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COMPARATIVE THERMODYNAMIC PREDICTING IN Al-Co-Me (Me=Ti, Mo) SYSTEMS

D. Živković[1], A. Kostov[2], I. Katayama[3], N. Štrbac[1]
[1]University of Belgrade, Technical Faculty, Bor, Serbia and Montenegro, [2]Copper Institute, Bor,
[3]Osaka University, Graduate School of Engineering, Department of Materials Science and Processing, Osaka, Japan

Alloys based on the Al-Co-Me (Me = Ti, Mo) systems are of practical interest as the constituents in the production of Ni-based super alloys, surgical implants, heat-resistant and corrosion-resistant protective coatings. In spite of this fact, thermodynamic study of such multicomponent systems has not yet been completely reported in the literature, while there are a lot of articles dealing with the thermodynamics of the constituent binary systems. Having in mind such problems, it is anticipated that most of the thermodynamic data of ternary and multicomponent systems will come from theoretical calculations rather than from direct experimentation. The main reasons are experimental difficulties, especially the high investigation temperatures required. Therefore, the results of comparative analysis of thermodynamic predicting in ternary systems Al-Co-Ti and Al-Co-Mo are presented in this paper. Characteristic thermodynamic properties, including integral and partial molar quantities at the temperature of 2000K, have been calculated using different thermodynamic predicting models and compared mutually.