

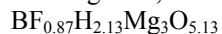
hP20

(176) $P6_3/m - h^3c$

Mg₃(BO₃)(OH,F)₃ [2], fluoborite

Structural features: Double infinite chains of edge-linked Mg[O₃(OH,F)₃] octahedra share vertices to form a 3D-framework; B in trigonal voids. Single BO₃ trigonal units perpendicular to [001].

Dal Negro A., Tadini C. (1974) [1]



$a = 0.8827$, $c = 0.3085$ nm, $c/a = 0.349$, $V = 0.2082$ nm³, $Z = 2$

site	Wyck.	sym.	<i>x</i>	<i>y</i>	<i>z</i>	occ.	atomic environment
O1	6 <i>h</i>	<i>m</i> ..	0.1544	0.6039	¹ / ₄		single atom B
M2	6 <i>h</i>	<i>m</i> ..	0.2982	0.2089	¹ / ₄		non-coplanar triangle Mg ₃
Mg3	6 <i>h</i>	<i>m</i> ..	0.3668	0.0297	¹ / ₄		octahedron (OH) ₃ O ₃
B4	2 <i>c</i>	-6..	¹ / ₃	² / ₃	¹ / ₄		coplanar triangle O ₃

M2 = 0.71OH + 0.29F

Experimental: single crystal, diffractometer, X-rays, R = 0.029

Remarks: Natural specimen from Nocera, Italy. Identical to so-called nocerite, which was erroneously assigned the formula Mg₃Ca₃O₂F₈. We assigned an approximate value to the OH/F ratio of site M2, based on the ideal ratio 12:5 given in the literature for this mineral (see [2]). Hydrogen atoms are not taken into consideration for Pearson symbol, Wyckoff sequence and atomic environments.

References: [1] Dal Negro A., Tadini C. (1974), TMPM, Tschermaks Mineral. Petrogr. Mitt. 21, 94-100.
[2] Takéuchi Y. (1950), Acta Crystallogr. 3, 208-210.