3 结论

(1)粗促进剂M经碱溶和甲苯萃取提纯后,在氧化剂次氯酸钠氧化下,与叔丁胺反应生成促进剂TBBS的最佳反应条件为:叔丁胺与M-Na盐的物质的量比为1.03∶1,反应温度为40 ℃,此时反应收率在99%以上(按粗促进剂M折算)。

(2)萃取剂甲苯直接套用的最大次数为2次,多次套用会影响促进剂TBBS的质量;经蒸馏回收后的甲苯可以套用,但回收后需掺入50%的新甲苯,方可不影响产品质量。

(3)与原工艺相比,采用新工艺生产相同量的产品可节约人力、物力和原材料。缩短溶剂法促进剂M的生产流程,去掉促进剂M生产过程中的结晶、甩干、干燥、包装、装卸等工序,去掉促进剂TBBS车间装卸、打浆工序,减少对环境的污染,降低生产危险,提高促进剂TBBS产品质量,降低生产能耗,可管道运输,实现从促进剂M到下游产品生产过程中自动化控制,提高生产效率。

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Study on Accelerator TBBS Synthetic Process Using Crude Accelerator M Sodium Salt

SUN Fengjuan

(Kemai Chemical Co.,Ltd,Tianjin 300270,China)

Abstract:The new synthetic process of accelerator TBBS from the sodium salt of crude accelerator M was studied. Firstly, the crude accelerator M was purified by alkali solution and toluene extraction. Then accelerator TBBS was obtained by reaction between the sodium salt of accelerator M and tert-butylamine using sodium hypochlorite as oxidant. The optimal reaction conditions were as follows:the molar ratio of tert-butylamine to M sodium salt was 1.03∶1,and the reaction temperature was 40 ℃. Under these conditions, the reaction yield was over 99%(based on crude accelerator M). Extractant toluene could be directly applied for 2 times at most, and more repeated application would affect the quality of accelerator TBBS. Toluene recovered by distillation could be applied,but it needed 50% of new toluene so that the product quality was not affected. The new process had fewer working procedures and higher production efficiency.

Key words:crude accelerator M;accelerator TBBS;synthesis process

ASTM回收炭黑委员会批准首个回收炭黑标准

据美通社2019年3月5日报道,美国材料与试验协会(ASTM)回收炭黑委员会(D36)已批准了其第1个标准(D8178)。该新标准定义了回收炭黑行业的重要术语。

ASTM回收炭黑委员会成员Bill Cole表示,回收炭黑是一种相对较新、可持续的原材料,主要应用于橡胶、塑料和颜料等领域。回收炭黑行业是一个新兴行业,需要一套通用术语,以便企业有效地与用户沟通。D8178标准定义了独特的行业术语。随着回收炭黑相关标准的制定,行业专用术语将不断增加。

Bill Cole表示,回收炭黑产品不同于炭渣(char)产品。两者虽然都是由废旧橡胶(通常来自轮胎)热降解产生的,但它们的性能存在显著差异。通用术语可为明确区分回收炭黑和炭渣的价值奠定坚实的基础。

除了定义术语外,新标准附录还收录了由其他委员会(包括1956年成立的炭黑委员会)制定的ASTM国际标准,这些标准目前被认可在回收炭黑行业中使用。

(安 琪)