

3 结论

(1) 淀粉可进行表面醚化和酯化疏水改性。

(2) 改性淀粉替代部分炭黑对胶料物理性能有一定影响, 采用醚酯淀粉替代部分炭黑的胶料物理性能明显优于采用轻质碳酸钙替代部分炭黑的胶料, 与白炭黑替代部分炭黑的胶料物理性能接近。

(3) 采用改性淀粉与偶联剂KH550和KH570配合的胶料物理性能较好。

(4) 轮胎胎面胶中用改性淀粉替代部分炭黑可以明显提高胶料的耐屈挠性能并降低生热, 改性淀粉的用量为8~10份较适宜。

(5) 玉米和薯类淀粉作为廉价易得的原料, 可用于制备橡胶功能助剂, 具有很大的研究潜力。

Modification of Starch and Its Application in the Rubber Compounds

Fang Qinghong

(Shenyang University of Chemical Technology, Shenyang 110142, China)

Abstract: In this study, the starch was modified by etherification and esterification methods, and the modified starch was used to replace part of the carbon black in the rubber compounds and the physical properties of the rubber compounds were compared with that by using precipitated calcium carbonate (PCC) or silica to replace part of the carbon black. It was found the physical properties of the rubber compounds were affected by adding modified starch. However, they were much better than those with PCC, and similar to those with silica. With coupling agents KH550 and KH570, the physical properties of the rubber compounds with modified starch were improved. It was also found that by using 8~10 phr of modified starch in the tire tread compound, the flex resistance was significantly improved and the heat buildup was reduced.

Keywords: starch; modification; etherification; esterification; precipitated calcium carbonate; silica

信息·资讯

乌海宝化万辰一期4万t炭黑项目开工

日前, 乌海宝化万辰煤化工公司煤焦油深加工一体化项目一期工程在乌海千里山工业园区开工建设。一期工程计划建设年产30万t煤焦油深加工和年产4万t炭黑装置, 投资额为5亿元。

乌海宝化万辰煤化工公司是由上海宝钢化

工公司和内蒙古黄河能源科技集团共同出资组建, 于2013年3月注册成立的。该煤焦油深加工一体化项目总投资约19.7亿元, 包括年产60万t煤焦油深加工、20万t炭黑、10万t苯加氢及5万t超高功率电极等项目。

鲁迪