

## Section 1 – Chemical Product and Company Identification

MSDS Name: tert-butylphosphine

Chemical Family: Organophosphine

Molecular Formula: C<sub>4</sub>H<sub>9</sub>PH<sub>2</sub>

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:

Pyrophoric liquid. Can catch fire if exposed to air. Air sensitive.

Handle under nitrogen or inert gas.

Corrosive - Causes severe skin burns, eye damage, and is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Harmful if inhaled, swallowed or absorbed through the skin. May contain small amounts of phosphine (a toxic gas).

NFPA Rating: Health: 3 Flammability: 4 Reactivity: 3 Special: None

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

## Section 3 – Composition, Information on Ingredients

<u>CAS #</u>	<u>Chemical Name</u>	<u>Wt.%</u>
2501-94-2	tert-butylphosphine	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:** Quickly wipe off as much as possible, then 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 not breathing give artificial respiration, and seek medical attention.

**Notes to Medical Doctor:** This product is corrosive to eyes, skin, respiratory and gastrointestinal tracts. Consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. 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:** Pyrophoric liquid. Air and oxygen sensitive.

**Fire Extinguishing Agents Recommended:** Water spray, carbon dioxide, dry chemical powder or alcohol foam.

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

**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:** Air reactivity of product.

**Flashpoint:** not available

**Sensitivity to Static Discharge:** yes

**Sensitivity to Impact:** None

## **Section 6 – Accidental Release Measures**

Remove all sources of ignition. Spilled material can catch fire spontaneously on contact with air, moisture, acids or oxidizing materials. Cover spill with dry extinguishant. Contain spill with absorbent. Expose to air until solvent has dissipated. 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: Keep away from water, air, and oxidizing materials. Do not get in eyes, on skin or clothing. Do not breathe vapors or mist. Use in a closed system under argon or nitrogen.

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

## **Section 8 – Exposure Controls, Personal Protection**

Exposure Limits: PEL (OSHA) – 0.3 ppm, TWA (ACGIH) – 0.3 ppm, STEL/Ceiling (OSHA) – 1 ppm, STEL/Ceiling (ACGIH) – 1 ppm.

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: Clear to milky white, garlic like odor.

Melting Point: Not available

Boiling Point: 54°C

Flash Point: Not available

Vapor Pressure: Not available

Vapor Density: Not available	pH: Not available
Specific Gravity: 0.7 g/cc	Percent Volatile: 100%
Water Solubility: Insoluble	Evaporation Rate: Not available
Flammable Limits: Not available	Molecular Weight: 90.1
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. Reacts violently with halogenated hydrocarbons.

Hazardous Polymerization: Does not polymerize

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide. 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 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. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, burning sensation and motor weakness in fingers and toes, incoordination, and headache.

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 to form phosphine oxides.

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

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

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

DOT Shipping: Pyrophoric liquids, organic, N.O.S. (t- butylphosphine), 4.2, Spontaneously Combustible, UN2845, PG I

Labels: Spontaneously Combustible

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, fire hazard, immediate 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 2845, Class B, Division 6 (Reactive Flammable Materials), Class E, (Corrosive), Ingredient Disclosure List: Not listed.

**Section 16 – Additional Information**

Creation Date: 02/05/2010

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.