

# Accepted Manuscript

Microstructure evolution and mechanical properties of near- $\alpha$  Ti-8Al-1Mo-1V alloy at different solution temperatures and cooling rates

Xiaohui Shi, Weidong Zeng, Yu Long, Yanchun Zhu



PII: S0925-8388(17)32894-3

DOI: [10.1016/j.jallcom.2017.08.165](https://doi.org/10.1016/j.jallcom.2017.08.165)

Reference: JALCOM 42922

To appear in: *Journal of Alloys and Compounds*

Received Date: 18 May 2017

Revised Date: 29 July 2017

Accepted Date: 16 August 2017

Please cite this article as: X. Shi, W. Zeng, Y. Long, Y. Zhu, Microstructure evolution and mechanical properties of near- $\alpha$  Ti-8Al-1Mo-1V alloy at different solution temperatures and cooling rates, *Journal of Alloys and Compounds* (2017), doi: 10.1016/j.jallcom.2017.08.165.

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.

# Microstructure evolution and mechanical properties of near- $\alpha$ Ti-8Al-1Mo-1V alloy at different solution temperatures and cooling rates

Xiaohui Shi<sup>1,2</sup> Weidong Zeng<sup>1\*</sup> Yu Long<sup>1</sup> Yanchun Zhu<sup>3</sup>

1. State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China;
2. College of Materials Science and Engineering, Taiyuan University of Technology, Taiyuan 030024, China;
3. School of Mechanical Engineering, Taiyuan University of Science and Technology, Taiyuan 030024, China;

Corresponding author: Weidong Zeng

Tel: +86 29 88494298; fax: +86 29 88494298

Email: [rocktitan@mail.nwpu.edu.cn](mailto:rocktitan@mail.nwpu.edu.cn) (X. Shi), [zengwd@nwpu.edu.cn](mailto:zengwd@nwpu.edu.cn) (W. Zeng)

Postal address: State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, No.127 Youyi Xilu, Xi'an 710072, P.R. China.

**Abstract:** Nine solution-ageing treatments with different solution temperatures (915°C, 960°C, 1010°C) and cooling media (water quenching, oil cooling, air cooling) were firstly conducted on the rolled near- $\alpha$  Ti-8Al-1Mo-1V alloy. The microstructure evolution behavior and various mechanical properties of this alloy were studied. The results show that solution temperature can greatly influence microstructure features. By increasing solution temperature, the volume fraction of primary  $\alpha$  phase continuously decreased, the original shapeless primary  $\alpha$  phase was sectioned and gradually showed equiaxed shape, and the  $\beta$  grain kept growing until its grain boundary

Download English Version:

<https://daneshyari.com/en/article/5458840>

Download Persian Version:

<https://daneshyari.com/article/5458840>

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