

1872  
ED

$C_4H_{15}NSi_2$

Bis(dimethylsilyl)amine

$C_1$

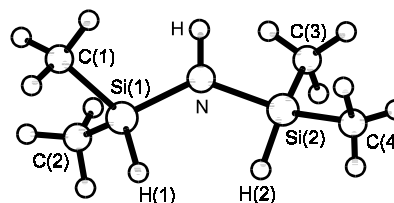
$(H_3C)_2HSi-NH-SiH(CH_3)_2$

$r_a$	$\text{\AA}^a$	$\theta_a$	deg <sup>a)</sup>
N-H	1.020 <sup>b)</sup>	Si-N-Si	130.4(15)
C-H	1.112(4)	N-Si-H	104.3(20)
Si-H	1.490 <sup>b)</sup>	C-Si-C	112.8(11)
Si-N	1.727(3)	Si-C-H	111.1(6)
Si-C	1.867(3)	N-C-Si <sup>c)</sup>	110.2(3)
		$\phi$ <sup>d)</sup>	51.4(8)
		$\tau(H-C(1)-Si-C(2))$ <sup>e)</sup>	-19(4)
		$\tau_1(H(1)-Si-N-Si)$ <sup>e)</sup>	44(5)
		$\tau_2(H(2)-Si-N-Si)$ <sup>e)</sup>	16(2)

In the favored conformation, the  $SiH(CH_3)_2$  groups are twisted by  $\tau_1$  and  $\tau_2$  (see table), so that the two  $SiH(CH_3)_2$  groups are staggered when viewed along the  $Si \dots Si$  axis. The preference of this form over two other conformations ( $\tau_1 = 5^\circ$  and  $\tau_2 = 194^\circ$ , and  $\tau_1 = 34^\circ$  and  $\tau_2 = 110^\circ$ ) was, however, marginal.

The  $HNSi_2$  skeleton was assumed to have local  $C_{2v}$  symmetry. Local  $C_{3v}$  and  $C_2$  symmetries were assumed for the  $CH_3$  and the  $Si(CH_3)_2$  groups, respectively. The geometries of the two  $(CH_3)_2HSiN$  moieties were assumed to be equal except for the torsional orientations about the  $Si-N$  bonds ( $\tau_1$  and  $\tau_2$ ).

The nozzle temperature was 295 K.



<sup>a)</sup> Estimated standard errors including a systematic error.

<sup>b)</sup> Assumed.

<sup>c)</sup> Dependent parameter.

<sup>d)</sup> Angle between the bisector of the C-Si-C angle and the extension of the Si-N bond.

<sup>e)</sup> Zero position for the *syn* conformations, positive values for counterclockwise rotation.

Gundersen, G., Rankin, D.W.H.: Acta Chem. Scand. Ser. A **38** (1984) 647.