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**Intermetallic Compounds $RE_{26}(Ru_xIn_{1-x})_{17}$
(RE - Pr, Nd, Sm, Gd-Tm, Lu)**

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New intermetallic compounds of variable composition $RE_{26}(Ru_xIn_{1-x})_{17}$ (RE - Pr, Nd, Sm, Gd-Tm, Lu) are formed in region with high content of RE of the ternary systems RE-Ru-In. New indides belong to the $Sm_{26}(Co_xGa_{1-x})_{17}$ structure type [1]. Previously, iso-structural compounds were obtained for gallides of rare-earth elements with transition metals T - Co, Ni, Ru [1,2]. Intermetallic compounds under consideration are the first indides of $Sm_{26}(Co_xGa_{1-x})_{17}$ structure type.

For the synthesis of rare earth-rich indides with ruthenium, elementary components were arc-melted in an argon atmosphere, followed by annealing at 600°C for 720 hours and subsequent quenching in cold water. The structures of the compounds were refined from powder X-ray diffraction data by the Rietveld method using the structural model of $Sm_{26}(Co_xGa_{1-x})_{17}$.

$RE_{26}(Ru_xIn_{1-x})_{17}$ (RE - Pr, Nd, Sm, Gd-Tm, Lu) crystallize in tetragonal system with the space group $P4/mbm$, $Z = 2$. Unit cell parameters in the series of indides range from $a = 12.201(4)$ Å, $c = 16.198(10)$ Å (Pr) to $a = 11.5448(15)$, $c = 15.786(4)$ Å (Lu). The cell volumes decrease from the praseodymium to the lutetium as expected from the lanthanide contraction.

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[1] Ya. Yarmolyuk, Yu. Grin', and O. Olesh, *Soviet Physics.Crystallogr.* **25**, 143 (1980).

[2] O. Myakush, A. Fedorchuk, and A. Zelinskii, *Inorganic Materials.* **34**, 562 (1998).