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基于桐油包膜材料的包膜尿素的研究 (I) 包膜材料的FTIR, DTA-TGA研究

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Studies on the urea coated with tung oil as coating materials (I) Study on the coating materials by FTIR and the coupling of DTA-TGA

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摘要 用FTIR和DTA-TGA联用技术研究了桐油包膜尿素中使用的桐油、桐油/无机调理剂混合物的红外吸收特征和热行为,用800℃热分解残重率测定了包膜材料中桐油聚合物的实际含量.结果表明,包膜中桐油的双键特征吸收明显减少甚至消失,无机调理剂的引入使桐油聚合物在程序升温过程中的放热峰温向高温移动.在包膜率相近的情况下,由含无机调理剂的桐油包膜材料制备的包膜尿素,包膜材料中桐油聚合物的含量越大,包膜尿素的缓释性就越好.

关键词: 桐油包膜尿素 包膜材料 FTIR DTA-TGA 缓释性

Abstract: The characteristic IR absorption, thermal behavior of tung oil and its mixture with inorganic materials used in urea coating were investigated by means of FTIR and the DTA-TGA technology. The content of tung oil polymer in coating materials was determined by residues percent of the coating materials after thermal degradation at 800°C. The results show that characteristic IR absorption of tung oil delonging to the double bond reduced or disappeared after being coated. After introducing inorganic materials into the tung oil, the position of exothermic peak of coating materials moved toward higher temperature. At the same coating percentage, for the urea coated with tung oil containing inorganic materials, the more the tung oil polymer content in coating materials, the better the ability of control release of the product.

Key words: tung oil coated urea coating materials, FTIR, DTA-TGA control release

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