

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Di-tert-butylchlorophosphine (DTBCP)  
**CHEMICAL FAMILY:** Organochlorophosphine  
**MOLECULAR FORMULA:** C<sub>8</sub> H<sub>18</sub> P Cl  
**GENERAL USE:** For research and development use only.

**MANUFACTURER**  
FMC CORPORATION  
Lithium Division  
P.O. Box 795  
Bessemer City, NC 28016-0795  
**General Information:** (704) 868-5300

**Emergency Telephone Numbers:**  
**CHEMTREC** (800) 424-9300  
**Emergency Phone** (704) 629-5361 (Plant) Call Collect 24 Hr/Day  
**Emergency Phone** (303) 595-9048 (Medical) Call Collect

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

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

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

### IMMEDIATE CONCERNS:

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.

### POTENTIAL HEALTH EFFECTS:

Corrosive to eyes (may cause blindness), skin, mucous membranes and upper respiratory tract. Harmful if swallowed, inhaled, or absorbed through skin. May be a lachrymator. Stench.

### COMMENTS:

(See Section 11, Toxicological Information)

## 4. FIRST AID MEASURES

### EYES:

Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.

### SKIN:

Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. Obtain immediate medical attention. Contact a medical doctor if necessary.

### INGESTION:

Quickly wipe material from the mouth and rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

### INHALATION:

Remove to fresh air. If breathing discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

**NOTES TO MEDICAL DOCTOR:**

This product is corrosive to the skin, eyes and mucous membranes of the respiratory and gastrointestinal tracts. Consideration should be given to gastric lavage, with endotracheal tube in place. Treatment is controlled removal of exposure with symptomatic and supportive care.

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**5. FIRE FIGHTING MEASURES**

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**FLAMMABLE LIMITS:**

Upper: Not available Lower: Not available

**GENERAL HAZARD:**

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

**EXTINGUISHING MEDIA:**

Carbon dioxide, dry chemical powder or alcohol foam.

**HAZARDOUS COMBUSTION PRODUCTS:**

carbon dioxide, carbon monoxide, phosphorous oxides, hydrogen chloride

**FIRE FIGHTING PROCEDURES:**

Wear full protective clothing and self-contained breathing apparatus (SCBA) approved for fire fighting. This is necessary to protect against the hazards of heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.

**AUTOIGNITION TEMPERATURE:**

Not applicable

**PROPERTIES CONTRIBUTING TO**

combustible liquid

**FLAMMABILITY:**

**FLASH POINT:**

62 °C

**SENSITIVITY TO STATIC DISCHARGE:**

No

**SENSITIVITY TO IMPACT:**

None

**COMMENTS:**

(See Section 10, Stability and Reactivity)

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**6. ACCIDENTAL RELEASE MEASURES**

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**RELEASE NOTES:**

Remove all sources of ignition. Keep water or moisture away from spilled material. Contain spill with absorbant. Transfer to suitable container and clean spillage with an absorbant. 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, Emergency Overview and Potential Health Effects; and Section 8, Recommended Personal Protective Equipment.

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**7. HANDLING AND STORAGE**

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**HANDLING:**

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

**STORAGE:**

Keep away from heat, sparks and flame. Keep container tightly closed. Use and store under argon or nitrogen.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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**EXPOSURE LIMITS**

**Chemical Name**

none

**TWA  
(ACGIH)**

**STEL/Ceiling  
(ACGIH)**

**PEL  
(OSHA)**

**STEL/Ceiling  
(OSHA)**

**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 below exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**Eyes And Face:**

Chemical splash goggles with a face shield.

**Respiratory:**

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

**Protective Clothing:**

Chemical resistant gloves (Viton) and clothing.

**Work Hygienic Practices:**

Quick-drench eyewash and safety shower.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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<b><u>ODOR:</u></b>	Stench
<b><u>APPEARANCE:</u></b>	Liquid.
<b><u>pH:</u></b>	Not available
<b><u>PERCENT VOLATILE:</u></b>	100%
<b><u>VAPOR PRESSURE:</u></b>	Not available
<b><u>VAPOR DENSITY:</u></b>	Not available
<b><u>BOILING POINT:</u></b>	(48 °C 3 mmHg)
<b><u>MELTING POINT:</u></b>	Not available
<b><u>SOLUBILITY IN WATER:</u></b>	Insoluble in water, reacts
<b><u>EVAPORATION RATE(Butyl Acetate = 1):</u></b>	Not available
<b><u>SPECIFIC GRAVITY:</u></b>	0.951 g/cm <sup>3</sup>
<b><u>MOLECULAR WEIGHT:</u></b>	180.66
<b><u>COEFF. OIL/WATER:</u></b>	Not available
<b><u>ODOR THRESHOLD:</u></b>	Not available
<b><u>FLAMMABLE LIMITS:</u></b>	Upper: Not available Lower: Not available
<b><u>FLASH POINT:</u></b>	62 °C
<b><u>AUTOIGNITION TEMPERATURE:</u></b>	Not applicable
<b><u>EXPLOSIVE PROPERTIES:</u></b>	Not explosive
<b><u>OXIDIZING PROPERTIES:</u></b>	Not an oxidizer

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**10. STABILITY AND REACTIVITY**

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<b><u>CONDITIONS TO AVOID:</u></b>	Heat, exposure to air.
<b><u>STABILITY:</u></b>	Stable at room temperature.
<b><u>POLYMERIZATION:</u></b>	Does not polymerize
<b><u>HAZARDOUS DECOMPOSITION PRODUCTS:</u></b>	Carbon monoxide, carbon dioxide, hydrogen chloride gas. Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine.
<b><u>INCOMPATIBLE MATERIALS:</u></b>	Heat, fire, air and oxidizing chemicals.

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**11. TOXICOLOGICAL INFORMATION**

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<b><u>Eye Contact:</u></b>	Product is expected to be corrosive.
<b><u>Skin Contact:</u></b>	Product is expected to be corrosive.
<b><u>Skin Absorption:</u></b>	No data available for the product.
<b><u>Ingestion:</u></b>	No data available for the product.
<b><u>Inhalation:</u></b>	No data available for the product.

**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. Stench.

**Chronic Effects From Overexposure:**

No data available for the product.

**Sensitization:**

No data available for product.

**Carcinogenicity:**

EH40: Not listed  
IARC: Not listed  
NTP: Not listed  
OSHA: Not considered a carcinogen under OSHA.  
ACGIH: Not listed

**Mutagenicity:**

No data available for product.

**Reproductive Toxicity:**

No data available for product.

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicological Information:**

No data available for product.

**Chemical Fate Information:**

No data available for product. di-tert-Butyl-chlorophosphine reacts with air and moisture to form phosphine oxides and hydrochloric acid.

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## 13. DISPOSAL CONSIDERATIONS

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**DISPOSAL METHOD:**

Dispose of waste according to local and Federal laws and regulations.

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## 14. TRANSPORT INFORMATION

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**PROPER SHIPPING NAME:**

Corrosive liquid, acidic, organic, n.o.s. (Di-tert-butylchlorophosphine)

**CLASSIFICATION:**

Corrosive

**LABELS:**

Corrosive

**UN NUMBER:**

UN3265

**PACKING GROUP:**

II

**CUSTOM TARIFF NO:**

2931.00.9160

**MARINE POLLUTANT:**

No

**PIH:**

Not designated Poison Inhalation Hazard by US DOT.

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## 15. REGULATORY INFORMATION

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**UNITED STATES**

**SECTION 311 HAZARD CATEGORY (40 CFR 370):**

Immediate (acute) health hazard, reactive

**SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):**

This product does not contain a toxic chemical subject to the reporting requirements of Section 313 of Emergency

**SECTION 302 EXTREMELY HAZARDOUS  
SUBSTANCES (40 CFR 355):**  
**CERCLA HAZARDOUS SUBSTANCE (40 CFR  
302.4):**  
**TSCA SEC 12B EXPORT NOTIFICATION:**  
  
**TSCA INVENTORY STATUS (40 CFR 710):**

Planning and Community Right-To-Know Act of 1986.  
  
Not listed  
  
Not listed  
This product is not subject to TSCA 12 (b) Export  
Notification Requirements.  
This product is for research and development purposes only,  
and not for commercial use. Di-tert-butylchlorophosphine is  
not listed on the TSCA Inventory.

**CANADA  
WHMIS:**

Product Identification No.: UN3265  
Hazard Classification: Class B, Division 3 (Combustible  
liquid)  
Class E, (Corrosive)  
Ingredient Disclosure List: not listed

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## **16. OTHER INFORMATION**

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**REVISION SUMMARY:** Revision # 1: Section 14 revised.

**NFPA RATING**

**HEALTH:** 3  
**FLAMMABILITY:** 2  
**REACTIVITY:** 1  
**SPECIAL:** none

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.  
type 7b

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