

## Section 1 – Chemical Product and Company Identification

MSDS Name: Di-tert-butylchlorophosphine

Chemical Family: Organochlorophosphine

Molecular Formula: C<sub>8</sub>H<sub>18</sub>PCl

Use of the substance: For research and development use only.

Company: Optima Chemicals Group, LLC  
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## Section 2 – Hazards Identification

### Hazards:

Combustible, corrosive liquid. Air and moisture sensitive.

Handle under nitrogen or inert gas.

Reacts slowly with moisture or air to form hydrogen chloride, and phosphorous oxides.

Corrosive - Causes severe skin burns, eye damage, and is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Harmful if swallowed, inhaled, or absorbed through the skin. May be a lachrymator.

NFPA Rating: Health: 3 Flammability: 2 Reactivity: 1 Special: None

## Section 3 – Composition, Information on Ingredients

<u>CAS #</u>	<u>Chemical Name</u>	<u>Wt.%</u>
13716-10-4	Di-tert-butylchlorophosphine	95-100

## Section 4 – First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower lids. Seek medical attention.

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Thoroughly wash with soap and water, and seek medical attention.

Ingestion: Quickly wipe material from the mouth, and rinse mouth out with plenty of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

Inhalation: Remove from exposure, to fresh air immediately. If not breathing give artificial respiration, and seek medical attention.

Notes to Medical Doctor: This product is corrosive to eyes, skin, respiratory and gastrointestinal tracts. Careful gastric lavage with an endotracheal tube in place should be considered. Treatment is otherwise symptomatic and supportive.

### **Section 5 – Fire Fighting Measures**

Flammable Limits: Upper: Not available Lower: Not available

General Hazard: Corrosive liquid. Reacts with moisture or air to form hydrogen chloride, and acid. Combustible.

Fire Extinguishing Agents Recommended: Use CO<sub>2</sub>, dry chemical powder, or alcohol foam.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide, phosphorus oxides, hydrogen chloride.

Special Fire fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Do not breathe smoke, gases, or vapors.

Autoignition temperature: Not applicable.

Properties contributing to flammability: Combustible liquid.

Flashpoint: 62 degrees C

Sensitivity to Static Discharge: No

Sensitivity to Impact: None

## Section 6 – Accidental Release Measures

Remove all sources of ignition. Keep water or moisture away from spilled material. Contain spill with absorbent. Transfer to approved transport container and clean up spillage with an absorbent. Dispose of waste according to local and Federal laws and regulations. Before cleanup measures begin, review the entire MSDS with particular attention to Section 3, and Section 8.

## Section 7 - Handling and Storage

Handling: Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or mist. Use in a closed system under argon or nitrogen.

Storage: Use and store under argon or nitrogen. Store in tightly closed container. Keep away from sources of ignition.

## Section 8 – Exposure Controls, Personal Protection

Exposure Limits: PEL (OSHA) –None, TWA (ACGIH) – None, STEL/Ceiling (OSHA) – None.

Engineering Controls: Use in closed system under argon or nitrogen. If personal contact can occur, use local exhaust ventilation (explosion proof), to keep airborne concentrations low.

Eyes and Face: Wear splash goggles with a face shield.

Skin: Chemical resistant gloves and clothing.

Respiratory: When engineering controls are not adequate, wear a NIOSH/MSHA respirator approved for protection against organic vapors and mists.

Work Hygienic Practices: Quick-drench eyewash and safety shower.

## Section 9 – Physical and Chemical Properties

Appearance and Odor: Liquid, stench.

Melting Point: Not available

Boiling Point: 48 degrees C @3mm Hg

Flash Point: 62 degrees C

Vapor Pressure: Not available

Vapor Density: Not available

pH: Not available

Specific Gravity: 0.951 g/3cm

Percent Volatile: 100%

Water Solubility: Insoluble

Evaporation Rate: Not available

Flammable Limits: Not available

Molecular Weight: 180.66

Autoignition Temperature: Not applicable

Viscosity: Not available

Decomposition Temperature: Not available

Explosive Properties: Not explosive

Oxidizing Properties: Not an oxidizer

### **Section 10 – Stability and Reactivity**

Stability: Stable at room temperature

Incompatibility: Heat, fire, air, and oxidizing chemicals.

Hazardous Polymerization: Does not polymerize

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen chloride gas, Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine.

Conditions to Avoid: Heat, exposure to air.

### **Section 11 – Toxicological Information**

Eyes: Expected to be corrosive.

Skin: Expected to be corrosive.

Ingestion: No data available.

Inhalation: No data available.

Acute Effects from Overexposure: This product is corrosive to the eyes (may cause blindness), skin, respiratory and gastrointestinal tracts. Harmful if swallowed, inhaled, or absorbed through skin. May be a lachrymator.

Chronic Effects from Overexposure: No data available.

Sensitization: No data available.

Carcinogenicity: Not listed by NTP, OSHA, EH40. IARC, or ACGIH.

Mutagenicity: No data available.

Reproductive Toxicity: No data available.

### **Section 12 – Ecological Information**

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available. The product reacts with air and moisture to form phosphine oxides, and hydrochloric acid.

### **Section 13 – Disposal Considerations**

Dispose of in accordance with federal, state, and local regulations.

### **Section 14 – Transport Information**

DOT Shipping Name: Corrosive liquid, acidic, organic, n.o.s. (Di-tert-butylchlorophosphine)

Classification: Corrosive

Labels: Corrosive

UN Number: UN3265

Packing Group: II

Marine Pollutant: No

Custom Tariff Number: 2931.00.9160

PIH: Not designated Poison Inhalation Hazard by USDOT.

### **Section 15 – Regulatory Information**

#### United States:

Section 311 Hazard Category (40CFR 370): Reactive, acute health hazard.

Section 313 Reportable Ingredients (40 CFR 372): No reporting requirements.

Section 302 Extremely Hazardous Substances (40 CFR 355): Not listed.

CERCLA Hazardous Substance, RQ, (40 CFR 302.4): Not listed.

TSCA Sec 12B Export Notification: Not subject to these requirements.

TSCA Inventory Status (40 CFR 710): Not listed. For research and development purposes only.

Canada:

WHMIS: Hazard Classification – UN 3265, Class B, Division 3 (Combustible liquid), Class E, (Corrosive), Ingredient Disclosure List: Not listed.

**Section 16 – Additional Information**

Creation Date: 1/25/2010

This MSDS has been prepared to meet U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

This information is believed to be accurate and represents the best information currently available to Optima Chemical Group LLC. However, we make no warranty of merchantability, express or implied, with respect to such information and assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.