$(Mg_{0.54}Al_{0.33}Fe_{0.13})_3(Al_{0.5}Si_{0.5})_2O_3(O_{0.67}[OH]_{0.33})_3[OH]_3$ *hP*28	(185) $P6_3cm - c^3b^2a$

$(Mg,Al,Fe)_3AlSiO_5(OH)_4$ 2H [1], amesite-2H_1; $Fe_3(Fe,Si)_2O_4(OH)_5$ 2H [2], cronstedtite-2H_1; $Mg_3Si_2O_5(OH)_4$ 2H [3], lizardite-2H_1
Structural features: Layers of edge-linked $(Mg,Al,Fe)(O_3[OH]_3)$ octahedra share vertices with layers of vertex-linked $(Al,Si)O_4$ tetrahedra containing 6-rings to form infinite kaolinite-type slabs.

Brindley G.W. et al. (1951) [1]
$Al_2Fe_{0.40}H_4Mg_{1.60}O_9Si$
$a = 0.53$, $c = 1.401$ nm, $c/a = 2.643$, $V = 0.3408$ nm^3, $Z = 2$

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
M1	6*c*	..*m*	0.333	0	0.075		octahedron $O_3(OH)_3$
O2	6*c*	..*m*	0.5	0	0.342		non-colinear Al_2
(OH)3	6*c*	..*m*	0.667	0	0.15		non-coplanar triangle Mg_3
M4	4*b*	3..	$^1/_3$	$^2/_3$	0.0		tetrahedron $AlMg_3$
M5	4*b*	3..	$^1/_3$	$^2/_3$	0.381		tetrahedron O_4
M6	2*a*	3.*m*	0	0	0.0		non-coplanar triangle Mg_3

M1 = 0.533Mg + 0.333Al + 0.134Fe; M4 = 0.667O + 0.333OH; M5 = 0.50Al + 0.50Si; M6 = 0.667O + 0.333OH
Transformation from published data: origin shift 0 0 0.158
Experimental: powder, film, X-rays

Remarks: Natural specimen from Chester, Massachusetts; heated to 823 K, chlorite impurities dissolved in acid. Composition $(Mg_{1.50}Al_{1.06}Fe_{0.41})(Si_{1.01}Al_{0.99}O_{5.00})(OH)_{4.00}$ from chemical analysis. We derived conventional atom coordinates from those referring to the orthohexagonal cell reported in [1], and assigned approximate site occupations based on the nominal composition. Hydrogen atoms are not taken into consideration for Pearson symbol, Wyckoff sequence and atomic environments.

References: [1] Brindley G.W., Oughton B.M., Youell R.F. (1951), Acta Crystallogr. 4, 552-557. [2] Steadman R., Nuttall P.M. (1963), Acta Crystallogr. 16, 1-8. [3] Mellini M., Zanazzi P.F. (1987), Am. Mineral. 72, 943-948.