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Application of DSC in the Thermal Stability Analysis of Cobalt Salt

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Abstract: The thermal stability of several cobalt salts, cobalt boroacylate, cobalt decanoate, cobalt stearate, which were used as adhesion promoter, was investigated by using differential scanning calorimetry (DSC), and the activation energy of thermal degradation was calculated by Ozawa equation and Kissinger equation. By either equation, the linear correlation coefficient was over 0.998, and the calculated result was about the same. The experimental results showed that cobalt boroacylate possessed the highest thermal stability, followed by cobalt decanoate, while cobalt stearate had the lowest thermal stability. This method was fast, accurate and efficient to determine the thermal stability of rubber additives.

Keywords: differential scanning calorimetry; cobalt salt adhesion promoter; thermal stability; activation energy



东南亚聚合物需求量持续增长

近年来全球经济持续低迷,但是东南亚国家联盟(ASEAN)所受的影响较小。在需求下降、价格不稳、产能限制和劳动力短缺的背景下,东南亚聚合物市场仍以年均9%的速度增长。各种双边贸易倡议如东盟自由贸易协定(AFTA)、东盟-韩国自由贸易协定(AKFTA)、东盟-中国大陆贸易协定(ACFTA)以及美国-东盟扩大经济合作倡议(3E)大大增加了东盟投资机会,将于2015年成立的东盟经济共同体(AEC)无疑也

会起促进作用。

目前,东南亚市场消费增长趋势乐观。新加坡、马来西亚、印度尼西亚、泰国和菲律宾经济状况和生产环境改善吸引了大量资金投入聚合物市场。据美国商业咨询机构弗罗斯特-沙利文公司统计,东南亚汽车和电器销售强劲,涡轮增压发动机和轻量级部件等有助于节能减排的产品需求量增大,拉动了工程聚合物需求量增长,到2018年东南亚聚合物市值有望达到32亿欧元,未来8年增幅将达到10%~15%。 朱永康