

Manganaxinite,  $\text{Ca}_2\text{Mn}^{2+}\text{Al}_2\text{BSi}_4\text{O}_{15}(\text{OH})$

Manganaxinite

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Site distribution of  $\text{Fe}^{2+}$  and  $\text{Fe}^{3+}$  in axinite mineral group: New crystal-chemical formula

7.1849 9.2152 8.9765 91.761 98.153 77.150 P-1

atom	x	y	z	Wyckoff
SiT1	0.21431	0.45019	0.23727	2i
SiT2	0.21933	0.27500	0.52453	2i
SiT3	0.70072	0.25369	0.01152	2i
SiT4	0.64055	0.01901	0.23013	2i
BT5	0.46165	0.63523	0.28647	2i
CaX1	0.74611	0.34774	0.39587	2i
CaX2	0.18328	0.10062	0.08379	2i
MnY	0.76934	0.58917	0.11157	2i
AlZ1	0.05275	0.80181	0.25422	2i
AlZ2	0.35213	0.93654	0.42153	2i
O1	0.05970	0.60338	0.18974	2i
O2	0.23487	0.33740	0.10084	2i
O3	0.42142	0.48736	0.31412	2i
O4	0.13711	0.37590	0.37345	2i
O5	0.02186	0.24271	0.56344	2i
O6	0.32635	0.37826	0.64732	2i
O7	0.38006	0.12749	0.49598	2i
O8	0.54054	0.34368	0.87721	2i
O9	0.87760	0.15216	0.93434	2i
O10	0.77047	0.36264	0.13966	2i
O11	0.60365	0.13357	0.08602	2i
O12	0.43632	0.98193	0.24413	2i
O13	0.71944	0.09975	0.38340	2i
O14	0.79302	0.87344	0.17787	2i
O15	0.32625	0.74656	0.35564	2i
O16	0.09696	0.99702	0.32332	2i
H	0.001	0.951	0.627	2i

(27 × 2i)

### Raman Active Modes

WP	A <sub>g</sub>	A <sub>u</sub>
2i	3	·

Total number of modes:

$$81A_g = 81$$