

عنوان مقاله:

Densification and Shape Distortion of the Al-Cu-Mg Pre-alloyed Powder Compact in Supersolidus Liquid Phase Sintering Process

محل انتشار:

مجله علم مواد و مهندسی ایران، دوره 17، شماره 4 (سال: 1399)

تعداد صفحات اصل مقاله: 6

نویسندگان:

(H. Momeni - Research associate of School of Metallurgy and Materials Engineering, Iran University of Science and Technology (IUST

(S. Shabestari - Professor of School of Metallurgy and Materials Engineering Iran University of Science and Technology (IUST

(S.H. Razavi - Associate Professor of School of Metallurgy and Materials Engineering, Iran University of Science and Technology (IUST

خلاصه مقاله:

In this research, densification and shape distortion of the Al-Cu-Mg ( $Al_{20}Cu_{24}$ ) pre-alloyed powder compact in the supersolidus liquid phase sintering process (SLPS) were investigated. The effect of Sn on the sintering process was also studied. The powders were compacted at pressures ranging from 100 to 500 MPa in a cylindrical die. The sintering process was performed in a dry  $N_2$  atmosphere at various temperatures ( $580-620^{\circ}C$ ) for 30 min at a heating rate of  $10^{\circ}C/min$ . Results showed that the onset of densification process was observed at  $600^{\circ}C$  and onset of distortion was occurred at  $610^{\circ}C$ . Addition of 0.1 wt. %Sn to the alloy has increased the distortion of the samples produced from Al-Cu-Mg pre-alloyed powder, but their densification has been improved. The compact pressure of 200 MPa caused the complete densification at the optimum sintering temperature and at the compact pressures greater than 200 MPa; the sintered density was independent of green density

کلمات کلیدی:

Al-Cu-Mg powder,  $Al_{20}Cu_{24}$  Al alloy, SLPS, liquid phase sintering, distortion, densification

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1602744>

