



TRIMETHYLPHOSPHINE 30% IN THF (TMP)

CAS No. 594-09-2

QS-PDS-023 Revision: 01

Product Names Trimethylphosphine, TMP

Formula C₃H₉P

Appearance Colorless to light yellow solution

Application Trimethylphosphine is used in selective catalytic palladium coupling and ring opening reactions, as well as palladium-catalyzed hydrogenolysis reactions such as Suzuki, Stille, and Sonogashira. 1) *J.Am.Chem.Soc.* **1996**, 118, 6329-6330; 2) *Tett. Lett.* **1999**, 40 (51), 8955-8960; 3) *Perkin I* **2000**, 22, 3808-3814 and references therein.

Product Specification

Trimethylphosphine	<u>Guaranteed*</u> 2.7 – 3.3 Molar
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** This product can be made to agreed upon customer specifications.*

Solvent Tetrahydrofuran

Physical Properties

Molecular weight	76.08
Density @20°C	0.83 g/cc
Boiling point of pure solvent	66 °C (THF)
Volatiles, % by weight	100%
Pyrophoricity	Non-pyrophoric

Solubility Trimethylphosphine is very soluble in aliphatic, aromatic and ethereal solvents.

Thermal Stability

Trimethylphosphine is stable at ambient temperature. However, it is very susceptible to oxidation and must be maintained under an inert atmosphere.



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Toxicity/Safety Data Flammable liquid. Air and oxygen sensitive. Expected to be extremely irritating to eyes, skin and respiratory system. Strong stench. 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, air, acids and oxidizing agents.

Shipping Containers Cylinders #5-420 L
Glass Bottles 125 mL, 500 mL and 1 L

Shipping Limitations Shipments of trimethylphosphine are described as "Flammable Liquid, N.O.S. (TRIMETHYLPHOSPHINE, TETRAHYDROFURAN, SOLUTION) 3, UN1993, PG II." Shipments require "Flammable Liquid" labels.

Post, Parcel	Not acceptable
Sea	Class 3 (IMDG)
Road, Rail	Class 3 (DOT, RID/ADR)
Air	Class 3 (IATA)
	2.5 L maximum per inner glass container.
	60 L maximum per single/outer container.
	Cargo aircraft only.

For shipments within Europe, labeling for supply requirements are:

F	Highly Flammable
Xi	Irritant
R&S Phrases	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.