Characterization and Properties of Organic Silicon Modified Vegetable Oil Fatliquor

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Characterization and Properties of Organic Silicon Modified Vegetable Oil Fatliquor

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Introduction

Recently, many researchers have paid much attention to the exceptional performance of organic silicon materials [1-3]. Organic silicon modified leather chemical has become a hot spot of research. Possessing lower surface tension and presenting better hydrophobic property, organosilicon compounds can give leather the waterproof property, improve the wearable resistance, softness and smoothness of leather [4-6].Fatliquor is one of the leather chemicals with the largest use in leather industry, and has extremely important impact on the leather performance. It can penetrate into the collagen fibers, thus achieving at the same time lubrication and plasticization. The fatliquor enhances molecular chain segment mobility, thus imparting softness, waterproofness, sunproof property, moisturization and flexibility to leather. There are more than 200 kinds of fatliquors at home and abroad, but the vegetable oil fatliquors with outstanding performance are few. Jiang Hua et al[7] performed the transesterification of the rapeseed oil with methanol, and then grafted organic silicon monomer(D4) onto them, and finally got the silicon-modified rapeseed oil leather fatliquor by further sulfation. The fatliquor emulsion is stable, contains a variety of reactive groups, combines well with leather, and has good waterproof capability as well. In this paper, the vegetable oil fatliquor (VF) was prepared by using low-cost rapeseed oil and diethyl amine, and then introducing –COOH via acrylic acid. The organic silicon modified fatliquor (SVF) was prepared by using polyether silicon modified VF fatliquor.