

## Weitere Verbindungen zum $\text{Ba}_6\text{Nd}_2\text{Al}_4\text{O}_{15}$ -Typ: $\text{Ba}_4\text{Nd}_4\text{Zn}_3\text{PtO}_{15}$ und $\text{Ba}_4\text{Eu}_4\text{Zn}_3\text{PtO}_{15}$

Further Compounds of the  $\text{Ba}_6\text{Nd}_2\text{Al}_4\text{O}_{15}$   
Type:  $\text{Ba}_4\text{Nd}_4\text{Zn}_3\text{PtO}_{15}$  and  
 $\text{Ba}_4\text{Eu}_4\text{Zn}_3\text{PtO}_{15}$

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Z. Naturforsch. **53b**, 628–630 (1998);  
eingegangen am 16. Februar 1998

The compounds  $\text{Ba}_4\text{Nd}_4\text{Zn}_3\text{PtO}_{15}$  (I) and  $\text{Ba}_4\text{Eu}_4\text{Zn}_3\text{PtO}_{15}$  (II) crystallize with hexagonal symmetry, space group  $C_{6v}^4\text{-P6}_3\text{mc}$ , (I):  $a = 11.719(1)$ ,  $c = 6.778(1)$  Å, (II):  $a = 11.654(1)$ ,  $c = 6.778(1)$  Å,  $Z = 2$ . Both belong to the  $\text{Ba}_6\text{Nd}_2\text{Al}_4\text{O}_{15}$  type when replacing  $2\text{Ba}^{2+}$  by  $2\text{Ln}^{3+}$  and  $4\text{Al}^{3+}$  by  $3\text{Zn}^{2+} + \text{Pt}^{4+}$ . The tetrahedrally coordinated  $\text{Al}^{3+}$  is substituted by  $\text{Zn}^{2+}$ , the octahedrally one by  $\text{Pt}^{4+}$ . Due to the similarity of X-ray scattering of  $\text{Ba}^{2+}$  and  $\text{Ln}^{3+}$  the ordered replacement of  $\text{Ba}^{2+}$  by  $\text{Ln}^{3+}$  has been proven by calculations of the Coulomb terms of lattice energy.

\* Sonderdruckanforderungen an Prof. Dr. Hk. Müller-Buschbaum.