Structure Refinement of $BaIrIn_2$

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$BaIrIn_2$ was synthesized from the elements in a sealed tantalum tube in an induction furnace. The indide was investigated by powder and single crystal X-ray data: *Cmcm*, $a = 443.3(1)$, $b = 1151.3(2)$, $c = 806.0(1)$ pm, $wR2 = 0.0471$, 352 F^2 values, and 16 variable parameters. The iridium and indium atoms build up two-dimensional $[IrIn_2]^{2-}$ polyanions (279 – 281 pm Ir–In and 310 — 314 pm In–In) which are separated and charge-balanced by the barium atoms. The two-dimensional character of the polyanion is responsible for the strong moisture sensitivity of $BaIrIn_2$. The coordination numbers for barium, iridium, and indium are 15, 9, and 12, respectively.

Key words: Indium, Crystal Structure, Solid State Synthesis