structure (solids and liquids)

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The Lanthanum-Germanium System. Nineteen Isostructural Interstitial Compounds of the La5Ge3 Host. — Single phase La5Ge3Z compounds with Z: N, O, P, S, Cl, As, Se, Sb, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ru, Cd and nonstoichiometric La5Ge3Bx and La5Ge3Cx (x could not be determined exactly) are prepared by solid state reactions in Ta containers. Singe crystal XRD data are reported for La5Ge3 and La5Ge3Cr (both space group P63/mcm), whereas the structures of the other compounds are determined by powder XRD. Except for N and O, the cell volume increases upon insertion of Z. Electronic and magnetic poperties of selected phases are reported. La5Ge3 is Pauli-paramagnetic and metallic, while La5Ge3P is a diamagnetic semiconductor. Extended Hueckel calculations are carried out on La5Ge3, La5Ge3P, and La5Ge3Fe. — (GULOY, A. M.; CORBETT, J. D.; Inorg. Chem. 32 (1993) 16, 3532-3540; Dep. Chem., Iowa State Univ., Ames, IA 50011, USA; EN)