT LD50:96 MG/KG    GTPZAB 13(9),58,1969
IPR-RAT LD50:56 MG/KG    BJPCAL 13,20,1958
ORL-MUS LD50:36 MG/KG    ARTODN 40,63,1978
IHL-MUS LC50:225 MG/M3   GTPZAB 13(9),58,1969
IPR-MUS LD50:32 MG/KG    ARTODN 40,63,1978
UNR-DOG LD50:70 MG/KG    PHPHA6 1,3,1953
UNR-GPG LD50:100 MG/KG   PHPHA6 1,3,1953
ORL-HAM LD50:168 MG/KG   TXAPA9 48,A192,1979
ORL-GRB LD50:294 MG/KG   ARTODN 40,63,1978
ORL-DCK LD50:380 MG/KG   DOEAAH 35,25,1979
UNR-FRG LD50:36 MG/KG    PHPHA6 1,3,1953

TARGET ORGAN DATA
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (EXCITEMENT)
BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
BEHAVIORAL (MUSCLE WEAKNESS)
BEHAVIORAL (MUSCLE CONTRACTION OR SPASTICITY)
VASCULAR (BP ELEVATION NOT CHARACTERIZED IN AUTONOMIC SECTION)
LUNGS, THORAX OR RESPIRATION (DYSPEA)
LUNGS, THORAX OR RESPIRATION (TUMORS)
LIVER (TUMORS)
KIDNEY, URETER, BLADDER (URINE VOLUME INCREASED)
ENDOCRINE (HYPERGLYCEMIA)
SKIN AND APPENDAGES (SWEATING)
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
EFFECTS ON EMBRYO OR FETUS (FETAL DEATH)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (HOMEOSTASIS)
EFFECTS ON NEWBORN (DELAYED EFFECTS)
NUTRITIONAL AND GROSS METABOLIC (BODY TEMPERATURE INCREASE)
TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)

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 - - - - - - - - - -
DATA NOT AVAILABLE

SECTION 14. - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - - -
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - - - - - REGULATORY INFORMATION - - - - - - - - - -
EUROPEAN INFORMATION
EC INDEX NO:   604-002-00-8
TOXIC
R 24/25
TOXIC IN CONTACT WITH SKIN AND IF SWALLOWED.
R 26
VERY TOXIC BY INHALATION.
R 36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
R 40
LIMITED EVIDENCE OF CARCINOGENIC EFFECT.
R 50/53
VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE
EFFECTS IN THE AQUATIC ENVIRONMENT.
S 22
DO NOT BREATHE DUST.
WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES.

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

NOT RECOMMENDED FOR INTERIOR USE ON LARGE SURFACE AREAS.

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF AS HAZARDOUS WASTE.

AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEETS.

REVIEWS, STANDARDS, AND REGULATIONS

ACGIH TLV-CONFIRMED ANIMAL CARCINOGEN  DTLVS* TLV/BEI, 1999
ACGIH TLV-TWA 0.5 MG/M3 (SKIN)  DTLVS* TLV/BEI, 1999
IARC CANCER REVIEW: HUMAN LIMITED EVIDENCE IMEMDT 41, 319, 1986
IARC CANCER REVIEW: ANIMAL SUFFICIENT EVIDENCE IMEMDT 71, 769, 1999
IARC CANCER REVIEW: ANIMAL INADEQUATE EVIDENCE IMEMDT 20, 303, 1979

Pesticide 1988: Pesticide Subject to Registration or Re-Registration FEREAC 54, 7740, 1989

OSHA PEL (GEN INDU): 8H TWA 0.5 MG/M3 (SKIN)
CFRGR 29, 1910.1000, 1994
OSHA PEL (CONSTRUCT): 8H TWA 0.5 MG/M3 (SKIN)
CFRGR 29, 1926.55, 1994
OSHA PEL (SHIPYARD): 8H TWA 0.5 MG/M3 (SKIN)
CFRGR 29, 1915.1000, 1993
OSHA PEL (FED CONT): 8H TWA 0.5 MG/M3 (SKIN)
CFRGR 41, 50-204.50, 1994

NIOSH REL TO PENTACHLOROPHENOL-AIR: 10H TWA 0.5 MG/M3 (SK)
NIOSH* DHHS #92-100, 1992

NIOSH 1974: HZD 54160; NIS 47; TNF 3548; NOS 42; TNE 29154
NOES 1983: HZD 54160; NIS 29; TNF 2248; NOS 38; TNE 26806; TFE 4191
ATSDR TOXICOLOGY PROFILE (NTIS** PB/90/182163/AS)

EPA GENETOX PROGRAM 1988, POSITIVE: CELL TRANSFORM.-SA7/SHE; S CEREVISIAE GENE CONVERSION

EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE-FORWARD MUTATION
EPA GENETOX PROGRAM 1988, NEGATIVE: HOST-MEDIATED ASSAY; MOUSE SPOT TEST
EPA GENETOX PROGRAM 1988, NEGATIVE: HISTIDINE REVERSION-AMES TEST; S CEREVISIAE-HOMOZYGOSIS
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, JANUARY 2001
NIOSH ANALYTICAL METHOD, 1994: PENTACHLOROPHENOL, 5512; IN BLOOD, 8001;
IN URINE, 8303
NTP CARCINOGENESIS STUDIES (FEED); CLEAR EVIDENCE; MOUSE
NTPTR* NTP-TR-349, 1989
OSHA ANALYTICAL METHOD #39

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. SIGMA, ALDRICH, FLUKA 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.

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