LiAl[SiO_4]	*hP*84	(180) $P6_222 - k^4jihgfda$

$LiAlSiO_4$ β rt [2], eucryptite β rt
Structural features: AlO_4 and SiO_4 tetrahedra share vertices to form a quartz-like framework with twisted chains; Li in narrow channels of hexagonal cross-section parallel to [001].

Khosrovani N., Sleight A.W. (1999) [1]
$AlLiO_4Si$
a = 1.0498, c = 1.118 nm, c/a = 1.065, V = 1.0671 nm^3, Z = 12

site	Wyck.	sym.	x	y	z	occ.	atomic environment
O1	12*k*	1	0.1	0.401	0.09233		non-colinear SiAl
O2	12*k*	1	0.111	0.2	0.257		single atom Al
O3	12*k*	1	0.401	0.105	0.09833		single atom Si
O4	12*k*	1	0.608	0.2	0.25		non-colinear AlSi
Si5	6*j*	..2	0.249	0.498	$^1/_2$		tetrahedron O_4
Al6	6*i*	..2	0.252	0.504	0		tetrahedron O_4
Si7	6*h*	.2.	0.245	0	$^1/_2$		tetrahedron O_4
Al8	6*g*	.2.	0.249	0	0		tetrahedron O_4
Li9	6*f*	2..	$^1/_2$	0	0.172		tetrahedron O_4
Li10	3*d*	222	$^1/_2$	0	$^1/_2$		tetrahedron O_4
Li11	3*a*	222	0	0	0		tetrahedron O_4

Transformation from published data: origin shift 0 0 $^1/_2$
Experimental: powder, diffractometer, neutrons, T = 298 K

Remarks: Phase stable at T < 760 K. Cell parameters taken from figure. When relevant, we changed the last digit of the atom coordinates to respect the symmetry conditions for special positions.

References: [1] Khosrovani N., Sleight A.W. (1999), Int. J. Inorg. Mater. 1, 3-10. [2] Tscherry V., Schulz H. (1970), Naturwissenschaften 57, 194.