



# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Severe eye irritant. Irritating to skin and the respiratory system. Harmful compound, minimize exposure.	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Phosphoric Acid Tri-n-butyl Ester</b>		
Catalog Number	P0266	Supplier	TCI America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Tri-n-butyl Phosphate		
Chemical Formula	[CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> O] <sub>3</sub> P(O)		
CAS Number	126-73-8	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Phosphoric Acid Tri-n-butyl Ester	126-73-8	Not available.	TWA: 0.2 STEL: 0.4 (ppm) from OSHA/NIOSH  Consult local authorities for acceptable exposure limits.	Rat LD <sub>50</sub> (oral) >1400 mg/kg Rat LC <sub>50</sub> (inhalation) 28000 mg/m <sup>3</sup> Rat LDLo (intravenous) 100 mg/kg

## Section III. Hazards Identification

Acute Health Effects	Severely irritating to eyes. Irritating to skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Large doses may produce muscle weakness, pulmonary edema, and cholinergic symptoms. This compound affects the central nervous system and blood. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Mutations: Bacteria (S typhimurium) 500 µg/plate (+/-S9) <b>TERATOGENIC EFFECTS</b> : Not available. Toxicity to the reproductive system: Not available. Target organs include the central nervous system and blood. Minimize exposure to this material.

## Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.
Skin Contact	If the chemical gets spilled on a clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.
Inhalation	If the victim is not breathing, perform artificial respiration. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention. Treat symptomatically and supportively.
Ingestion	Remove dentures if any. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. NEVER give an unconscious person anything to ingest. Seek medical attention. Treat symptomatically and supportively.

## Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	77°C
Flash Points	open cup: 146°C (294.8°F)	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ), phosphates.		
Fire Hazards	No specific information is available regarding the flammability of this compound in the presence of various materials.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No additional information is available regarding the risks of explosion.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO <sub>2</sub> , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.		

Continued on Next Page

Emergency phone number (800) 424-9300

**Section VI. Accidental Release Measures****Spill Cleanup Instructions**

Combustible material.  
Keep away from heat and sources of ignition. Mechanical exhaust required. Stop leak if without risk. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Consult federal, state, and/or local authorities for assistance on disposal.

**Section VII. Handling and Storage****Handling and Storage Information**

IRRITANT. Keep away from heat and sources of ignition. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases), moisture.

**Section VIII. Exposure Controls/Personal Protection****Engineering Controls**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.

**Personal Protection**

Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**

TWA: 0.2 STEL: 0.4 (ppm) from OSHA/NIOSH

Consult local authorities for acceptable exposure limits.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Colorless to pale yellow liquid.	Solubility	Soluble in cold water, hot water, ethanol, diethyl ether, benzene.
Specific Gravity	0.98 (water=1)		
Molecular Weight	266.32	Partition Coefficient	Not available.
Boiling Point	180-183°C @ 22mm Hg	Vapor Pressure	0.8 mm of Hg (@ 114°C)
Melting Point	-79°C (-110.2°F)	Vapor Density	9.2 (Air = 1)
Refractive Index	1.4215 @ 25°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Odorless.
Viscosity	3.39 cP @ 25°C	Taste	Not available.

**Section X. Stability and Reactivity Data****Stability**

This material is stable if stored under proper conditions. (See Section VII for instructions)

**Conditions of Instability**

Avoid excessive heat and light.

**Incompatibilities**

Reactive with strong oxidizing agents, alkalis (bases), moisture.

**Section XI. Toxicological Information****RTECS Number**

TC7700000

**Routes of Exposure**

Eye contact. Ingestion. Inhalation. Skin contact.

**Toxicity Data**

Rat LD<sub>50</sub> (oral) >1400 mg/kg  
Rat LC<sub>50</sub> (inhalation) 28000 mg/m<sup>3</sup>/1H  
Rat LDLo (intravenous) 100 mg/kg

**Chronic Toxic Effects**

**CARCINOGENIC EFFECTS** : Not available.  
**MUTAGENIC EFFECTS** :  
Mutations: Bacteria (S typhimurium) 500 µg/plate (+/-S9)  
**TERATOGENIC EFFECTS** : Not available.  
Toxicity to the reproductive system: Not available.  
Target organs include the central nervous system and blood. Minimize exposure to this material.

**Acute Toxic Effects**

Severely irritating to eyes. Irritating to skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Large doses may produce muscle weakness, pulmonary edema, and cholinergic symptoms. This compound affects the central nervous system and blood. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.


**Section XII. Ecological Information**

Ecotoxicity	Not available.
Environmental Fate	Not available.

**Section XIII. Disposal Considerations**

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of this substance.
----------------	--

**Section XIV. Transport Information**

DOT Classification	Not a DOT controlled material (United States).
PIN Number	NONE
Proper Shipping Name	NONE
Packing Group (PG)	NONE
DOT Pictograms	

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA)	This product is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory.
WHMIS Classification (Canada)	WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).
EINECS Number (EEC)	204-800-2
EEC Risk Statements	R36/38- Irritating to eyes and skin.
Japanese Regulatory Data	Not available.

**Section XVI. Other Information**

**Version 1.0**  
**Validated on 1/9/1997.**  
**Printed 3/15/2011.**

**Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.