



Safety Data Sheet (SDS)

Revision / Review Date: 1/8/14

1. Chemical Product and Company Identification

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| Product Name: | TCP |
| Distributed By: | HB Chemical 1665 Enterprise Parkway Twinsburg Oh 44087 Phone - 330-920-8023 |
| SDS Prepared By (w Suppliers Input): | HB Chemical |
| Chemical Name / Family: | Tricresyl Phosphate (mixed isomers)/ Alkyl Phosphate |
| Common name: | Lindol TCP |
| Molecular Formula: | C ₂₁ H ₂₁ O ₄ P |
| Molecular Weight via GPC, Mn: | 368.36 g/mol |
| Product Use: | Plasticizer |
| OSHA Status: | Hazardous |
| CAS No: | 1330-78-5, 78-30-8, 25155-23-1 |

For emergency health, safety, and environmental information, calls 330-920-8023

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

2. Hazard(s) Identification

Warning:



Signs and Symptoms of Exposure:

Not available.

Primary Routes of Entry:

Skin and inhalation.

Medical Conditions Generally Aggravated by Exposure:

Not available.

Eye Contact:

May irritate eyes.

Skin Contact:

Not expected to cause irritation. If excess amounts are absorbed through skin product may cause cholinesterase inhibition.

Ingestion:

May be harmful if swallowed.

Inhalation:

May cause irritation of the mucous membranes. May cause respiratory irritation. Overexposure may cause cholinesterase inhibition.

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| <u>NFPA Rating:</u> | Health-1, | Fire-1, | Reactivity-0 |
| <u>HMIS Hazard Ratings:</u> | Health- 1, | Flammability -1, | Reactivity-0 |
| <u>HMIS limitation statement:</u> | The HMIS hazard ratings numbers are meant to give a quick indication of the relative hazards associated with the product. All of the information contained in the SDS should be consulted to assist with the safe handling of this material. | | |

3. Composition / Information on Ingredients

| Weight Percent / Typical | Component Identity | CAS Number |
|--------------------------|-------------------------------------|------------|
| 60-95% | Tricresyl Phosphate (mixed isomers) | 1330-78-5 |
| <1.0% | Tri-ortho-cresyl phosphate | 78-30-8 |
| 5-40% | Trixylyl Phosphate | 25155-23-1 |

4. First Aid Measures

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| <u>Inhalation:</u> | Remove to fresh air; give artificial respiration or oxygen if necessary. |
| <u>Eyes:</u> | Flush eyes with water for 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye. Call a physician if irritation develops. |
| <u>Skin:</u> | Remove contaminated clothing and equipment. Wash skin with soap and water. If in contact with hot product, treat as a burn. |
| <u>Ingestion:</u> | Do not induce vomiting. Never give anything by mouth to unconscious person. Seek medical attention immediately. If victim is conscious, give milk or water to dilute stomach contents. |

5. Fire-Fighting Measures

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| <u>Suitable Extinguishing Media:</u> | Use Chemical foam, CO2, Dry Chemical, water fog. |
| <u>Special Fire Fighting Procedures:</u> | Firefighters should wear full face self-contained breathing apparatus. |
| <u>Hazardous Combustion Products:</u> | This product will decompose under extreme temperatures forming oxides of carbon, oxides of phosphorus, and phosphoric acid. |
| <u>Unusual fire and explosion hazards:</u> | None known. |

6. Accidental Release Measures

Steps to be taken in case material is Spilled:

Wear appropriate personal protective equipment. Immediately turn off or isolate any source of ignition. Evacuate area and ventilate. Personnel should contain spill immediately with inert materials (sand, earth, chemical spill pads of cotton) by forming dikes. Dikes should be placed to contain spill in a manner that will prevent material from entering sewers and waterways. Large spill, once contained, may be picked up using explosion proof, non-sparking vacuum pumps, shovels, or buckets, and disposed of in suitable containers for disposal. If a large spill occurs notify appropriate authorities.

Environmental Disposal Information:

Keep out of water ways. Can be toxic to aquatic environment.

Waste Disposal:

All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded may be a regulated waste. Refer to state and local regulations.

7. Handling and Storage:

Empty Containers:

Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes.

Storage:

Store in a cool, dry, ventilated area. Keep containers closed when not in use. Do not store near extreme heat, open flame, or sources of ignition.

Precautions to be taken in handling:

Wear protective clothing including chemical goggles and rubber gloves when handling this product to avoid eye and skin contact. Handle in a well-ventilated area. Avoid inhalation of vapor or mist. Wash thoroughly after handling.

8. Exposure Controls / Personal Protection

Exposure Controls:

Not available.

Respiratory Protection:

In case of insufficient ventilation wear suitable respiratory equipment.

Ventilation:

Adequate ventilation is recommended to control potential employee exposure.

Hand protection:

Neoprene gloves

Eye Protection:

Wear safety glasses or chemical goggles.

Skin and Body Protection:

To prevent repeated or prolonged skin contact, wear impervious clothing.

Other Precautions: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

Decontamination Facilities: Safety shower and eye bath should be provided.

9. Physical and Chemical Properties

Physical Form: Clear liquid

Appearance & Odor: Clear / amber colorless liquid/ Slight odor

Specific Gravity: @25°C = 1.15

Solubility in Water: <0.2%

Viscosity, mPa: (20°C) = 12

Flash Point, TAG CC F: 241°C (465 °F) (open cup)

Percent Volatiles (by weight): Not available.

Evaporation Rate (Water ~ I): < 1 (butyl acetate=1)

Relative density: 1.162 g/mL (25°C)

Vapor Pressure (mm Hg): 0.1 m Hg (15 °C)

Vapor Density (Air ~ I): 12.70

Boiling Point (°F) Initial: 260°C (500°F) @ 10mm Hg

Auto ignition Temperature, °C: Not available.

Flammable Limits, %(V): Not available.

Freezing point: -20 °C (-4°F)

Ignition temperature: 36 °C (685°F)

10. Stability and Reactivity

Stability: This product is stable under normal conditions.

Incompatibility (Materials to Avoid): Strong oxidizing agents, strong acids and strong alkalis.

Conditions to Avoid: Extreme heat and prolonged storage at elevated temperatures.

Hazardous decomposition products: Carbon dioxide and carbon monoxides. Phosphorus oxides

Hazardous Polymerization: Hazardous polymerization will not occur

11. Toxicological Information

This material is not listed as a carcinogen or potential carcinogen by NTP, IARC, or OSHA.

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| <u>Target organs:</u> | Overexposure to this material may affect the nervous system, reproductive system and respiratory system. |
| <u>Inhalation Chronic:</u> | May cause respiratory tract irritation and cholinesterase inhibition. |
| <u>Dermal:</u> | Practically non-toxic; the acute LD50 for this material is greater than 4640mg/kg in rabbits. Dermal exposure may cause cholinesterase inhibition. |
| <u>Dermal Chronic:</u> | Prolonged exposure may cause cholinesterase inhibition. |
| <u>Ingestion Chronic:</u> | Repeated ingestions may cause cholinesterase inhibition. |
| <u>Reproductive toxicity:</u> | In reproductive toxicity test, male and female rats received daily oral doses of trixylenyl phosphate for two weeks after which they were mated. Although mating was successful, there was a treatment-related decrease in the pregnancies in the mid and high dose animals. While there were no pregnancies in the high dose animals, when the previously treated animals were maintained without treatment for four weeks and then mated, all the females became pregnant. This anti-fertility effect is fully reversible. The ortho isomer of TCP (triclesyl phosphate) has been shown to cause reproductive toxicity in male rats. A metabolite of TOCP (tri ortho-cresyl phosphate) apparently causes a reversible adverse effect on spermatogenesis, which results in decreased male fertility. The meta and para isomers of TCP do not adversely affect the male reproductive system. |
| <u>Neurotoxicity:</u> | Trixylenyl phosphate can cause acute delayed neurotoxicity when administered orally to hens at >1000mg/kg. A single oral dose of 2000 mg/kg of triclesyl phosphate to hens resulted in no effects in neurotoxic esterase activity and no clinical signs of neurotoxicity. Five consecutive daily oral doses of 2000 mg/kg of this product to hens resulted in a slight decrease in neurotoxic esterase activity but no clinical signs of neurotoxicity. In a recently conducted neurotoxicity test, this product did not express neurotoxic activity. |

12. Ecological Information

This material has not been evaluated for environmental effects.

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| <u>Environmental toxicity:</u> | This product is expected to be toxic to marine life and does appear on the marine pollutants list. |
| <u>Acute algae toxicity:</u> | TRICLESYL PHOSPHATE, EC50 Growth inhibition / 96 h / Scenedesmus pannonicus - 1.3 mg/l |

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| <u>Acute Daphnia Toxicity:</u> | (TRICRESYL PHOSPHATE), EC50 / 48h / Water flea - 2.3 mg/l |
| <u>Acute fish toxicity:</u> | TRICRESYL PHOSPHATE, LC50 / 96h / Rainbow trout - 0.26 mg/l |
| <u>Bioaccumulation:</u> | Fathead minnow -32 days / Bioconcentration factor (BCF): 165 |

13. Disposal Considerations

Reclaim or Dispose of material in accordance with all applicable local, state, and federal regulations.

14. Transport Information

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| <u>D.O.T. Shipping Name:</u> | Environmentally hazardous substance. |
| <u>Air - ICAO (international Civil Aviation Organization):</u> | Environmentally hazardous substance. |
| <u>Sea - IMDG (International Maritime Dangerous Goods):</u> | Environmentally hazardous substance. |

15. Regulatory Information

All components of this material are on the TSCA Inventory.

All components of this material are on the Canadian DSL.

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| <u>SARA 311, 312:</u> | Acute, Chronic |
| <u>New Jersey RTK Label Information:</u> | Tricresyl Phosphate, CAS # 1330-78-5, 78-30-8, 25155-23-1 |
| <u>Pennsylvania RTK Label Information:</u> | Tricresyl Phosphate, CAS # 1330-78-5, 78-30-8, 25155-23-1 |
| <u>California Prop 65 Components:</u> | This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. |

16. Other Information

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.