



Material Safety Data Sheet

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| HCS Risk Phrases HCS CLASS: Highly toxic. HCS CLASS: Corrosive liquid. | |
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| Section 1. Chemical Product and Company Identification | | |
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| Common Name/ Trade Name | PCL Hexachlorocyclopentadiene | In Case of Emergency In the continental U.S.A. call CHEMTREC 800-424-9300 (24 hours) Outside the continental U.S.A. call CHEMTREC 703-527-3887 (24 hours) |
| Supplier | Velsicol Chemical LLC 10400 W. Higgins Road Rosemont, Illinois 60018 USA Phone: (847) 298-9000 Fax: (847) 298-9015 | Manufacturer Velsicol Chemical LLC 10400 W. Higgins Road Rosemont, IL 60018 U.S.A. Phone: 847-298-9000 Fax: 847-298-9015 |
| Synonym | 1, 2, 3, 4, 5, 5-Hexachloro-1, 3-cyclopentadiene | Material Uses Agricultural Industry: Intermediate for pesticides and fungicides. Other non-specified industry: Intermediate for Flame Retardant. |
| Chemical Name | Hexachlorocyclopentadiene | |
| Chemical Family | Not available. | |
| Chemical Formula | C5 Cl6 | |

| Section 2. Hazards Identification | |
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| Emergency Overview | Pale yellow to Amber dense, oily liquid. Pungent odor. DANGER! MAY BE FATAL IF INHALED. CAUSES SEVERE EYE AND SKIN BURNS. HARMFUL IF ABSORBED THROUGH SKIN. MAY BE HARMFUL IF SWALLOWED. |
| OSHA Regulatory Status | Not regulated. |
| Potential Health Effects | Inhalation and skin contact are expected to be the primary routes of occupational exposure to PCL Hexachlorocyclopentadiene. Liquid or spray mist may produce eye, skin, and respiratory tract burns. Inhalation of vapors or mists may cause severe lung damage and death. May cause allergic skin reaction in susceptible individuals. Hexachlorocyclopentadiene may be harmful to kidneys, lungs, liver and nervous system based on animal data. Repeated or prolonged exposure to low concentrations of spray mist may cause eye and skin irritation and respiratory tract irritation leading to frequent bronchial infections. |
| Potential Environmental Effects | See Section 12 |

| Section 3. Composition / Information on Ingredients | | |
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| Name | CAS# | % by Weight |
| 1) Hexachlorocyclopentadiene | 77-47-4 | 100 |

| Section 4. First Aid Measures | |
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| Eye Contact | Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention immediately. |
| Skin Contact | Immediately flush with plenty of water for 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes. |
| Inhalation | POISON. Get medical attention. Call a Poison Control Center. Remove to fresh air. If breathing is difficult, give artificial respiration. If breathing is difficult, give oxygen. |
| Ingestion | DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. |
| Note to Physicians | No additional remark |

| Section 5. Fire Fighting Measures | |
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| Flammability Properties | Non-flammable. |
| Suitable Extinguishing Media | Use dry chemicals, CO ₂ , water spray or foam.. |
| Unsuitable Extinguishing Media | Not available |

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| Specific Hazards Arising From Chemical | Contact with sodium may cause explosion. |
| Protective Equipment and Precautions for Firefighters | Firefighters and others who may be exposed to products of combustion should wear full firefighting turnout gear and self-contained breathing apparatus. Firefighting equipment should be thoroughly decontaminated after use. |

Section 6. Accidental Release Measures

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| Personal Precautions | Splash goggles. Full suit. Vapor respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves (impervious). Boots. |
| Environmental Precautions | Not available |
| Methods for Containment | Absorb with an inert material and put the spilled material in an appropriate waste disposal container. |
| Methods for Clean-Up | Stop the leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. DO NOT get water in containers. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. |

Section 7. Handling and Storage

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| Handling | Remove sources of ignition. Absorb with an inert material and place in an appropriate waste disposal container. Large quantities can be collected and atomized in a suitable combustion chamber or neutralized and flush into a sewer. |
| Storage | Cautiously neutralize spilled liquid and wash away remainder with plenty of water. |

Section 8. Exposure Controls/Personal Protection

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| Exposure Guidelines | Not available |
| Engineering Controls | Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposure. If practical use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. |
| Personal Protective Equipment | Splash goggles. Full suit. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. |

Section 9. Physical and Chemical Properties

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| Physical State / Appearance | Dense, oily liquid. |
| Color | Pale yellow to Amber. |
| Odor | Pungent odor. |
| Odor Threshold | 0.15 ppm |
| pH (1% soln/water) | Not available |
| Melting Point/Freezing Point | -9°C (15.8°F) |
| Boiling Point | 234°C (453.2°F) |
| Flash Point | Not applicable |
| Evaporation Rate | Not available |
| Flammability | Non-flammable |
| Flammable Limits | Not applicable |
| Vapor Pressure | 0.08 mm of Hg (@ 20°C). |
| Vapor Density | 9.42(Air = 1) |
| Specific Gravity | 1.7019 (Water = 1) |
| Solubility | Easily soluble in acetone. Very slightly soluble in cold water, hot water. 1.03-1.25 mg/l @ 22°C |
| Partition Coefficient | Not available |
| Auto-Ignition Temperature | Not applicable |
| Decomposition Temperature | Not available |
| Critical Temperature | Not available |
| Volatility | Not available |
| Viscosity | Not available |
| Molecular Weight | 272.77 g/mole |

Section 10. Stability and Reactivity Data

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| Chemical Stability | This product is stable |
| Conditions to Avoid | No additional remark |
| Incompatible Materials | Reactive with reducing agents, alkalis. Slightly reactive with organic materials, moisture. In the presence of moisture, Hexachlorocyclopentadiene will corrode iron and other metals. |

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| Hazardous Decomposition Products | When heated to decomposition, Hexachlorocyclopentadiene will emit fumes of chloride (hydrogen chloride, chlorine, phosgene gases) and carbon monoxide. |
| Possibility of Hazardous Reactions | Not available |

Section 11. Toxicological Information

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| Toxicity to Animals | <p>Acute oral toxicity (LD50): 113-1300 mg/kg (Rat), Slightly to moderately toxic. Acute oral toxicity (LD50): 505 mg/kg (Mouse), Slightly toxic. Acute dermal toxicity (LD50): 200-430 mg/kg (Rabbit), Moderately toxic. Acute inhalation toxicity (LC50): 0.041 mg/l, 4-hr (Rat), Highly toxic.</p> <p>Hexachlorocyclopentadiene (HEX) vapors are irritating to the eyes, skin and respiratory tract; however, direct contact with liquid HEX can cause burns. HEX did not produce allergic skin reaction in standard tests using guinea pigs. Inhalation of HEX vapors cause tearing, salivation and difficult breathing and at high concentrations, tremor, diffuse degenerative changes in the brain, heart, liver, adrenal glands and kidneys and blood and severe lung effects in rabbits, mice, rats and guinea pigs. No evidence of carcinogenicity was reported in rats or mice exposed to up to 0.2 ppm by inhalation for 2 years. Stomach, kidney and liver changes were observed in rodents after repeated oral administration. No effects, other than irritation, were observed after repeated application to rabbit skin. No birth defects were observed in offspring of rats, mice or rabbits administered HEX orally during fetal development. No genetic changes were reported in standard tests using bacteria, animals and animal cells.</p> |
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Section 12. Ecological Information

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| Ecotoxicology | <p>FRESHWATER ORGANISMS</p> <p>24-hr EC50 Daphnia magna: 0.093-0.130 mg/l (static), Highly toxic 24-hr LC50 Fathead minnow: 0.075-0.240 mg/l (static), Highly toxic 24-hr LC50 Channel catfish: 0.190 mg/l (static), Highly toxic 24-hr LC50 Bluegill: 0.170 mg/l (static), Highly toxic 48-hr EC50 Daphnia magna: 0.039-0.052 mg/l (static), Highly toxic 48-hr LC50 Channel catfish: 0.150 mg/l (static), Highly toxic 48-hr LC50 Bluegill sunfish: 0.150 mg/l (static), Highly toxic 48-hr LC50 Fathead minnow: 0.059-0.210 mg/l (static), Highly toxic 96-hr LC50 Fathead minnow: 0.059-0.180 mg/l (static), Highly toxic 96-hr LC50 Bluegill sunfish: 0.13 mg/l (static), Highly toxic 96-hr LC50 Goldfish: 0.078 mg/l (not reported), Highly toxic 96-hr LC50 Channel catfish: 0.097 mg/l (static), Highly toxic</p> <p>MARINE ORGANISMS</p> <p>96-hr LC50 Polychaete: 0.371 mg/l (static), Highly toxic 96-hr LC50 Grass shrimp: 0.042 mg/l (static), Highly toxic 96-hr LC50 Mysid shrimp: 0.032 mg/l (static), Highly toxic 96-hr LC50 Mysid shrimp: 0.007-0.012 mg/l (flowthrough), Highly toxic 96-hr Pinfish: 0.048 mg/l (static), Highly toxic 96-hr Spot: 0.037 mg/l (static), Highly toxic 96-hr Sheepshead minnow: 0.045 mg/l (static), Highly toxic</p> |
| Chemical Fate | <p>Photolysis and to lesser extent hydrolysis are the predominant degradation processes in water. Not amenable to biological treatment at sewage treatment plants. Possible accumulation of breakdown products. HEX may moderately bioaccumulate in aquatic organisms due to the octanol water partition coefficient; however, several studies on aquatic organisms have shown little potential for bioaccumulation.</p> |

Section 13. Disposal Considerations

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| Waste Disposal | Recycle to process, if possible. Consult your local or regional authorities for disposal options. HEX is a toxic waste under RCRA (U130). |
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Section 14. Transport Information

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| DOT Proper Shipping Name | RQ Hexachlorocyclopentadiene |
| DOT Hazard Class | DOT CLASS: 6.1: Poisonous material. |
| UN Identification Number | UN2646 |
| Packing Group | I, Inhalation Hazard |
| Additional Information | No additional remark |

Section 15. Other Regulatory Information and Pictograms

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| Federal and State Regulations | <p>TSCA Section 8 (d) Reporting Termination (40 CFR 716, Subpt. B). Clean Air Act Amendments of 1990, Statutory Hazardous Air Pollutant under Section 112. Clean Air Act Section 112 (i) Early Reduction Program: High-Risk Hazardous Air Pollutants (40CFR 63.74). Clean Water Act Section 304 (a) (1) Ambient Water Quality Criteria. Clean Water Act Section 307 (2)(1) Priority Pollutants (40 CFR 401.15). Clean Water Act Section 311 Hazardous Chemicals (40 CFR 116.4). RCRA Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261). RCRA Hazardous Constituents Groundwater Monitoring (40 CFR 264, Appendix IX). RCRA Land Disposal Prohibition-Halogenated Organic Compounds (40 CFR 268.32). RCRA Land Disposal Prohibition-Solvents, Dioxins, and California List Wastes (40 CFR 268.30-.32). RCRA U List of Hazardous Waste (40 CFR 261.33 (f): RCRA U-number is U130. Safe Drinking Water Act MCLs (40 CFR 141) SDWA Maximum Contaminant Level: 0.05 mg/l. Safe Drinking Water Act MCLGs (40 CFR 141). SDWA Maximum Contaminant Level Goal: 0.05 mg/l. Safe Drinking Water Act Synthetic Organic Chemical Monitoring (40 CFR 141). Safe Drinking Water Act 1986 Amendments Statutory Contaminants (53 Fed.Reg. 1892). CERCLA Hazardous Substance (40 CFR 302) The Reportable Quantity (RQ) is 10 lbs. EPCRA (SARA Title III) Section 302 Extremely Hazardous Substance (EHS) (40 CFR 355, Appendix A) De Minimis Concentration for Section 313 is 1.0%. EPCRA (SARA Title III) Section 313 Toxic Chemical (40 CFR 372.65)-Supplier notification required. De Minimis Concentration for Section 313 is 1.0%. Research & Special Programs Administration (RSPA/DOT) Hazardous Substances other than Radionuclides (40 CFR 172.101, App. A, Tbl. 1). The RSPA/SOT Reportable Quantity (RQ) is 10 lbs. OSHA Hazard Communication Standard: On one of the Floor Lists of the OSHA HCS (29 CFR 1910.1200). Connecticut Hazardous Material Survey. Florida Toxic Substances Right-to-Know Reporting. Illinois Toxic Substances Disclosure to Employees Act. Illinois Chemical Safety Act. Louisiana Right-to-Know Reporting List. Louisiana Spill Reporting. Massachusetts Right-to-Know Substance List. MA Spill List. Michigan Critical Materials Register (1/1/96); Michigan Natural Resources and Environmental Protection Act. New Jersey Right-to-Know Substances. New Jersey Community Right-to-Know Survey: N.J. Environmental Hazardous Substances (EHS) List. New Jersey Spill Tax List. New Jersey Hazardous Substance Sub-list. New Jersey CERCLA Substance Sub-list. New Jersey Environmental Hazard Sub-list. New York Release Reporting: List of Hazardous Substances. Pennsylvania Right-to-Know Hazardous Substances. Rhode Island Hazardous Substances Right-to-Know Act. Canada WHMIS Ingredient Disclosure List. Canadian National Pollutant Release Inventory (NPRI) Substances. Canadian Accelerated Reduction/Elimination of Toxics (ARET) Candidate substances for Voluntary Action (March 1995).</p> | | | |
| Other Classifications | WHMIS (Canada) | WHMIS CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC). | | |
| HMIS (U.S.A.) | Health Hazard 3 Fire Hazard 0 Reactivity 1 Personal Protection | National Fire Protection Association (U.S.A.) | Health 3 Fire Hazard 0 Reactivity 1 Specific Hazard COR | |

| Section 16. Other Information | |
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| References | <ul style="list-style-type: none"> -REGISTRY Database, Chemical Abstract Service, 6/3/96 -CHEMLIST Database, Chemical Abstract Service, 6/3/96 -MEDITEXT Medical Management Database, Micromedex Inc., Vol. 28, 4/30/96 -HAZARDTEXT Database, Micromedex Inc., 9/2/95 -Department of Transportation, Emergency Response Guides, Vol. 26, 10/31/95 -Registry of Toxic Effects of Chemical Substances (RTECS), 10/1/95 -SARATEXT System, Micromedex Inc., 9/1/95 -New Jersey Hazardous Substance Fact Sheet, 10/30/86 -Hazardous Substance Data Bank (HSDB), National Library of Medicine, #4011, 1/20/95 -Chemical Hazard Response Information System (CHRIS), Micromedex Inc., Vol. 26, 10/31/95 -Oil and Hazardous Materials/Technical Assistance Data Systems (OHM/TADS), Micromedex Inc., Vol. 26, 10/31/95 -Integrated Risk Information System (IRIS), U.S. EPA, 4/1/92 -The Guide to Chemical Hazards, National Institute for Occupational Safety and Health, Vol. 26, 10/31/95 -LOLI Database, Chem Advisor via Micromedex Inc., 2/19/96 -Transportation Database, U.S. DOT, Micromedex Inc., 7/10/96 -Transportation Database, Canadian TDG, Micromedex Inc., 7/10/96 -ICRMS North American Database, Ariel Research Corporation, 3/4/96 -ICRMS U.S. DOT Database, Ariel Research Corporation, 3/4/96 -ICRMS European Database, Ariel Research Corporation, 7/10/96 -ICRMS Inventories Database, Ariel Research Corporation, 3/4/96 -Velsicol Chemical LLC, unpublished studies, 7/12/74 |
| Other Special Considerations | ADDITIONAL REGULATORY AND SAFETY INFORMATION AVAILABLE FROM VELSICOL CHEMICAL CORPORATION. |
| Prepared By & Date | Dawei Li 12/04/08 |
| Supersedes | 2/24/06 |
| Revision | Updated document to ANSI 2004 format |
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