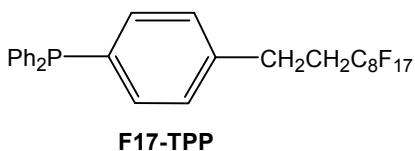


F017039

Diphenyl-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]phosphine

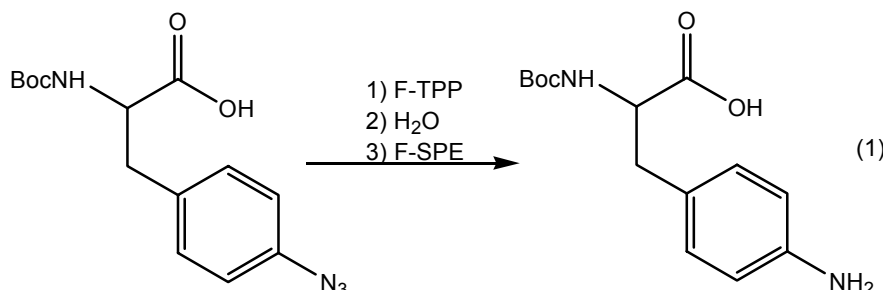


| | |
|-------------------|--|
| Chemical Formula: | C ₂₈ H ₁₈ F ₁₇ P |
| Formula Weight: | 708.40 |
| Description: | F17-TPP |
| CAS Number: | 462996-04-9 |
| Melting Point: | 76-77°C |
| Appearance: | White, free-flowing solid |
| Soluble in: | Dichloromethane, methanol, THF, ethyl acetate, and most other typical organic solvents |
| Stability: | Stable in air |

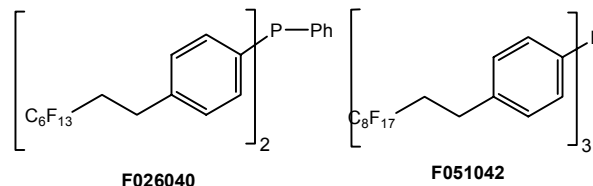
DESCRIPTION AND USES: ¹

- Fluorous Triphenylphosphine (F17-TPP) is a lightly fluorinated equivalent of triphenylphosphine.
- Used in the halogenation of alcohols and acids, Staudinger (eq 1), ¹ Wittig and Mitsunobu reactions.²
- Excess F17-TPP and its oxide F17-TPPO can be easily removed after the reaction by performing a quick fluororous solid phase extraction over FluoroFlash[®] silica gel.^{3,4}

TYPICAL STAUDINGER PROCEDURE: ¹ A mixture of azide (82mg, 0.50mmol) and F17-TPP (390mg, 0.55mmol) in THF (3mL) is stirred at 22°C for 50 minutes. Water (0.50mL) is added and the mixture is stirred at 60°C for 3 h. The crude mixture is applied to a silica transfer cartridge atop a 5g FluoroFlash[®] solid phase extraction (F-SPE) cartridge⁴ and air is drawn through for 2 minutes. The cartridge is washed with MeOH:H₂O (80:20) and the extract concentrated to yield 64mg (93%) of amine which was 100% pure by LC/ELSD.



RELATED REAGENTS: Other fluororous phosphine analogs such as F026040 [PhP(C₆F₁₃CH₂CH₂-C₆H₄)₂, F(13x2)-TPP] and F051042 [(C₈F₁₇CH₂CH₂-C₆H₄)₃P, F(17x3)-TPP] have increased number of fluorine atoms. F051042 is suitable for reactions and separations under biphasic conditions. The phosphine oxide residue may be removed by liquid-liquid extraction as an alternative to F-SPE.⁴


REFERENCES:

- Lindsley, C.W., Zhao, Z., Newton, R.C., Leister, W.H., Strauss, K.A. *Tetrahedron Letters*, **2002**, 43, 4467. In the published procedure F13-TPP was used
- Dandapani, S., Curran, D. P. *Tetrahedron*, **2002**, 58, 3855; also FTI Application Note "F-Mitsunobu Chemistry"
- Curran, D. P. *Synlett* **2001**, 1488.
- Please refer to FTI Application Note "Fluorous Solid Phase Extraction"