Synthesis and Structure of Sr_2Pd_2In and Sr_2Pt_2In

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The new intermetallic compounds Sr_2Pd_2In and Sr_2Pt_2In were synthesized from the elements in sealed tantalum tubes in a water-cooled sample chamber of an induction furnace. Both indides crystallize with the HT-Pr_2Co_2Al-type structure: $C2/c$, a = 1048.7(2), b = 603.5(2), c = 830.6(1) pm, β = 103.68(2)°, wR2 = 0.0492, 743 F^2 values for Sr_2Pd_2In; a = 1026.8(2), b = 599.0(1), c = 830.3(2) pm, β = 103.17(1)°, wR2 = 0.0666, 885 F^2 values for Sr_2Pt_2In with 25 variables per refinement. The shortest interatomic distances occur for the Pd–In (Pt–In) and Pd–Pd (Pt–Pt) contacts. The strontium atoms are embedded in complex three-dimensional polyanionic networks of compositions $[Pd_2In]$ and $[Pt_2In]$.

Key words: Strontium Intermetallics, Crystal Structure