



## TERT-BUTYLPHOSPHINE (TBP)

CAS No. 2501-94-2

QS-PDS-029 Revision: 00

**Product Name(s)** *t*-Butylphosphine, *tert*-Butylphosphine, TBP

**Formula** C<sub>4</sub>H<sub>11</sub>P

**Appearance** Clear liquid

**Application** *tert*-Butylphosphine (TBP) 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) *Palladium Reagents and Catalysts*, John Wiley & Sons: Chichester, **1995** p.345-356. 2) *Advanced Synthesis & Catalysis*, Wiley-VCH Verlag GmbH **2001** p.118-136. 3) *Tetrahedron: Asymmetry* **2004**, 15 (17), 2621-2631 and references cited therein.

### Product Specification

% Purity by <sup>31</sup> P NMR	<u>Guaranteed*</u> 95 min
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\* *This product can be made to agreed upon customer specifications.*

**Solvent** Neat

<b>Physical Properties</b>	Molecular weight	90.10
	Density @20°C	0.7
	Boiling point	54°C
	Percent volatile	100%
	Pyrophoricity	Pyrophoric

**Solubility** Infinitely soluble with most compatible solvents at room temperature

**Thermal Stability** Stable at room temperature



**TERT-BUTYLPHOSPHINE (TBP)**

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**Toxicity/Safety Data** Pyrophoric and corrosive liquid. Can catch fire if exposed to air. Corrosive to eyes (may cause blindness), skin, nose, throat and stomach. May be harmful if swallowed, inhaled, or absorbed through skin. Can catch fire if exposed to air. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, motor weakness in fingers and toes, incoordination, and headache. If ingested, may produce a lung aspiration hazard.

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

**Handling/Storage/Disposal** Use in a closed system under argon or nitrogen. Do not get in eyes, on skin or clothing. Do not breathe vapors or mist. Store in a cool place. Keep container closed. Keep away from sources of ignition, water, air, acids and oxidizing agents. Store in cool, dry place.

**Shipping Containers** Glass Bottles 125 mL and 500 mL  
Cylinders #20

**Shipping Limitations** Shipments of *tert*-Butylphosphine are described as "Pyrophoric liquid, organic, N.O.S. (*TERTIARY BUTYLPHOSPHINE*), 4.2, UN2845, PGI." Shipments require a "Spontaneously Combustible" label.

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.