

# Synthesis and Structure of YbIrIn<sub>5</sub>

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The new ternary indium-rich compound YbIrIn<sub>5</sub> was synthesized from the elements via an indium flux technique. A mixture with the starting composition 1:1:7 was heated at 1300 K in a tantalum tube for 6 h and cooled to room temperature at a rate of 5 K/h. The structure was refined from X-ray single crystal diffractometer data: HoCoGa<sub>5</sub> type, *P4/mmm*, *a* = 461.96(7), *c* = 740.21(15) pm, *wR*<sub>2</sub> = 0.0616, 222 *F*<sup>2</sup> values, and 12 variable parameters. The iridium atoms have eight indium neighbors in square prismatic coordination at Ir—In distances of 274 pm. The square prisms are condensed via common edges forming layers which are separated by the ytterbium and further indium atoms. Ytterbium has a cuboctahedral indium coordination. The cell volume is suggestive for divalent or intermediate-valent ytterbium.

*Key words:* Indium, Crystal Structure, Solid State  
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