

Accepted Manuscript

Effect of beryllium content and heat treatment on microstructure and yield strength in Be/6061Al composites

Xiangdong Liu, Pengcheng Zhang, Shixiong He, Qingdong Xu, Zuoyong Dou, Haijun Wang



PII: S0925-8388(18)30491-2

DOI: [10.1016/j.jallcom.2018.02.060](https://doi.org/10.1016/j.jallcom.2018.02.060)

Reference: JALCOM 44936

To appear in: *Journal of Alloys and Compounds*

Received Date: 1 November 2017

Revised Date: 5 February 2018

Accepted Date: 6 February 2018

Please cite this article as: X. Liu, P. Zhang, S. He, Q. Xu, Z. Dou, H. Wang, Effect of beryllium content and heat treatment on microstructure and yield strength in Be/6061Al composites, *Journal of Alloys and Compounds* (2018), doi: 10.1016/j.jallcom.2018.02.060.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Effect of beryllium content and heat treatment on microstructure and yield strength in Be/6061Al composites

Xiangdong Liu^a, Pengcheng Zhang^{a*}, Shixiong He^a, Qingdong Xu^a, Zuoyong Dou^a,
Haijun Wang^a

*^aScience and Technology on Surface Physics and Chemistry Laboratory, Mianyang,
621907, China.*

**Corresponding author: Science and Technology on Surface Physics and Chemistry
Laboratory, Mianyang, 621907, China. E-mail: zpc113@sohu.com*

Abstract: 6061Al alloy was selected as the matrix of beryllium-aluminum composites and Be/6061Al composites with 20wt.% Be, 40 wt.% Be and 62 wt.%Be were prepared by hot isostatic pressing sintering technology. The microstructure and interface characteristics of Be/6061Al composites were investigated and characterized by SEM and TEM. The results showed that Be/6061Al composites were made up of Be phase and Al rich phase and there was no reaction product at the interface. Be phase and Al-rich phase combined mechanically and kept a certain orientation relationship in Be/6061Al composite. The yield strength of Be/6061Al composites increased with the increase of Be content, which could be predicted by modified shear lag model. Mg and Si formed β'' and precipitated in the Al matrix after artificially aging treatment and dramatically improved the yield strength of Be/6061Al

Download English Version:

<https://daneshyari.com/en/article/7993457>

Download Persian Version:

<https://daneshyari.com/article/7993457>

[Daneshyari.com](https://daneshyari.com)