

Possible candidate for hydrous-forsterite

Yasuhiro Kudoh[1]

[1] Tohoku Univ

The crystal structures of humite group minerals have generally been interpreted by the combination of forsterite, Mg_2SiO_4 and brucite, $\text{Mg}(\text{OH})_2$ structures. In this study, a new way of interpretation is proposed. Possible Structure for hydrous-forsterite thus obtained has chemical formula, $\text{Mg}_9\text{Si}_5\text{H}_2\text{O}_{20}$ ($=5\times\text{Mg}_{1.8}\text{SiH}_{0.4}\text{O}_4$) with monoclinic unit cell. Since the x-ray powder diffraction pattern of hydrous-forsterite proposed in this study is very close to that of clinohumite, there is possibility of this phase having been undiscovered. Humite group minerals and hydrous forsterite proposed in this study makes homologous series as recombination structures.