

1864
ED

C₄H₁₃PSi

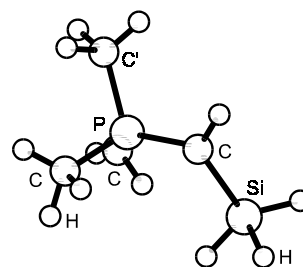
Trimethyl(silylmethylene)phosphorane

C₁
H₃Si-CH=P(CH₃)₃

r_a	\AA^a	θ_a	deg^a
P-C	1.807(8)	C=P-C	115.0(13)
P=C	1.653(11)	Si-C=P	123.4(8)
Si-C	1.852(20) ^{b)}	P-C-H	110.7(7)
C-H	1.107(7)	C-Si-H	110.5 ^{c)}
Si-H	1.494(12)	$\tau_1^d)$	25.0(14)
		$\tau_2^e)$	27.7(21)

The single methylene hydrogen is assumed to lie in the P=C-Si plane, with the C-H bond bisecting the angle P=C-Si. The silyl group is assumed to have the conformation in which one Si-H bond is *anti* to the P=C bond.

The measurements were made at room temperature.



^{a)} Estimated standard errors including a systematic error.

^{b)} Determined by *R*-factor optimization.

^{c)} Fixed.

^{d)} C'-P=C-Si torsion angle, defined as zero when the Si-C bond is *trans* to the P-C' bond.

^{e)} H-C-P=C torsion angle, defined as zero when one C-H bond is *anti* to the P=C bond.

Ebsworth, E.A.V., Rankin, D.W.H., Zimmer-Gasser, B., Schmidbaur, H.: Chem. Ber. **113** (1980) 1637.