

Section 1 – Chemical Product and Company Identification

MSDS Name: Tri-tert-butylphosphonium tetrafluoroborate

Chemical Family: Phosphine salt

Molecular Formula: $(C_4H_9)_3P.HBF_4$

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. White crystalline solid

Corrosive – to eyes (may cause blindness), skin, nose and throat. It is expected to be a lachrymator (substance which increases the flow of tears). Harmful if swallowed or inhaled.

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

Section 3 – Composition, Information on Ingredients

<u>CAS #</u>	<u>Chemical Name</u>	<u>Wt.%</u>
131274-22-1	Tri-tert-butylphosphonium tetrafluoroborate	>98

Section 4 – First Aid Measures

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

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. Dilute with 1 to 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

Inhalation: Remove from exposure, to fresh air immediately. If breathing discomfort occurs and persists seek medical attention. If breathing has stopped, give artificial respiration, and see a medical doctor immediately.

Notes to Medical Doctor: This product is corrosive to eyes, skin, and mucous membranes of the respiratory and gastrointestinal tracts. Careful gastric lavage with an endotracheal tube in place should be considered. Treatment is controlled with removal of exposure and symptomatic and supportive care.

Section 5 – Fire Fighting Measures

Flammable Limits: Upper: Not available Lower: Not available

General Hazard: None

Fire Extinguishing Agents Recommended: Use CO₂, dry chemical powder, water spray or foam.

Hazardous Combustion Products: May produce HF under fire conditions.

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

Autoignition temperature: Not applicable.

Properties contributing to flammability: None

Flashpoint: Not applicable

Sensitivity to Static Discharge: Not applicable

Sensitivity to Impact: Not applicable

Section 6 – Accidental Release Measures

Sweep up and place in suitable transport container. 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 Affects; and Section 8, Recommended Personal and Protective Equipment

Section 7 - Handling and Storage

Handling: Do not get in eyes, on skin or on clothing. Wash thoroughly after handling.
Avoid breathing dust.

Storage: Store in tightly closed container. Always store in a cool and well ventilated area.
May produce HF, a corrosive, toxic gas, if stored over 60° C

Section 8 – Exposure Controls, Personal Protection

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

Engineering Controls: use local exhaust ventilation 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 dusts.

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

Section 9 – Physical and Chemical Properties

Appearance and Odor: None odorous, white crystalline solid

Melting Point: 261° C (dec)

Boiling Point: Not applicable

Flash Point: Not applicable

Vapor Pressure: Not applicable

Vapor Density: Not available

pH: 1% solution @25° C

Specific Gravity: 1 g/cc (est)

Percent Volatile: Not applicable

Water Solubility: 4 wt% @ 20° C

Evaporation Rate: Not applicable

Flammable Limits: Not flammable

Molecular Weight: 290.13

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 under normal storage and temperature conditions. May produce HF (a corrosive, toxic gas) if stored over 60° C.

Incompatibility: bases, strong oxidizing agents. Contact with bases may cause a chemical reaction producing Tri-t-butylphosphine, which is pyrophoric.

Hazardous Polymerization: Does not polymerize

Hazardous Decomposition Products: Hydrogen fluoride gas, HBF₄, Tri-t-butylphosphine

Conditions to Avoid: None

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.

Chronic Effects from Overexposure: Continuous inhalation exposure may cause lung damage.

Sensitization: No.

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

Mutagenicity: No.

Reproductive Toxicity: No.

Section 12 – Ecological Information

Ecotoxicological Information: No data available.

Chemical Fate Information: insoluble with water and air stable

Section 13 – Disposal Considerations

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

Section 14 – Transport Information

DOT Shipping Name: Corrosive solid, acidic, organic, n.o.s. (Tri-tert-butylphosphonium tetrafluoroborate)

Classification: 8, Corrosive

Labels: Corrosive

UN Number: UN3261

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

Section 16 – Additional Information

Creation Date: 1/27/2010

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.