

[11] 黄文尧, 颜事龙, 王晓光, 等. 新型粉状铵油炸药的实验研究[J]. 含能材料, 2010, 18(2): 222-225.
HUANG Wen-yao, YAN Shi-long, WANG Xiao-guang, et. al.

Preparation and performance of a new powdery ammonium nitrate fuel oil explosive[J]. *Chinese Journal of Energetic Materials (Hanneng Cailiao)*, 2010, 18(2): 222-225.

Experimental Study on Expanded ANFO Explosive of Low Detonation Velocity Used in Explosive Welding

HUANG Wen-yao¹, YU Yan¹, WU Hong-bo¹, LI Ya², YOU You³, YUAN Sheng-fang¹

(1. School of Chemical Engineering, Anhui University of Science and Technology, Huainan 232001, China; 2. China Shipbuilding Industry Corporation, Luoyang Ship Material Research Institute, Luoyang 471039, China; 3. Zhengzhou Yuguang Clad Metal Material Co., Ltd, Zhengzhou 450001, China)

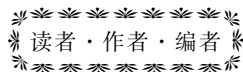
Abstract: In order to solve the problems of poor homogeneity and unstable explosion property of low detonation velocity explosive used in explosive welding. Ammonium nitrate was mixed with microcrystalline, octadecylamine acetate, diluents, and water at 115 ~ 125 °C, and it was dehydrated at -0.07 ~ -0.09 MPa. The thermal safety, microstructure and mechanical sensitivity were analyzed, the effect of the explosive layout thickness on detonation velocity was also studied, and the explosive welding test on aluminum-steel plate was done. The results show that the component has a good the mixing uniformity, the mechanical sensitivity is low, the detonation velocity is 1900 ~ 2400 m · s⁻¹, and the recombination rate of ultrasonic flaw detection is up to 99%, which can satisfy the requirement of explosive welding of metal plate.

Key words: applied chemistry; expanded ANFO explosive; diluents; mixing; low detonation velocity; explosive welding.

CLC number: TJ55; O69

Document code: A

DOI: 10.3969/j.issn.1006-9941.2012.06.027



特别策划——《计算含能材料研究》专栏征稿

含能材料的计算研究受到国内外科研工作者的广泛关注。为此,《含能材料》将于2013年10月第5期组织出版“特别策划——《计算含能材料研究》专栏”。内容涉及含能材料的相关计算研究。以原创性研究论文为主,少量研究综述及研究快报。

稿件截稿日期为2013年7月31日。

来稿时请在“拟投栏目”中选择“计算含能材料研究”。

欢迎来稿!

《含能材料》编辑部