

邻苯二甲酸钙的热分解反应研究

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收稿日期 修回日期 网络版发布日期 接受日期

摘要 用热重和示差扫描量热分析法研究了-水合邻苯二甲酸钙的热分解过程。其热分解过程分为三个阶段: 在160~260℃脱水生成无水盐; 在460~780℃分解生成CaCO₃·C; 在780~900℃生成CaO和CO。用粉末X射线衍射、红外光谱和色-质联用分析法表征了各阶段热分解产物的组成和结构。讨论了热分解产物的自由基反应机理。

关键词 [钙化合物](#) [示差扫描量热法](#) [热分解](#) [邻苯二甲酸](#) [热重分析](#)

分类号 [0621](#)

The thermal decomposition of calcium phthalate

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Abstract The thermal decomposition of calcium phthalate monohydrate, CaC₈H₄O₄·H₂O, was studied by thermogravimetric analysis and differential scanning calorimetry. The products of thermal decomposition at various stages were characterized by the powder X-ray diffraction, infrared spectrometry and gas chromatography-mass spectrometry. The radical reactions in the pyrolytic process were discussed. The thermal decomposition of CaC₈H₄O₄·H₂O proceeds in three stages: It was dehydrated at 160~260℃, pyrolyzed to form CaCO₃·C at 460~780℃ and CaO at 780~900℃. Pyrolysis of CaC₈H₄O₄ at 500℃ gave (C₆H₅)₂CO and CO as the main volatile products, with a large amount of fluorenone, 9,10-anthraquinone, diphenylmethane, etc.

Key words [CALCIUM COMPOUNDS](#) [DIFFERENTIAL SCANNING CALORIMETRY](#) [THERMAL DECOMPOSITION](#) [O-BENZENEDICARBOXYLIC ACID](#) [THERMOGRAVIMETRY](#)

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