

- (CAS) CAS Registry Number: 1336-36-3
- (MAT) Material Name: \$\$\$ POLYCHLORINATED BIPHENYLS \$\$\$
- (USS) Common Uses: COOLANTS IN TRANSFORMERS; FLUORESCENT LIGHT BALLASTS; ELECTRICAL INSULATION; PLASTICIZER; EPOXY PAINTS; CARBONLESS REPRODUCTION; PAPER LUBRICANTS; MUCH OF THE TOTAL PRODUCTION OF PCBS IS STILL IN USE AS DIELECTRIC (INSULATOR), HEAT-TRANSFER, OR HYDRAULIC FLUIDS. (DPIRDU 1,81/SAX) PCBS HAVE BEEN THE MAJOR COMPONENTS OF ASKARELS USED IN THE UNITED STATES SINCE 1932. ASKAREL IS A GENERIC TERM USED FOR A BROAD CLASS OF NONFLAMMABLE SYNTHETIC CHLORINATED HYDROCARBON INSULATING LIQUIDS USED IN ELECTRICAL CAPACITORS, TRANSFORMERS, NUCLEAR REACTORS, AND ACCESSORY EQUIPMENT. (CRSOE* 77-225,77/NIOSH) UPDATED 11/84.
- (CON) Containers: FORMER PCB SHIPMENT CONTAINERS INCLUDE GLASS BOTTLES (5 L), EARTHENWARE (5 L), PLASTIC BOTTLES (5 L), AND METAL CANS AND DRUMS (30 AND 250 L, RESPECTIVELY) (85EZAO 78/IMCO) (49CFR* 101.1) (RARAD5 80/IATA) DOT (DEPARTMENT OF TRANSPORTATION) HAZARDOUS MATERIALS TABLE: SPECIFIC PACKAGING REQUIREMENTS ARE CITED IN 49CFR 173.510 (GENERAL PACKAGING REQUIREMENTS). MAXIMUM NET QUANTITY IN ONE PACKAGE: NO LIMIT ON PASSENGER AIRCRAFT OR RAILCAR; NO LIMIT ON CARGO-ONLY AIRCRAFT. DEPARTMENT OF TRANSPORTATION OPTIONAL HAZARDOUS MATERIALS TABLE (49CFR* 172.102,10-31-83/DOT): UN PACKING GROUP II. ICAO INSTRUCTIONS (ICAO** 83/ICAO)--PACKING GROUP II; PACKING INSTRUCTIONS FOR PASSENGER AIRCRAFT 907 AND FOR CARGO AIRCRAFT 907. MAXIMUM NET QUANTITY IN ONE PACKAGE: 100 L ON PASSENGER AIRCRAFT, 220 L ON CARGO-ONLY AIRCRAFT. UPDATED 11/84.
- (STO) General Storage Procedures: STORE PCBS IN ISOLATED AREAS WHERE THE DRUMS ARE NOT VULNERABLE TO DAMAGE FROM VEHICLES, FORKLIFTS, OR OTHER MOVING EQUIPMENT. (PCBA** 79/EPA) STORE AT AMBIENT TEMPERATURES WITH OPEN VENTING. (CGHCD* 78/USCG) UPDATED 12/84.
- (HND) General Handling Procedures: WEAR GLOVES AND APRONS MADE OF NEOPRENE, VITRON, OR POLYETHYLENE AND IMPERVIOUS SHOES. HANDLE ONLY WITH AN ADEQUATE VENTILATION SYSTEM. (CFCTS* 80-83/BUR) CANCER SUSPECT AGENT. DO NOT GET IN EYES OR ON SKIN OR CLOTHING. WEAR PROTECTIVE CLOTHING IMPERVIOUS TO PCBS: GLOVES, BOOTS, OVERSHOES, AND BIB-TYPE APRONS THAT COVER BOOT TOPS. FOR EYE PROTECTION, WEAR CHEMICAL SAFETY GOGGLES, FACE SHIELDS AT LEAST 8 INCHES LONG WITH GOGGLES, OR SAFETY GLASSES WITH SIDE SHIELDS. FOR ROUTINE OPERATIONS, ENGINEERING CONTROLS MUST BE USED TO KEEP THE AIRBORNE PCB CONCENTRATION BELOW THE RECOMMENDED TWA. DO NOT WEAR WORK CLOTHING AWAY FROM PLACE OF EMPLOYMENT. WEAR CLEAN WORK CLOTHING DAILY. INFORM CLEANING ESTABLISHMENTS OF HAZARDS AND PROPER WASTEWATER DISPOSAL PROCEDURES. WASH HANDS AND EXPOSED SKIN BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES. FOOD, DRINK, OR SMOKING MATERIALS ARE NOT PERMITTED IN AREAS WHERE PCBS ARE HANDLED, PROCESSED, OR STORED. (CRSOE* 77-225,77/NIOSH) FOR RESPIRATOR SELECTION FOR EMERGENCIES OR FOR NONROUTINE MAINTENANCE OR REPAIR ACTIVITIES AND FOR INSTALLATION AND TESTING OF REQUIRED ENGINEERING CONTROLS, SEE FIELD SAF. UPDATED 11/84.
- (BIN) Binary Reactants: PCBS ARE GENERALLY INERT WHEN PLACED IN CONTACT WITH OTHER MATERIALS UNDER NORMAL CONDITIONS OF TEMPERATURE AND PRESSURE. HOWEVER, STRONG SUNLIGHT CONDITIONS MAY CAUSE THE FORMATION OF PHENOLIC MATERIALS AND TRACES OF POLYCHLORINATED DIBENZOFURANS. (EVHPAZ 1,15,72/HUT) (BECTA6 10(6)372,73/CRO)
- (LDL) Detection Limit (Lab.; Techniques, Ref) (ppm): IN AIR, POLYCHLORINATED BIPHENYLS (PCBS) ARE ABSORBED BY FLORISIL IN A TUBE. THEY ARE DESORBED WITH HEXANE AND ANALYZED BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTION. DETECTION LIMIT: 0.01 MG/M3. INTERFERENCES: CONTAMINANTS. NIOSH METHOD 253 (NIOSH* II,1,77/TAY). IN WASTEWATERS AT PH 5 TO 9, CHLORINATED BIPHENYLS (PCBS) ARE EXTRACTED WITH DICHLORAMETHANE,

PRECONCENTRATED, AND ANALYZED BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE OR HALOGEN-SPECIFIC DETECTORS. DETECTION LIMIT RANGE: 0.00004 TO 0.00015 MG/L. INTERFERENCES: PHTHALATE ESTERS. EPA METHOD 608. (FEREAC 44FR69510, 12-3-79/EPA) IN WASTEWATERS OF PH 7 TO 10, POLYCHLORINATED BIPHENYLS (PCBS) ARE EXTRACTED WITH DICHLORAMETHANE, PRECONCENTRATED, AND ANALYZED BY PACKED COLUMN GAS CHROMATOGRAPHY INTO A MASS SPECTROMETER. DETECTION LIMIT: 0.1 TO 1.0 MG/L. INTERFERENCES: CONTAMINANTS FROM GLASSWARE AND SOLVENTS. EPA METHOD 625. (FEREAC 44FR60540, 12-3-79/EPA) IN POULTRY FAT, FISH, AND DAIRY PRODUCTS, POLYCHLORINATED BIPHENYLS (PCBS) ARE EXTRACTED FROM HOMOGENIZED SAMPLES WITH CH₃CN AND PETROLEUM ETHER OR METHANOL, CH₃CN, AND PETROLEUM ETHER FOR FATTY FOODS. THE EXTRACTS ARE FLORISIL CLEANED AND ANALYZED BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTION. DETECTION LIMIT: NOT GIVEN. INTERFERENCES: PHTHALATE ESTERS. AOAC METHOD 29. (ME026* 80/AOAC) IN BLOOD SERUM, POLYCHLORINATED BIPHENYLS (PCBS) ARE EXTRACTED WITH 1:1 ETHYL ETHER AND N-HEXANE. THE EXTRACT IS TREATED WITH 2% METHANOLIC KOH AND SILICA GEL COLUMN CLEANUP. THE CLEANED HEXANE EXTRACT IS CONCENTRATED AND ANALYZED BY GAS CHROMATOGRAPHY USING ELECTRON CAPTURE DETECTION. DETECTION LIMIT: 0.030 MG/L. INTERFERENCES: OTHER PESTICIDE RESIDUES, ESPECIALLY DDT METABOLITES. NIOSH METHOD 329. (NIOSH* II,6,77/TAY) UPDATED 11/84.

- (STD) Standard Codes: SUPERFUND DESIGNATED (HAZARDOUS SUBSTANCES) LIST. REPORTABLE QUANTITY (RQ): 10 LB.) (STATUTORY SOURCE UNDER CERCLA IS CWA, SECTIONS 311(B)(4) AND 307(A).). FINAL RQ: 10 LB (4.54 KG (CATEGORY A). (FEREAC 50FR13456, 4-4-85) ASSOCIATION OF AMERICAN RAILROADS STCC NUMBER 4961666. (BUXEH* 81/STU) DOT HAZARDOUS MATERIALS TABLE (FEREAC 48FR23551,5-25-83)--UN NO. 2315; NO LABEL REQUIRED, HAZARD CLASS: ORM-E; STOW ON DECK OR UNDER DECK FOR PASSENGER AND CARGO SHIPS, STOW IN A RECOVERABLE POSITION SEPARATED FROM ALL FOODSTUFFS. (49CFR* 172.101,6-12-84/DOT) DEPARTMENT OF TRANSPORTATION OPTIONAL HAZARDOUS MATERIALS TABLE (49CFR* 172.102,10-31-83/DOT)--IMCO CLASS: 9; UN NUMBER UN 2315; LABELS REQUIRED: NONE; PACKAGING GROUP II. VESSEL STOWAGE REQUIREMENTS ON CARGO AND PASSENGER VESSELS, STOW ON DECK OR UNDER DECK. OTHER REQUIREMENTS: STOW IN A RECOVERABLE POSITION. STOW AWAY FROM FOODSTUFFS. ICAO RECOMMENDATIONS (ICAO** 83/ICAO)--UN CLASS OR DIVISION 9. UPDATED 11/84.
- (FLM) Flammability: FLAMMABLE (MERCK* 83/WIN)
- (TCP) Toxic Combustion Products: PCBS EMIT HIGHLY TOXIC VAPORS WHEN HEATED TO DECOMPOSITION INCLUDING CO, HCL, AND CL₂. (HBTND* 83/KIM) HEXACHLOROBENZENE IS EMITTED BELOW 950 DEGREES CELSIUS. (14CYAT 2B,81/CLA) UPDATED 11/84.
- (EXT) Extinguishing Method: BUREAU OF EXPLOSIVES RECOMMENDATIONS--USE EXTINGUISHING AGENT SUITABLE FOR TYPE OF SURROUNDING FIRE SINCE PCBS DO NOT BURN OR BURN WITH DIFFICULTY. (BUXEH* 81/STU) EXTINGUISH WITH WATER, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE. (CGHCD* 78/USCG) UPDATED 11/84.
- (EXP) Explosiveness: STABLE
- (MLT) Melting Point (C.): 28 TO 184
- (SPG) Specific Gravity: 1.182 TO 1.44 (DPIRDU 1,81/SAX)
- (PER) Persistency: HIGH; HIGHLY CHLORINATED FORMS OF PCBS CONTAINING 5 OR MORE CHLORINE ATOMS PER BIPHENYL MOLECULE ARE MUCH MORE PERSISTENT IN THE ENVIRONMENT THAN PCBS CONTAINING 1, 2, OR 3 CHLORINE ATOMS. TETRACHLOROBIPHENYLS ARE CONSIDERED INTERMEDIATE IN PERSISTENCE. (AWQCD* PB81-117798,80/ECAO) ENVIRONMENTALLY, APPROXIMATELY ONE CHLORINE ATOM OF EACH CHLORINATED BIPHENYL IS LOST PER YEAR. (39KOAS 56,78/BUN) MICROBIAL AEROBIC DEGRADATION STUDIES USING MIXED CULTURES IN WATER INDICATED THAT AROCLOR 1242 WAS 98% DEGRADED IN LESS THAN 10 DAYS. PCB ISOMERS WITH FEWER THAN 4 CHLORINE ATOMS WERE BIODEGRADED, BUT THOSE WITH HIGHER CHLORINE CONTENT WERE NOT SIGNIFICANTLY DEGRADED. THIS GROUP WOULD INCLUDE AROCLOR 1248, 1254, AND 1260. (LDHW** 169,78/GRI)
- (PFA) Potential for Accumulation: HIGH IN LIVER AND FATTY TISSUES. FRESHWATER RESIDUE DATA SHOW THAT PCBS ACCUMULATE TO RELATIVELY HIGH LEVELS IN INVERTEBRATE TISSUES AND THAT FOR MOST SPECIES PCBS ARE NOT

RAPIDLY DEPLETED WHEN EXPOSURE IS DISCONTINUED. BIOCONCENTRATION FACTORS FOR INVERTEBRATE SPECIES RANGE FROM 2700 TO 108,000. BIOCONCENTRATION FACTORS FOR PCB EXPOSURES OF FISH SPECIES RANGE FROM 3000 TO 274,000. (AWQCD* PB81-117798,80/ECAO)

(EDF) Etiological Potential: PCB EXPOSURES MAY INITIATE OR AGGRAVATE SKIN, LIVER, LUNG, AND NERVOUS DISEASES. ACUTE EXPOSURE MAY INITIATE CHLORACNE AND EYE IRRITATION, DERMATOLOGICAL SIGNS ASSOCIATED WITH FOLLICULAR KERATOSIS, AND VARIOUS NERVOUS SYMPTOMS. OCCUPATIONAL EXPOSURES HAVE BEEN RELATED TO CHLORACNE, JAUNDICE, AND ACUTE YELLOW LIVER ATROPHY. (IMEMDT 18,78/IARC) THE NIOSH RECOMMENDED STANDARD OF 1 .MU.G/M3 WAS DESIGNED TO REDUCE THE RISK OF DEVELOPMENT OF CARCINOGENIC, ADVERSE REPRODUCTIVE, HEPATOTOXIC, AND DERMATOLOGIC EFFECTS. (CRSOE* 77-225,77/NIOSH) UPDATED 11/84.

(CAG) Carcinogenicity: IN 1979, PCBS WERE CLASSIFIED AS "PROBABLY CARCINOGENIC FOR HUMANS" BY A WORKING GROUP OF THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC), AN AGENCY OF THE WORLD HEALTH ORGANIZATION (WHO). (IMEMDT 1-20,1,79/IARC) IN JAPAN, 9 OF 22 DEATHS (OR 41%) WERE DUE TO MALIGNANT NEOPLASMS (TUMORS IN STOMACH, LIVER, LUNGS, AND BREAST) AFTER PROLONGED EXPOSURE TO PCBS. (IMEMDT 18,78/IARC) TWO RETROSPECTIVE MORTALITY STUDIES OF A COHORT OF WORKERS OCCUPATIONALLY EXPOSED TO THESE CHEMICALS HAVE BEEN CONDUCTED. IN THE U.S., TWO MALIGNANT TUMORS AND FOUR OTHER CANCERS WERE DIAGNOSED IN 31 WORKERS (OR 19%) HEAVILY EXPOSED TO PCBS. FORTY-ONE PERCENT WERE DUE TO MALIGNANT NEOPLASMS (TUMOR IN STOMACH, LIVER, LUNGS, AND BREAST) AFTER PROLONGED EXPOSURE TO PCBS. (IMEMDT 18,78/IARC) THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH STUDIED 2,500 PCB-EXPOSED ELECTRICAL EQUIPMENT WORKERS, OVER 50% EXPOSED > 20 YEARS, AND FOUND NO SIGNIFICANT INCREASE IN CANCER, CARDIOVASCULAR DISEASE, OR NEUROLOGICAL MANIFESTATIONS. (PECODC 16,240,83/HAM) PCBS HAVE BEEN REPORTED TO CAUSE LIVER CANCER IN ANIMALS. ° SEE INDIVIDUAL AROCLOR PROFILES FOR MORE INFORMATION. UPDATED 11/84.

(MUT) Mutagenicity: AROCLOR 1221 CAUSES MUTAGENIC EFFECTS IN SALMONELLA TYPHIMURIUM. AROCLORS 1242 AND 1268 HAVE NOT CAUSED MUTAGENIC EFFECTS. (RCOCB* 15,653,76/WYN) (IMEMDT 18,78/IARC) RTECS ONLINE CITES REPORTS OF POSITIVE MUTAGENIC EFFECTS BY AROCLORS 1254 AND 1260 AND KANECHLOR 400. UPDATED 11/84.

(TER) Teratogenicity: TERATOGENIC EFFECTS WERE PRODUCED IN RHESUS MONKEYS FED PCBS (AROCLOR 1248). INFANTS BORN TO WOMEN SUFFERING FROM YUSHO DISEASE (EXPOSURE TO PCBS IN CONTAMINATED OIL) HAD ABNORMAL PIGMENTATION, OCULAR DISCHARGE, HYPERKERATOSIS, AND OTHER SKIN ABNORMALITIES AND WERE SMALLER THAN AVERAGE. (IMEMDT 18,78/IARC) IN JAPAN, SEVERAL TERATOGENIC EFFECTS IN OFFSPRING OF PATIENTS SUFFERING FROM YUSHO DISEASE WERE NOTED, INCLUDING SKULL DEFORMATIONS, INCREASED MELANIN PIGMENTS, SMALL SIZE FOR AGE, AND STILLBORN INFANTS. (PDTNBH 6(1)20,77/YAM)

(TRT) Major Species Threatened: BIRDS (EGG PRODUCTION); AQUATIC LIFE, AND PREDATORS.

(INH) Inhalation limit (value): 5; 10 (5 MG/M3 IS THE IDLH FOR PCBS WITH 54% CHLORINE; 10 MG/M3 IS THE IDLH FOR PCBS WITH 42% CHLORINE.)

(INT) Inhalation Limit (Text): REGULATIONS--

OSHA PEL\0.1 MG/M3 (54% CHLORINE)\(29CFR* 1910)

OSHA PEL\1 MG/M3 (42% CHLORINE)\(29CFR* 1910)

RECOMMENDATIONS--

NIOSH TWA\0.01 MG/M3\ \(CRSOE* 77-225,77/NIOSH)

NIOSH IDLH\5 MG/M3 (54% CHLORINE)\ \(PKTGD* 80/MAC

NIOSH IDLH\10 MG/M3 (42% CHLORINE)\ \(PKTGD* 80/MAC

ACGIH TLV (TWA) (SKIN)\0.5 MG/M3 (54% CHLORINE)\ \(TLVADM 84/ACGIH)

ACGIH TLV (TWA) (SKIN)\1 MG/M3 (42% CHLORINE)\ \(TLVADM 84/ACGIH)

ACGIH STEL (SKIN)\1 MG/M3/15 MIN (54% CHLORINE)\ \(TLVADM 84/ACGIH)

ACGIH STEL (SKIN)\2 MG/M3/15 MIN (42% CHLORINE)\ \(TLVADM 84/ACGIH).

UPDATED 11/84.

(IRL) Irritation Levels (Value): 0.013 TO 0.264 (MG/M3 AIR)

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- (IRT) Irritation Levels (Text): WORKERS COMPLAIN OF THROAT AND EYE IRRITATION WHEN EXPOSED TO CONCENTRATIONS BETWEEN 0.013 TO 0.264 MG/M3. UNBEARABLE IRRITATION OCCURRED AT 10 MG/M3. (CRSOE* 77-225,77/NIOSH)
- (DRC) Direct Contact: PCBS ARE READILY ABSORBED THROUGH THE SKIN. (NRCC** 16077,78/ROB) LIQUID OR SOLID PCBS ARE IRRITATING TO SKIN AND EYES. VAPORS CAUSE SEVERE IRRITATION OF EYES AND THROAT AND CAN CAUSE EYE AND LUNG INJURY. (CGHCD* 78/USCG) UPDATED 11/84.
- (JNS) General Sensation: PCBS HAVE A WEAK ODOR OR ARE PRACTICALLY ODORLESS. (CGHCD* 78/USCG) SIGNS AND SYMPTOMS REPORTED FROM INGESTION OF PCBS IN OIL IN JAPAN: ACUTE EXPOSURE SYMPTOMS: INCREASED EYE DISCHARGE AND SWELLING OF UPPER EYELIDS, ACNEFORM ERUPTIONS, AND FOLLICULAR ACCENTUATIONS, BRONCHITIS, PIGMENTATION OF THE SKIN, SWELLING, JAUNDICE, NUMBNESS OF LIMBS, SPASMS, HEARING AND VISION PROBLEMS, AND GASTROINTESTINAL DISTURBANCES. ACUTE EXPOSURE SIGNS: DECREASE IN ERYTHROCYTE COUNT, INCREASE IN LEUKOCYTE COUNT AND SERUM LIPIDS, PARTICULARLY TRIGLYCERIDES, LIVER DAMAGE, AND ADRENOCORTICAL AND OVARIAN DYSFUNCTION. THE HIGHER THE CHLORINE CONTENT, THE MORE TOXIC. OXIDES ARE STILL MORE TOXIC. CHRONIC EXPOSURE SYMPTOMS: PERSISTENT HEADACHES, GENERAL FATIGUE, WEAKNESS AND NUMBNESS OF LIMBS, AND WEIGHT LOSS. (AWQCD* PB81-117798,80/ECAO) (IMEMDT 18,78/IARC) SIGNS AND SYMPTOMS REPORTED FROM OCCUPATIONAL EXPOSURE TO PCBS, MOSTLY INHALATION AND DERMAL CONTACT. ACUTE EXPOSURE SYMPTOMS: DRY SORE THROAT, SKIN RASH, GASTROINTESTINAL DISTURBANCE, EYE IRRITATION, HEADACHES. ACUTE EXPOSURE SIGNS: CHANGES IN FAT METABOLISM, MILD DISTURBANCES IN LIVER FUNCTION, CHROMODERMATOSIS OF FINGER JOINTS AND NAIL BEDS, ACNEFORM EXANTHEMA. CHRONIC EXPOSURE SYMPTOMS: CHLORACNE (AWQCD* PB81-117798,80/ECAO) UPDATED 11/84.
- (DHI) Direct Human Ingestion (mg/kg): 7
- (SAF) Personal Safety Precautions: FOR PROTECTIVE CLOTHING AND EYE PROTECTION, SEE FIELD HND. NIOSH RESPIRATOR SELECTION GUIDE: FOR CONCENTRATIONS GREATER THAN 1.0 .MU.G/M3 FOR EMERGENCY SITUATIONS, USE EITHER (1) A SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR (2) A COMBINATION TYPE C SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE AND AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE. (CRSOE* 77-225,77/NIOSH) UPDATED 11/84.
- (AHL) Acute Hazard Level: PCBS ARE MODERATELY TOXIC TO HUMANS THROUGH ORAL, DERMAL, AND INHALATION ROUTES BASED ON INFORMATION IN FIELDS INT AND INS. LOWEST TOXIC ORAL DOSE FOR HUMANS REPORTED TO BE 7 MG/KG IN FIELD DHI.
- (CHL) Chronic Hazard Level: PCBS ARE STRONG CHRONIC IRRITANTS. TOXIC. SKIN ABSORPTION POTENTIAL. LIVER AND SKIN DISORDERS IN HUMANS. REPRODUCTION ABNORMALITIES IN HUMANS AND MAMMALS. IN BIRDS, CAUSES THIN EGG SHELLS. PROBABLE HUMAN CARCINOGEN AS REPORTED IN FIELD CAG.
- (HEL) Degree of Hazard to Public Health: WHILE ACUTE TOXICITY OF PCBS IS REPORTED LOW, TYPICAL CONTAMINANTS IN PCBS ARE SOME OF THE MORE TOXIC MATERIALS KNOWN TO MAN. CONSIDERED STRONG IRRITANT. HIGHLY TOXIC WHEN INHALED OR INGESTED. CHRONICALLY TOXIC WITH INHALATION OR SKIN ABSORPTION. RAPIDLY ACCUMULATES IN FOOD CHAIN. SOME OF THE HAZARDS OF THE PCBS CAN BE ATTRIBUTED TO POLYCHLORODIBENZOFURAN CONTAMINANTS. (BECTA6 10(6)372,73/CRO) (AWQCD* PB81-117798,80/ECAO)
- (AIR) Air Pollution: TOXIC. PCBS VOLATILIZE SLOWLY FROM BODIES OF WATER.
- (ACT) Action Levels: NOTIFY AIR AUTHORITY. RESTRICT ACCESS TO AFFECTED WATERS OR LAND SPILL AREAS. EVACUATE AREA IF NEAR HOMES. BUREAU OF EXPLOSIVES RECOMMENDATIONS--AVOID CONTACT WITH SPILLED MATERIALS. KEEP UPWIND TO AVOID BREATHING VAPORS OR DUST. FOR A LAND SPILL, BUILD DIKES TO CONTAIN FLOW AND KEEP MATERIAL OUT OF WATER SOURCES AND SEWERS. SUITABLE DIKE MATERIALS INCLUDE SOIL, SAND BAGS, FOAMED POLYURETHANE, OR FOAMED CONCRETE. OR ABSORB SPILLED LIQUID WITH FLY ASH OR CEMENT POWDER. (BUXEH* 81/STU) UPDATED 11/84.
- (AML) In Situ Amelioration: SEEK ENVIRONMENTAL ENGINEERING ASSISTANCE

THROUGH EPA'S ENVIRONMENTAL RESPONSE TEAM (ERT), EDISON, NJ, 24-HOUR PHONE NO. 201-321-6660. SINGLE-STAGE CONTACTOR DOSE OF POWDERED CARBON REQUIRED TO REDUCE THE INITIAL CONCENTRATION (C.F.) MRI RECOMMENDATIONS 12/84--SEEK PROFESSIONAL HELP TO EVALUATE PROBLEM AND IMPLEMENT CONTAINMENT PROCEDURES. ABSORB SPILLED MATERIAL WITH VERMICULITE, FULLER'S EARTH, PEAT MOSS, SAND, BENTONITE, OIL SPILL ABSORBANT PADS, OR OTHER COMMERCIAL ABSORBENTS. REMOVE CONTAMINATED SOIL. CONTAMINATED SOIL OR ABSORBENT MAY BE PACKAGED FOR DISPOSAL. FOR SMALL SPILLS, WASH IMPERVIOUS SURFACES WITH SOAP AND WATER AFTER USE OF ABSORBENTS. COLLECT WASH WATER FOR DISPOSAL. CONFIRM ALL TREATMENT PROCEDURES WITH RESPONSIBLE ENVIRONMENTAL ENGINEER AND REGULATORY OFFICIALS. BUREAU OF EXPLOSIVES RECOMMENDATIONS FOR PCBS SPILLED IN WATER--TRAP MATERIAL AT BOTTOM UTILIZING NATURAL DEEP WATER POCKETS, EXCAVATED LAGOONS, OR SAND BAG BARRIERS. APPLY ACTIVATED CARBON AT TEN TIMES THE AMOUNT OF SPILLED PCBS IN AREAS WHERE CONCENTRATION IS OVER 10 PPM. REMOVED TRAPPED MATERIAL ON BOTTOM WITH SUCTION HOSES OR MECHANICAL DREDGES AND LIFTS. (BUXEH* 81/STU)

- (SHR) Beach/Shore Restoration: ABSORB SPILLED PORTIONS WITH CARBON OR PEAT. DO NOT BURN. REMOVE CONTAMINATED SOIL.
- (AVL) Availability of Countermeasure Materials: PUMPS - FIRE DEPARTMENT; VACUUM SWIMMING POOL SUPPLIERS; CARBON - WATER TREATMENT PLANTS, SUGAR REFINERIES; PEAT - NURSERIES, FLORAL SHOPS.
- (DIS) Disposal Methods: CAPACITORS (SMALL AND LARGE); PROPERLY DRAINED TRANSFORMERS; CONTAMINATED SOIL, DIRT, RAGS, AND OTHER DEBRIS, DREDGE SPOILS; MUNICIPAL SLUDGES; AND PROPERLY DRAINED CONTAINERS (DRUMS) MAY BE SENT TO EPA-APPROVED CHEMICAL WASTE LANDFILL SITES FOR BURIAL. LIQUID PCB WASTE MUST BE STORED AND SENT TO INCINERATION OR HIGH TEMPERATURE BOILER FACILITIES APPROVED BY EPA. USE OF SELECTED NON-THERMAL METHODS ARE PERMITTED FOR TREATMENT OF TRANSFORMER OIL CONTAINING NOT MORE THAN 1000 PPM AROCLOR. CONFIRM DISPOSAL PROCEDURES WITH RESPONSIBLE ENVIRONMENTAL ENGINEER AND REGULATORY OFFICIALS. (PCB*** 81/SAV)
- (DSN) Disposal Notification: CONTACT EPA REGIONAL OFFICES FOR LOCATION OF EPA APPROVED CHEMICAL WASTE LANDFILLS AND INCINERATION FACILITIES.
- (WTP) Effects on Water Treatment Processes: PCBS WITH FEWER THAN 5 CHLORINES WERE DEGRADED BY ACCLIMATED SLUDGE MICROORGANISMS; 100% OF BIPHENYLS DEGRADED IN 48 HOURS, 15% OF 4 CHLORINE COMPOUNDS. ANOTHER STUDY FOUND DEGRADATION SHARPLY REDUCED IF SLUDGE SOLIDS WERE PRESENT. (ETPCB* PB84142579,83/LEI) UPDATED 11/84
- (WAT) Major Water Use Threatened: FISHERIES, POTABLE SUPPLY, RECREATION.
- (LOC) Probable Location and State of Material: LIQUID, WAXY SOLIDS, OR RESINS. WILL SINK TO BOTTOM OF STREAMS OR PONDS AND DISSOLVE ONLY SLIGHTLY.
- (DRT) Soil Chemistry: ALL PCBS ADSORB STRONGLY ON SOILS. PCB DECOMPOSITION IN SOILS DEPENDS ON LEVEL OF CHLORINATION. PCBS WITH FEWER THAN 5 CHLORINES HAVE A HALF-LIFE OF 30 DAYS OR LESS; THOSE WITH OVER 5 CHLORINES HAVE HALF-LIVES GREATER THAN 1 YEAR. (ETPCB* PB84142579,83/LEI) UPDATED 11/84.
- (HOH) Water Chemistry: HYDROLYSIS--PCBS ARE INERT AND STABLE TO CONDITIONS OF HYDROLYSIS. (IMEMDT 18,78/IARC) HYDROLYSIS NOT LIKELY TO OCCUR EVEN UNDER SEVERE ACIDIC AND BASIC CONDITIONS. (ETPCB* PB84142579,83/LEI) VOLATILIZES FROM WATER WITHOUT SEDIMENTS, HALF-LIVES OF 10 TO 12 HOURS REPORTED. ADSORPTION PREVENTS LOSS THROUGH VOLATILIZATION IF SEDIMENT IS PRESENT. (ETPCB* PB84142579,83/LEI) UPDATED 11/84.
- (COL) Color in Water: COLORLESS
- (DAT) Adequacy of Data: GOOD

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