



DI- *TERT*-BUTYLPHOSPHINE (DTBP)

CAS No. 819-19-2

QS-PDS-030 Revision: 00

Product Names	Di- <i>tert</i> -butylphosphine, DTBP
Formula	C ₈ H ₁₉ P
Appearance	Colorless to pale yellow
Application	Di- <i>tert</i> -butylphosphine (DTBP) is used primarily in the preparation of mono- and bidentate phosphine ligands in metal complexes for catalytic chiral asymmetric hydrogenations and other asymmetric reactions as well as transition metal coupling reactions. This reagent is also used in the preparation of other phosphines in catalytic polymerization reactions. For reviews see: 1) <i>Palladium Reagents and Catalysts</i> , John Wiley & Sons: Chichester, 1995 p.345-356. 2) <i>Advanced Synthesis & Catalysis</i> , Wiley-VCH Verlag GmbH 2001 p.118-136. 3) <i>Tetrahedron: Asymmetry</i> 2004 , 15 (17), 2621-2631 and references cited therein.

Product Specification

	<u>Guaranteed*</u>
Assay, wt%	97 min
Purity by ³¹ P NMR, %	98 min

*This product can be made to agreed upon customer specifications.

Solvent	Neat	
Physical Properties	Molecular weight	146.22
	Density @20°C	0.79 g/mL
	Boiling point	35 – 36 @ 10 torr
	Pyrophoricity	Pyrophoric
Solubility	Infinitely soluble with most compatible solvents at room temperature.	
Thermal Stability	Stable at room temperature. Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine.	



DI-TERT-BUTYLPHOSPHINE (DTBP)

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Toxicity/Safety Data Pyrophoric liquid. Can catch fire if exposed to air. Air sensitive. Handle under nitrogen or inert gas.

Corrosive to eyes (may cause blindness), skin, nose, throat and stomach. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin. Harmful if swallowed, inhaled, or absorbed through skin.

COMPLETE INFORMATION ON TOXICITY AND SAFETY IS CONTAINED IN THE OPTIMA MATERIAL SAFETY DATA SHEET (MSDS) AVAILABLE FOR THIS PRODUCT.

Handling/Storage/Disposal Keep away from water, air and oxidizing materials. Wear full face protection and gloves. Use in a closed system under argon or nitrogen. Keep away from heat, sparks, and flame. Protect storage container from leaks and physical damage.

Shipping Containers Sample Glass Bottles 125 mL, 500 mL, and 1 L

Shipping Limitations Shipments of DTBP are described as "Pyrophoric liquid, organic, N. O. S. (DI-T-BUTYLPHOSPHINE) 4.2, UN2845, PG I." Shipments require "Flammable" and "Corrosive" labels.

Post, Parcel, Air	Forbidden
Sea	Class 4.2 (IMDG)
Road, Rail	Class 4.2 (DOT, RID/ADR)

For shipments within Europe, labeling for supply requirements are:

F	Flammable
C	Corrosive
R&S Phrase	See Material Safety Data Sheet

Responsible Care® initiative dictates that all shipments must be transported in a DOT-approved vehicle in a responsible manner (i.e., no flat bed trucks).

Additional Resources Refer to the Organometallics and Reactive Specialty Organics Safe Handling Guide.