

H(3)tren (3+) and H(4)tren (4+) fluoride zirconates or tantalates

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Titre H(3)tren (3+) and H(4)tren (4+) fluoride zirconates or tantalates

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R sum  en anglais
Four new [H(3)tren](3+) or [H(4)tren](4+) fluoride zirconates and two new [H(3)tren](3+) fluoride tantalates are evidenced in the (ZrF₄ or Ta₂O₅)-tren-HFaq.-ethanol systems at 190 degrees C: the structurally related phases [H(4)tren]center dot(Zr₂F₁₂)center dot H₂O and alpha-[H(4)tren](center dot)(Zr₂F₁₂) (P₂(1)2(1)2(1)). beta-[H(4)tren]center dot(Zr₂F₁₂) (P₂(1/c)), [H(3)tren](4)center dot(ZrF₈)(3)center dot 4H(2)O (123). beta-[H(3)tren](2)center dot(Ta₃O₂F₁₆)center dot(F) (R32) and its monoclinic distortion alpha-[H(3)tren](2)center dot(Ta₃O₂F₁₆)center dot(F) (C2/m). alpha and beta-[H(4)tren]center dot(Zr₂F₁₂) and [H(4)tren]center dot(Zr₂F₁₂)center dot H₂O are built up from (Zr₂F₁₂) dimers of edge sharing ZrF₇ polyhedra while isolated ZrF₈ dodecahedra are found in [H(3)tren](4)center dot(ZrF₈)(3)center dot 4H(2)O. Linear (Ta₃O₂F₁₆) trimers build et and beta-[H(3)tren](2)center dot(Ta₃O₂F₁₆)center dot(F); they consist of two (TaOF₆) pentagonal bipyramids that are linked to two opposite oxygen atoms of one central (TaO₂F₄) octahedron. A disorder affects the equatorial fluorine atoms of the trimers and eventually carbon or nitrogen atoms of [H(3)tren](3+) cations. (C) 2011 Elsevier B.V. All rights reserved.

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