Effects of Coating Methods on PBX-RDX Impact Sensitivity

LU Ming[1], SUN Jie[2], CHEN Yu[1], LUO Yun-jun[1], TAN Hui-min[1]

(1. *School of Material Science and Engineering, Beijing Institute of Technology, Beijing* 100081, *China*;
2. *Insititute of chemical materials, CAEP, Mianyang* 621900, *China*)

Abstract: Waterborne polyurethane (WPU) latex was prepared with toluene-2,4-diiso-cyanate (TDI), polyether (DL-400, TMN-450) and 2,2-bis-(hydroxymethyl)-propionic acid (DMPA), and characterized by FTIR. Two kinds of methods, depositing WPU latex by adding 10% alum solution and latex polymerization were used to coat RDX. SEM results indicat that RDX is coated the best with 1% WPU coating content in destroying latex way; while RDX is coated worst by method of latex polymerization. Special height H_{50} of RDX coated with WPU was determined by impact sensitivity test. And result indicate that H_{50} of RDX before coating is 22.3 cm; that H_{50} of RDX coated with 1% WPU in destroying latex way is 82.2 cm; that H_{50} of RDX coated with 1% WPU by method of latex polymerization is 59.0 cm. Conclusion will be drawn through experiments that coating RDX by method of polymerization-depositing WPU latex can effectively improve the property of its sensitization, and increase the value of H_{50}, whose effects are predominant to that of polymerization.

Key words: materials science; depositing latex; polymerization; coating; RDX; impact sensitivity

读者·作者·编者

致　谢

2004 年,在各级领导的关心和各行专家的帮助下,本刊得以顺利出版发行,为此,本编辑部特向下列各位审稿人(以汉语拼音为序)致谢!

蔡瑞娇　陈　朗　陈世武　陈作如　成　一　邓敏智　丁雁生　董海山　杜成中　封继康　韩敦信
郝　莹　胡庆贤　胡荣祖　浣　石　黄风雷　黄毅民　黄正平　黄中华　惠君明　姬广富　蒋德春
金碧辉　居学海　劳允亮　李澄俊　李大红　李凤生　李　红　李加荣　李金山　李　明　李疏芬
梁朝虎　刘吉平　刘时风　刘　彤　刘子如　陆　明　吕春绪　罗景润　罗顺火　罗运军　缪　强
欧育湘　潘功配　钱立新　邵自强　沈瑞琪　盛涤伦　宋　浦　孙承纬　谭杜艳　谭多望　唐承志
唐汉祥　田安民　田　勇　汪　渊　王伯周　王克强　王乃兴　王世英　王晓峰　王泽山　魏运洋
温玉全　吴国栋　向　永　肖鹤鸣　肖忠良　谢高第　徐更光　严　楠　杨振英　尹孟超　尹喜凤
于永忠　余　堃　俞统昌　郁卫飞　喻健良　张宝平　张朝阳　张　健　张教强　张　明　张泰华
张同来　张　炜　赵　峰　赵凤起　赵省向　赵信岐　赵珍娣　周之奎　周智明　朱春华

《含能材料》编辑部
二〇〇四年十二月