Section 1 – Chemical Product and Company Identification

MSDS Name: tert-Butyl-dichlorophosphine

Chemical Family: Organochlorophosphine

Molecular Formula: $C_4H_9PCl_2$

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

Company: Optima Chemicals Group, LLC
200 Willacoochee Hwy.
Douglas, Georgia 31535
Telephone (912) 384-5101 FAX (912) 384-6330
Emergencies: Telephone (912) 384-5101

Section 2 – Hazards Identification

Hazards:
Corrosive solid. Reacts violently with water. Handle under nitrogen or inert gas. Reacts slowly with moisture to form Hydrogen Chloride and Phosphorous oxides.
Corrosive to eyes(may cause blindness), skin, and is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Harmful if inhaled, swallowed or absorbed through the skin. Lachrymator. Stench.

NFPA Rating: Health: 3 Flammability: 0 Reactivity: 3 Special: None

In case of fire do not use water. Use dry chemical.

Section 3 – Composition, Information on Ingredients

CAS #	Chemical Name	Wt.%
25979-07-1	Tert-Butyl-dichlorophosphine	95-100

Section 4 – First Aid Measures

Eyes: 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 and/or shoes. 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 breathing discomfort occurs and persists seek medical attention. 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 solid. Reacts slowly to moisture to form hydrogen chloride and phosphorous oxides. Combustible..

Fire Extinguishing Agents Recommended: Dry Chemical powder

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.

Autoignition temperature: Not applicable.

Properties contributing to flammability: Not applicable.

Flashpoint: not available

Sensitivity to Static Discharge: No

Sensitivity to Impact: None

Section 6 – Accidental Release Measures

Remove all sources of ignition. Keep water and moisture away from spilled material. With a clean shovel ,place into a clean, dry metal container and cover loosely. Dispose of waste according to local, State 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. Use in a closed system under argon or nitrogen.

Storage: Store in cool, dry place. Store in tightly closed container. Keep away from sources of ignition, heat, sparks and flames.

Section 8 – Exposure Controls, Personal Protection

Exposure Limits: PEL (OSHA) –none, TWA (ACGIH) – none, STEL/Ceiling (OSHA) – noneppm, STEL/Ceiling (ACGIH) – 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 below exposure limits.

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: solid; stench.

Melting Point: 44-49ºC

Boiling Point: Not available

Flash Point: Not available

Vapor Pressure: Not available

Vapor Density: Not available

pH: Not available

Specific Gravity: Not available

Percent Volatile: <1%

Water Solubility: Insoluble; reacts

Evaporation Rate: Not available

Flammable Limits: Not available

Molecular Weight: 158.99

Autoignition Temperature: Not applicable

Explosive Properties: Not explosive

Decomposition Temperature: Not available

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. Thermaldecomposition 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 extremely irritating and corrosive.

Skin: 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 lachrymator, stench.

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: Corrosive solid, acidic, organic,n.o.s.,(tert-Butyl-dichlorophosphine),8, UN3261, PG II

Labels: Corrosive

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): Immediate acute health hazard, reactive.

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 3261, Class E, (Corrosive), Ingredient Disclosure List: Not listed.

Section 16 – Additional Information

Creation Date: 03/01/2010

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.