

The Systems Li-Ho-P-O and K-Ho-P-O: A Study in Inert Atmosphere

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The phosphates with open frameworks are materials that are composed by (PO₄) tetrahedral and by others polyhedral as octahedral (XO₆) and dodecahedral (XO₈) units. So, this structural conformation prove several applications of such materials as ionic conductors, ion exchangers, scintillating materials for gamma ray detection [1], catalysts [2], anticorrosive [3], etc. As part of our phosphates with open frameworks research, we study the phases present in the systems Li-Ho-P-O and K-Ho-P-O using different temperatures reaction and atmospheres. In this work, different phosphates compound like rare earth phosphate (Xenotime-type HoPO₄), alkali metaphosphate (APO₃, A= Li, K) and an alkali-rare earth pyrophosphate (LiHoP₂O₇) [4] were synthesized. These phases were characterized by X ray powder diffraction, differential thermal analysis and microscopy methods. A crystallochemistry study relating the crystal structures was performed.

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