Structure Refinement of $AuSn_2$

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Well-shaped single crystals of binary $AuSn_2$ were obtained as a side product during the synthesis of $LiAu_3Sn_4$. The structure of $AuSn_2$ has been studied by X-ray diffractometer data: *Pbca*, $Z = 8$, $a = 689.8(1)$, $b = 701.1(1)$, $c = 1177.3(2)$ pm, $wR2 = 0.0533$, 1234 F^2 values, and 29 variables. The gold atoms show a distorted octahedral coordination by tin at Au–Sn distances ranging from 272 to 283 pm. The structure can be considered as an intergrowth of pyrite and marcasite related slabs. Consequently one observes Sn1–Sn2 dumb-bells with a Sn–Sn distance of 289 pm, while all other Sn–Sn distances are larger than 322 pm.

Key words: Stannide, Intermetallics, Crystal Chemistry