

1862
ED

C₄H₁₃NSi

r_a	\AA^a
C–H	1.115(5)
Si–H	1.485 ^{b)}
C–N	1.460(4)
Si–N	1.719(5)
Si–C	1.869(3)

Dimethyl(dimethylamino)silane

N-(Dimethylsilyl)dimethylamine

θ_a	deg ^{a)}
Si–N–C	119.3(8)
C–N–C	113.7(15)
N–C–H	111.5 ^{b)}
N–Si–C	109.9(18)
N–Si–H	109.5 ^{b)}
Si–C–H	107.6(20)
C–Si–C ^{c)}	107.5(38)
$\varphi^d)$	53.7(20)
$\alpha^e)$	352.4(18)
$\beta(\text{dip})^c)^f)$	26.5(24)
$\tau(\text{H–C–N–C})^g)$	60.0 ^{b)}
$\tau(\text{H–C–Si–C})^g)$	–37.2(70)
$\tau(\text{H–Si–N–b})^g)^h)$	97.3(46)
$\tau_1(\text{C(1)–N–Si–C(3)})^c)^g)$	–68.0(59)
$\tau_2(\text{C(1)–N–Si–C(4)})^c)^g)$	50.1(47)
$\tau_3(\text{C(2)–N–Si–C(3)})^c)^g)$	144.5(56)
$\tau_4(\text{C(2)–N–Si–C(4)})^c)^g)$	–97.4(46)

C₁
(H₃C)₂HSi–N(CH₃)₂

The preferred conformation has one Si–CH₃ bond *gauche* to the lone pair of electrons on the N atom. The Si–NC₂ skeleton and the Si(CH₃)₂ group were assumed to have local C_s and C₂ symmetry, respectively, and the CH₃ groups were assumed to have local C_{3v} symmetry with no tilt.

The nozzle temperature was 295 K.

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

^{b)} Assumed.

^{c)} Dependent parameters.

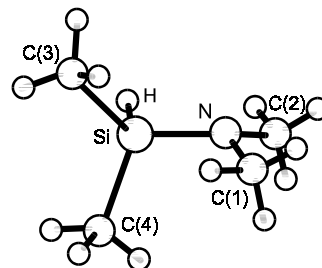
^{d)} Angle between the C(3)–Si bond and the NSiH plane.

^{e)} The sum of the angles around the N atom. The deviation from 360° could be ascribed to the neglect of the shrinkage effect; in other words, a planar equilibrium structure is possible.

^{f)} Dip angle between the bisector of the C–N–C angle and the extension of the Si–N bond. See footnote ^{e)}.

^{g)} Zero position for the torsion angles is *syn*, they are positive for counterclockwise rotation.

^{h)} b is the bisector of the C–N–C angle.



Gundersen, G., Mayo, R.A., Rankin, D.W.H.: Acta Chem. Scand. Ser. A **38** (1984) 579.