

Analysis of Medical Silicone Rubber by TGA-FTIR and Py-GC/MS

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Abstract: Two medical silicone rubber samples were analyzed by thermogravimetric analysis (TGA) – fourier transform infrared spectroscopy (FTIR) and pyrolysis (Py) – gas chromatography (GC) / mass spectrometry (MS). It was concluded that the main components of the two samples were methyl substituted polysiloxane by FTIR analysis. The fillers in one of the samples were barium sulfate and silica, while the filler in another sample was only silica. The pyrolysis products from both samples were cyclomethicones, and these main components were hexamethyl cyclotrisiloxane and octamethyl cyclotetrasiloxane. When the cracking temperature increased, larger molecules of cyclomethicones were found. TGA-FTIR and Py-GC/MS could provide the basis for the identification and recovery of medical silicone rubber.

Key words: medical silicone rubber; thermogravimetric analysis; infrared spectroscopy; pyrolysis; gas chromatography; mass spectrometry

欧利隆推出橡胶用炭黑新品种

中图分类号:TQ330.38⁺1 文献标志码:D

德国欧利隆工程炭公司推出4种新型橡胶用炭黑。

Ecorax S204和Ecorax S206是绿色轮胎用炭黑。Ecorax S204炭黑的比表面积极小,结构极高,可降低胎侧胶或胎面基部胶的滞后性能,从而降低轮胎滚动阻力。Ecorax S206炭黑用于内衬层,减小空气渗透量,以保持轮胎气压。为了满足轮胎制造商的需求,欧利隆还开发了具有窄聚集体粒度分布的特殊炭黑品种,以提高轮胎胶料的动态刚度和耐磨性能。

Sable 7800和Sable 3300炭黑是工业橡胶制品用超纯炭黑,其不可分散物质(NDM)残留量极低,适用于挤出橡胶制品和高品质模压橡胶制品,有助于提高橡胶制品的生产效率和产品质量,降低废品率。为了防止高品质挤出橡胶制品表面产生缺陷,采用新的ASTM D7724方法测试炭黑NDM比采用经典的筛余物测试法更好。

(郭隽奎)

2016—2021年全球炭黑市场市值

年均复合增长率为8.4%

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印度阿佐寺(Azoth)市场分析公司新近发布《2016—2021年全球炭黑市场的发展趋势、机遇与预测》研究报告。该报告对全球炭黑行业的现状、主要影响因素和发展趋势等进行了全面分析,提供了翔实的数据,并对全球炭黑市场和下游行业的增长点进行了预测。

受轮胎和橡胶工业需求激增拉动,预计2016—2021年全球炭黑市场市值年均复合增长率将达到8.4%。产品需求从大宗商品炭黑向专用特种炭黑的转变将对炭黑市场整体发展产生积极的影响。虽然大宗商品炭黑需求量在炭黑总需求量中仍占较大比例,但是预计未来特种炭黑需求量的增长速度更快。由于汽车和轮胎产业重心向亚洲转移,在全球炭黑市场中亚太地区所占的市场份额最大。

(郭隽奎)

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