| $LiAl[SiO_4]$ | *hP*21 | (180) $P6_222$ – kdca |
|---|---|---|

**$LiAlSiO_4$ β ht** [2], eucryptite β ht
Structural features: $AlO_4$ and $SiO_4$ tetrahedra share vertices to form a 3D-framework with twisted chains; Li in narrow channels of hexagonal cross-section parallel to [001]. Filled-up derivative of $SiO_2$ β-quartz. See Fig. IV.43.

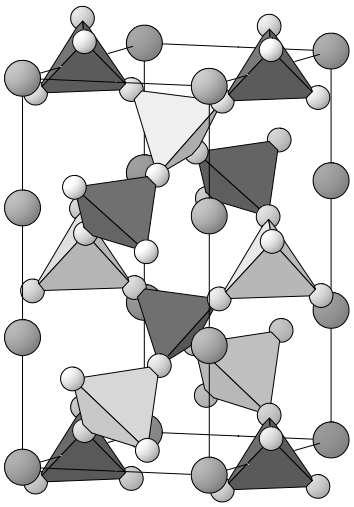

Fig. IV.43. **$LiAlSiO_4$ β ht**

Arrangement of $AlO_4$ (light) and $SiO_4$ (dark) tetrahedra (O atoms small) and Li atoms (large).

Pillars W.W., Peacor D.R. (1973) [1]
$AlLiO_4Si$
$a$ = 0.5275, $c$ = 1.1125 nm, $c/a$ = 2.109, $V$ = 0.2681 $nm^3$, $Z$ = 3

| site | Wyck. | sym. | *x* | *y* | *z* | occ. | atomic environment |
|---|---|---|---|---|---|---|---|
| O1 | 12*k* | 1 | 0.2105 | 0.4046 | 0.2544 | | non-coplanar triangle SiAlLi |
| Al2 | 3*d* | 222 | $^1/_2$ | 0 | $^1/_2$ | | tetrahedron $O_4$ |
| Si3 | 3*c* | 222 | $^1/_2$ | 0 | 0 | | tetrahedron $O_4$ |
| Li4 | 3*a* | 222 | 0 | 0 | 0 | | tetrahedron $O_4$ |

Transformation from published data ($P6_422$): new axes -a,-b,-c
Experimental: single crystal, diffractometer, X-rays, R = 0.092, T = 757 K

Remarks: Phase stable at T > ~760 K (733 K according to [1]). Cell parameters taken from figure.

References: [1] Pillars W.W., Peacor D.R. (1973), Am. Mineral. 58, 681-690. [2] Winkler H.G.F. (1948), Acta Crystallogr. 1, 27-34.