$KAl[SiO_4]$	$hP14$	(186) $P6_3mc$ – cb^3a

$KAlSiO_4$ ht1 [1], kalsilite-1H high
Structural features: AlO_4 and SiO_4 tetrahedra share vertices to form a tridymite-type framework; K in channels delimited by 6-rings parallel to [001]. See Fig. IV.21.

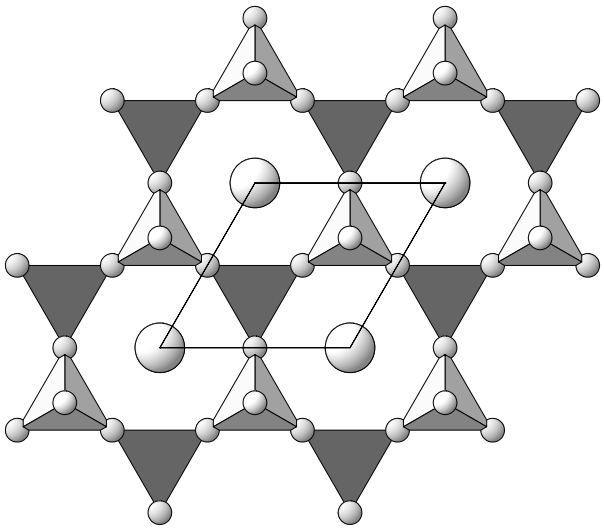

Fig. IV.21. **$KAlSiO_4$ ht1**

Arrangement of AlO_4 (light) and SiO_4 (dark) tetrahedra (O atoms small) and K atoms (large) viewed along [001].

Andou Y., Kawahara A. (1982) [1]
$AlKO_4Si$
$a = 0.53$, $c = 0.865$ nm, $c/a = 1.632$, $V = 0.2104$ nm^3, $Z = 2$

site	Wyck.	sym.	x	y	z	occ.	atomic environment
O1	6*c*	.*m*.	0.5	0.5	0.25		colinear AlSi
O2	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.0		colinear AlSi
Si3	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.1875		tetrahedron O_4
Al4	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.8125		tetrahedron O_4
K5	2*a*	3*m*.	0	0	0.0		coplanar triangle O_3

Transformation from published data: origin shift 0 0 0.25
Experimental: powder, diffractometer and Weissenberg photographs, X-rays, R = 0.150, T = 1173 K

Remarks: Phase stable at T > 1138 K. Space group (194) $P6_3/mmc$ (disordered arrangement of Si and Al) could not be rejected.

References: [1] Andou Y., Kawahara A. (1982), Mineral. J. 11, 72-77.