RE_6Ni_2In (RE = Gd, Tb, Dy, Ho, Lu) – The New Representatives OF Ho_6Co_2Ga Structure Type

Yaroslav Galadzhun[a], Mariya Dzevenko[a], Vasyl' Zaremba[a], Julia Stępień-Damm[b], Yaroslav Kalychak[a], [a]*Department of Inorganic Chemistry, Ivan Franko National University of Lviv, Ukraine.* [b]*W. Trzebiatowski Institute of Low Temperature and Structure Research, Wroclaw, Poland.* E-mail: galadzh@mail.lviv.ua

The compound Ho_6Ni_2In was synthesized in an arc-melting furnace under an argon atmosphere and special heat treatment was applied for the growth of single crystals. Intensity data were collected by use of a KM-4 CCD diffractometer with graphite mono-chromatized MoKα radiation. The structure was refined by direct methods with anisotropic displacement parameters for all atoms using SHELX-86 and SHELXL-97 programs: sp.gr. *Immm*, a = 9.319(2), b = 9.523(2), c = 9.930(2) Å, Z = 4; $R1$ = 0,0401, $wR2$ = 0,0891 for 581 reflections with $I > 4\sigma(I)$. The 2(*a*) site shows mixed occupancy $Ni_{0.64(4)}In_{0.36(4)}$.

Atom	Site	*x*	*y*	*z*	U_{eq}, Å^2
Ho1	8(*n*)	0.2912(1)	0.1840(1)	0	0.0140(3)
Ho2	8(*m*)	0.3032(1)	0	0.3222(1)	0.0107(3)
Ho3	8(*l*)	0	0.1963(1)	0.2232(1)	0.0200(3)
Ni1	4(*j*)	1/2	0	0.1226(4)	0.0136(8)
Ni2	4(*g*)	0	0.3603(5)	0	0.0179(9)
In	2(*c*)	1/2	1/2	0	0.0103(6)
M	2(*a*)	0	0	0	0.020(2)

The structure of the Ho_6Ni_2In compound belongs to the Ho_6Co_2Ga structure type [1]. Isostructural compounds were found also with Gd, Tb, Dy, and Lu.

[1] Gladyshevskii R., Grin Yu., Yarmolyuk Ya., *Dop. AN URSR*, 1983, **(2)**, 70.

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