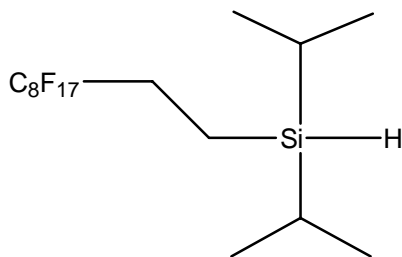


Diisopropyl-(1H,1H,2H,2H-perfluorodecyl)silane

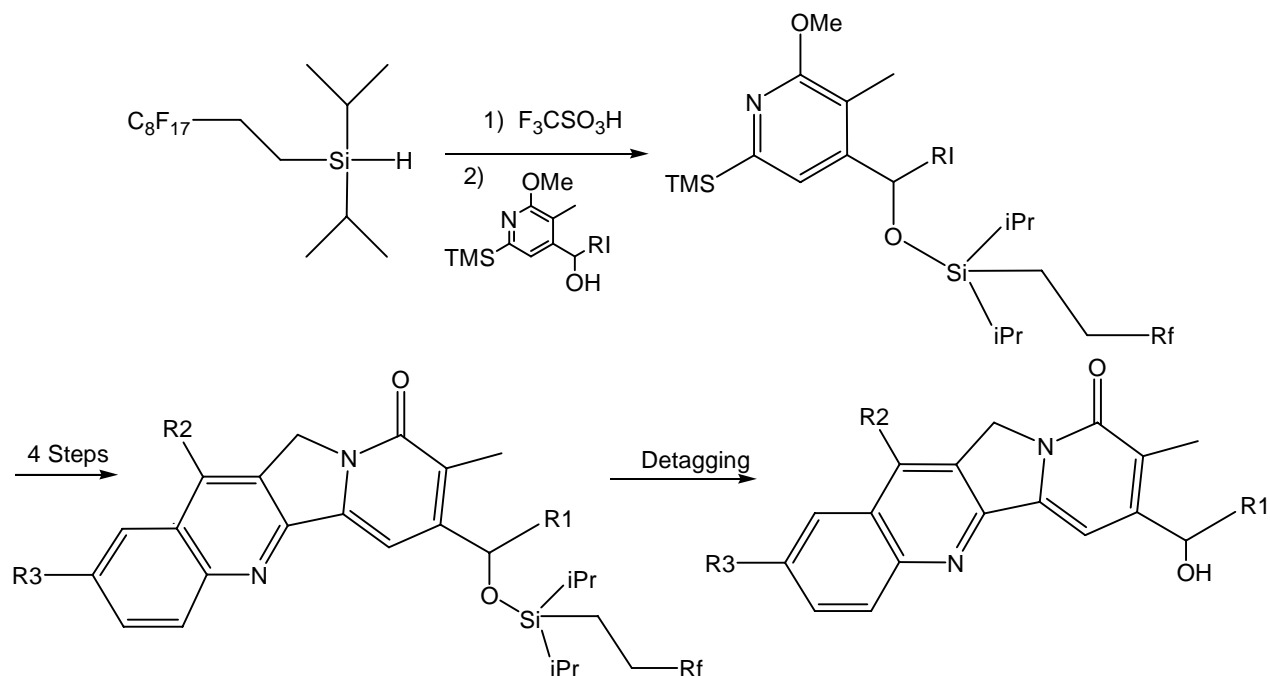


Chemical Formula:	C ₆ H ₁₉ F ₁₇ Si
Formula Weight:	562.38
Description:	Protecting Group and Tag
CAS Number:	356056-15-0
Appearance:	Clear liquid
Properties:	Density: 1.37
Soluble in:	Dichloromethane, chloroform, THF, ether, toluene, and most other typical organic solvents
Stability:	Stable in air

DESCRIPTION AND USES:

- F-Silanes are fluororous equivalents to a TIPS group and exhibit properties similar to most silicon protecting groups.
- Used as fluororous tags in both parallel and fluororous mixture synthesis (FMS).^{1,2} Tagging of an alcohol is accomplished by *in situ* activation of the F-Silane to either the bromide or the triflate followed by addition of the alcohol. The tagged molecule can be manipulated over any number of chemical steps before detagging with fluoride.
- The tagged intermediates are quickly and easily separated after each step from organic reagents, reactants or products by fluororous solid phase extraction (F-SPE) over FluoroFlash[®] silica gel.^{3,4}

TYPICAL TAGGING PROCEDURE:² CF₃SO₃H (2.05 mL, 16.4 mmol) was added to C₈F₁₇-CH₂CH₂(iPr)₂SiH (12.01 g, 21.4 mmol) at 0 °C. The mixture was stirred at room temperature for 15 h. A solution of the alcohol (16.4 mmol) and 2,6-lutidine (3.8 mL, 32.8 mmol) in dry CH₂Cl₂ (40 mL) was added. After 2 h, the mixture was quenched with aqueous NH₄Cl and extracted with CH₂Cl₂ and ether. Isolation by normal silica gel chromatography or FluoroFlash[®] SPE^{3,4} (if the fluororous silane were the limiting reagent) provides the tagged product in typical yields of 80-90%



RELATED REAGENTS:

F017004, the C₈F₁₇ Silane, has appropriate fluorine content for tagging of diverse organic molecules and is recommended for use with fluorous solid phase extraction. Other F-Silanes are useful in fluorous chromatography or fluorous mixture synthesis.

Additional F-Silane Homologs Available	
Rf	Catalog No.
C ₃ F ₇	F007004
C ₄ F ₉	F009004
C ₆ F ₁₃	F013004
C ₁₀ F ₂₁	F021004

REFERENCES:

- 1) Luo, Z. Y., Zhang, Q., Oderaotoshi, Y., Curran, D. P. *Science*, **2001**, 291, 1766.
- 2) Zhang, W., Luo, Z., Chen, C.H., Curran, D.P. *J. Am. Chem. Soc.* **2002**, 124, 10443.
- 3) Curran, D. P. *Synlett* **2001**, 1488.
- 4) Please refer to FTI Application Note "Fluorous Solid Phase Extraction"
- 5) Emma R. Palmacci, Michael C. Hewitt, and Peter H. Seeberger "Cap-Tag—Novel Methods for the Rapid Purification of Oligosaccharides Prepared by Automated Solid-Phase Synthesis" *Angew. Chem. Int. Ed.* **2001**, 40, 4433-4437.
- 6) Leonardo Manzoni "Rapid synthesis of oligosaccharides using an anomeric fluorous silyl protecting group" *Chem. Commun.*, **2003**, 2930–2931.