$Li_{0.33}(Al_{0.33}Si_{0.67})O_2$	*hP*12	(180) $P6_222$ – jca

$LiAlSi_2O_6$ form III [2], eucryptite β rt
Structural features: $(Si,Al)O_4$ 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.

Müller G. et al. (1990) [1]
$Al_{0.33}Li_{0.33}O_2Si_{0.67}$
$a = 0.5226$, $c = 0.5465$ nm, $c/a = 1.046$, $V = 0.1293$ nm^3, $Z = 3$

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
O1	6*j*	..2	0.203	0.406	$^1/_2$		tetrahedron Si_2Li_2
M2	3*c*	222	$^1/_2$	0	0		tetrahedron O_4
Li3	3*a*	222	0	0	0	0.333	octahedron Li_2O_4

M2 = 0.667Si + 0.333Al
Experimental: single crystal, diffractometer, X-rays, R = 0.020

Remarks: Short interatomic distances for partly occupied site(s). Average structure. The superstructure was refined in space group (180) $P6_222$ (new axes 2a,2b,2c) in [3].

References: [1] Müller G., Paulus H., Stiefel J. (1990), Neues Jahrb. Mineral., Monatsh. 1990, 493-503. [2] Li C.T. (1968), Z. Kristallogr. 127, 327-348. [3] Tscherry V., Schulz H., Laves F. (1972), Z. Kristallogr. 135, 175-198.