

## **TOBERMORITES: CLASSIFICATION, NOMENCLATURE AND POSSIBLE NEW SPECIES.**

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The results of the structural and crystal chemical studies carried on the various members of the tobermorite group (1-3) now permit a sound understanding of the relationships between the phases corresponding to the various degrees of hydration (tobermorite 9Å, tobermorite 11Å and clinotobermorite, tobermorite 14Å) and of the chemical and structural differences between 'normal' and 'anomalous' tobermorite 11Å. Those studies have also clearly shown that all these compounds present two main modifications, with distinct, polytypically related, structural arrangements. Moreover it has been realised that actually two distinct 'tobermorite 9Å' phases exist, one derived from clinotobermorite, the other derived from tobermorite 11Å by dehydration processes. It is presently possible and probably useful to revise the whole nomenclature of the tobermorite group and to properly redefine the various natural members of this mineralogical family. Some other hydrated calcium silicates, such as the minerals jennite, oyelite, tacharanite, and fukalite, display cell parameters closely related to those of tobermorite; moreover, they show disorder phenomena, as indicated by their X-ray diffraction pattern, very similar to those described for all the minerals of the tobermorite group. Their structural arrangements are presently unknown, but the knowledge of the structural details of the tobermorites could be a decisive step in the full characterisation and reliable definition of these minerals. (1) Merlino, S., Bonaccorsi, E. and Armbruster, T. (1999) Tobermorites: their real structure and order-disorder (OD) character. *Am. Mineral.*, 84. (2) Merlino, S., Bonaccorsi, E. and Armbruster, T. (1999) The real structures of clinotobermorite and tobermorite 9Å: OD character, polytypes, and structural relationships. Submitted to *Eur. J. Miner.* (3) Merlino, S., Bonaccorsi, E. and Kampf, A.R. (1999) Substructure of tobermorite 14Å and OD model for its real structure. *Plinius*, 22, 250-252.