

MS15-P12 Chemical preparation,
crystallographic characterization and
vibrational study of condensed phosphates
associated to Barium-Cesium
 $\text{BaCs}(\text{P}_3\text{O}_9)_2 \cdot 2\text{H}_2\text{O}$

Aziz KHEIREDDINE¹, TRIDANE Malika^{1,2}, BELHABRA
Mustapha¹, FAHIM Ismail¹, MOUTAABBID Hicham³,
MOUTAABBID Mohammed¹, BELAAOUAD Said¹

1. Laboratory of chemistry and physic of materials, University Hassan II- Casablanca, Morocco
2. Centre Régional des métiers d'enseignement et de formation Casablanca, Maroc
3. Minéralogie, de Physique des Matériaux, et de Cosmochimie (IMPMC), University Paris 06, France.

email: kheireddine.aziz@gmail.com

Methods of chemical preparation and XRD data are reported for the new condensed phosphates associated to Barium-Cesium $\text{BaCs}(\text{P}_3\text{O}_9)_2 \cdot 2\text{H}_2\text{O}$. $\text{BaCs}(\text{P}_3\text{O}_9)_2 \cdot 2\text{H}_2\text{O}$ was prepared by the method of ion-exchange resin. This salt crystallizes in the monoclinic system, space group $P2_1/n$ $a = 7.6992(2)$ Å $b = 12.3237(3)$ Å $c = 11.8023(3)$ Å, $\beta = 101.181^\circ(3)$, $M(20) = 1313,35$; $F(20) = 1004,53$ and $V = 333,95(2)$ (Å³), the vibrational study by IR absorption spectroscopy of the title compound reveals the presence of three bands and confirm the existence of non-equivalent positions of water molecules in the structure.

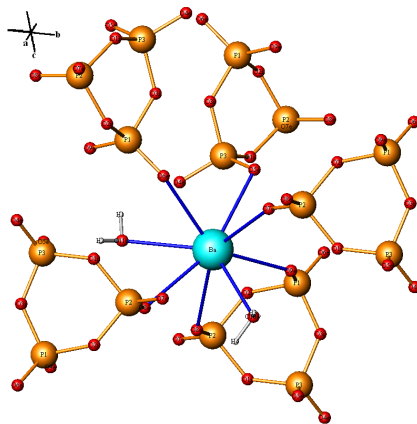


Figure 1. Projection of the structure Barium-Cesium $\text{BaCs}(\text{P}_3\text{O}_9)_2 \cdot 2\text{H}_2\text{O}$

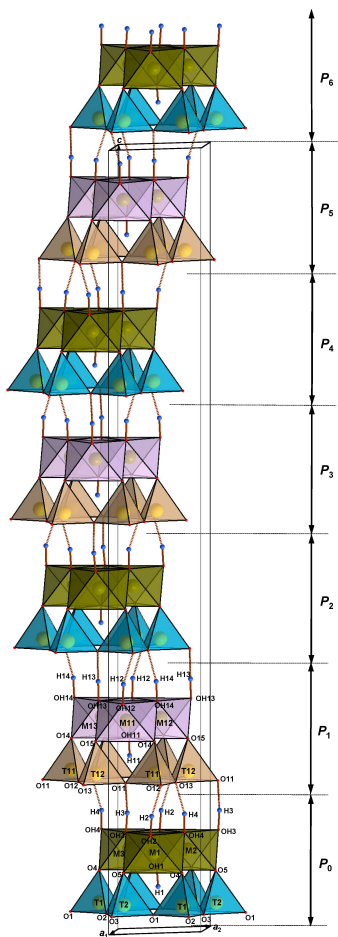


Figure 1. Structure of cronstedtite-6T₂, side view, projection close to a . For sake of clarity, only a small part of every OD packet (1:1 layer) is displayed: one ring of tetrahedra and three adjacent octahedra. Delimitations of packets (P_0 , P_1 , P_2 ...) are indicated on the right side.

Keywords: Cronstedtite, 1:1 layer silicate, polytypism, non-MDO polytype 6T₂, crystal structure

Keywords: condensed phosphates, ion-exchange resin, vibrational study