

Transition Metal-Gallium Ordering in HfCoGa_2 and HfNiGa_2

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The gallides HfCoGa_2 and HfNiGa_2 were synthesized by arc-melting of the elements and subsequent annealing in glassy carbon crucibles. Their structures have been reinvestigated by X-ray diffraction on powders and single crystals: $I4mm$, $a = 1222.4(1)$, $c = 812.0(1)$ pm, $wR2 = 0.0766$, 1464 F^2 values, 64 variables, BASF = 0.41(2) for HfCoGa_2 and $a = 1224.0(2)$, $c = 809.3(2)$ pm, $wR2 = 0.0609$, 1499 F^2 values, 63 variables for HfNiGa_2 . In contrast to a previous investigation (Dopov. Akad. Nauk Ukr. RSR, Ser. A, 51 (1988)) we observe a fully ordered arrangement of the transition metal and gallium atoms. The crystal chemistry of these gallides is briefly discussed.

Key words: Hafnium, Gallide, Crystal Structure