SiC	*hP*8	(186) $P6_3mc$ – b^2a^2

SiC 4H [2], moissanite-4H, carborundum III, Strukturbericht notation B5; ZnS 4H [3]
Structural features: Close-packed Si layers in hc stacking; C in tetrahedral voids (same stacking position as the preceding Si layer). CSi_4 tetrahedra share vertices to form a 3D-framework. See Fig. IV.19.

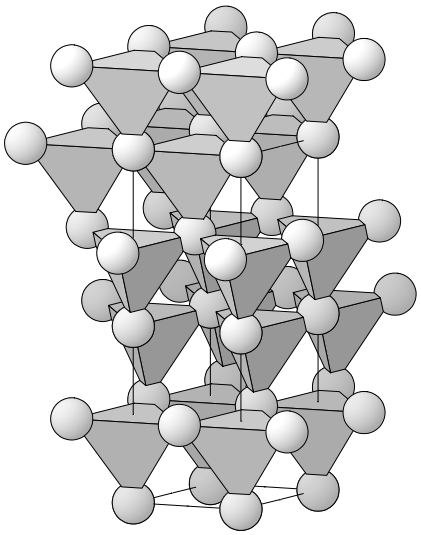

Fig. IV.19. **SiC 4H**

Arrangement of CSi_4 tetrahedra.

Lundqvist D. (1948) [1]
CSi
a = 0.308, c = 1.0081 nm, c/a = 3.273, V = 0.0828 nm^3, Z = 4

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
Si1	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.25		tetrahedron C_4
C2	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.4375		tetrahedron Si_4
Si3	2*a*	3*m*.	0	0	0.0		tetrahedron C_4
C4	2*a*	3*m*.	0	0	0.1875		tetrahedron Si_4

Transformation from published data: origin shift 0 0 0.8125
Experimental: powder, film, X-rays

Remarks: α-moissinite, which includes all naturally occurring trigonal and hexagonal polytypes of SiC, is stable at T > 2223 K; may be stabilized by small amounts of aluminum. Zhdanov notation (22). We derived idealized atom coordinates from the stacking sequence.

References: [1] Lundqvist D. (1948), Acta Chem. Scand. 2, 177-191. [2] (1931), Strukturbericht 1, 80. [3] Frondel C., Palache C. (1948), Science (Washington D.C.) 107, 602.