

عنوان مقاله:

Effect of Ta Addition on Microstructure and Hot Oxidation Resistance of AlCrCoNiY-xTa High-Entropy Alloy
Consolidated by Spark Plasma Sintering

محل انتشار:

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خلاصه مقاله:

High Entropy Alloys (HAEs) are alloys with multiple elements (typically 5 or more elements) that remain in solid solution state instead of precipitate in several phases. These alloys are multicomponent alloys having constituents in equiatomic or near equiatomic ratios (having the atomic percentage between 5% and 35%). In this paper, the effects of Ta addition on the microstructure and oxidation behavior of 4 High and Medium Entropy Alloys were investigated with the aim of understanding the relationship between phase / microstructure and oxidation resistance of AlCrCoNiY-xTa alloys. The microstructure investigations showed that the presence of Ta alloying element could lead to the formation of CrTaO₂ phase. The amount of this phase increases with a higher percentage of Ta element. Also, more results show that, formation of CrTaO₂ phase facilitates the formation of Al₂O₃ oxide phase as an outer layer and the presence of this phase can improve the oxidation properties of the investigated alloys

کلمات کلیدی:

High-Entropy Alloys, Oxidation Resistance, CrTaO₂

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