Table 6. Selected bond distances (Å) in fluorwavellite.

Al1–F5	1.7818(17)	Al2–OH6	1.8747(12)	P1–O3	1.5297(12)
Al1–F5	1.7982(16)	Al2–OH6	1.8793(12)	P1–O2	1.5321(12)
Al1–O2 (×2)	1.8346(13)	Al2–O4	1.8807(13)	P1–O4	1.5382(12)
Al1–O7 (×2)	1.9715(15)	Al2–O3	1.8973(12)	P1–O1	1.5393(12)
< Al1–O>	1.8654	Al2–O1	1.9210(13)	< P1–O>	1.5348
		Al2–O8	1.9686(14)		
		< Al2–O>	1.9036		

Hydrogen bonds

D–H···*A*	*D*–H	H···*A*	*D*···*A*	<*D*–H–*A*
O6–H6···O3	0.83(2)	2.09(2)	2.8594(17)	154.3(19)
O7–H71···O4	0.92(2)	1.92(2)	2.837(2)	172(2)
O7–H72···O2	0.79(2)	2.55(2)	3.117(2)	130(2)
O7–H72···O3	0.79(2)	2.42(2)	3.1959(19)	170(2)
O8–H81···O1	0.79(2)	1.88(2)	2.6604(19)	171(2)
O8–H82···O9	0.807(19)	2.11(2)	2.869(5)	156(2)
O8–H82···O10	0.807(19)	2.00(2)	2.803(4)	179(2)

Table 7. Bond-valence analysis for fluorwavellite.* Values are expressed in valence units.

	O1	O2	O3	O4	F5	O6	O7	O8	Σ
Al1		0.60 ×2→			0.53 0.50		0.41 ×2→		3.05
Al2	0.47		0.50	0.53		0.54 0.53		0.42	2.99
P	1.23	1.26	1.27	1.24					5.00
H6			0.16						
H71				0.17			0.83		
H72		0.04					0.96		
H81	0.22							0.78	
H82								0.82	
Σ	1.92	1.90	1.93	1.94	1.03	1.07	2.20	2.02	

* Multiplicity is indicated by ×2→. Al–O bond valence parameter is from Brese and O'Keeffe (1991) and those for P^{5+}–O and Al–F are from Brown and Altermatt (1985). Hydrogen-bond strengths are based on O···O bond lengths, from Brown and Altermatt (1985). The O9 and O10 sites are not included.