New intermetallic compounds $RE_5T_2In_4$ ($RE = Sc, Y, La–Nd, Sm, Gd–Tm, Lu; T = Rh, Ir$) were synthesized by arc-melting of the elements or by induction melting of the elements in tantalum crucibles under flowing argon. The samples were characterized by X-ray powder diffraction. They crystallize with the orthorhombic $Lu_5Ni_2In_4$-type structure, space group $Pbam$, $Z = 2$, a 2:1 intergrowth variant of CsCl and AlB$_2$ related slabs of compositions $InRE_8$ (distorted cubes) and $RhRE_6$ (distorted trigonal prisms). Susceptibility measurements of $Ce_5Ir_2In_4$ have revealed modified Curie-Weiss behavior above 70 K with an experimental magnetic moment of $2.45(1) \mu_B$/Ce atom. The cerium magnetic moments order ferri- or ferromagnetically at $T_C = 7.1(2)$ K.

**Key words:** Intermetallics, Indium, Crystal Chemistry