

TO CATEGORIES 

**1.400.000** PAGES OF RESEARCH

MONTHLY  
**1.200.000**  
PAGE VIEWS

OVER  
**300.000**  
VISTORS PER MONTH

**new** E-BOOKS 

FULLTEXT SEARCH

[GO!](#)

NEW: [Advanced Search](#)

## Periodicals:

### MSF

> Materials Science Forum

### KEM

> Key Engineering Materials

### SSP

> Solid State Phenomena

### DDF

> Defect and Diffusion Forum

### AMM

> Applied Mechanics and Materials

### AMR

> Advanced Materials Research

### AST

> Advances in Science and Technology

### JNanoR

> Journal of Nano Research

### JBBTE

> Journal of Biomimetics,

### Preparation, Characterization and Application of Siloxane Succinate Fatliquor

**Journal** [Advanced Materials Research](#) (Volumes 233 - 235)

**Volume** [Fundamental of Chemical Engineering](#)

**Edited by** Zhong Cao, Lixian Sun, Xueqiang Cao, Yinghe He

**Pages** 292-297

**DOI** 10.4028/www.scientific.net/AMR.233-235.292

**Citation** Tao Tao Qiang et al., 2011, Advanced Materials Research, 233-235, 292

**Online since** May, 2011

**Authors** [Tao Tao Qiang](#), [Xiang Luo](#), [Long Fang Ren](#), [Xue Chuan Wang](#), [Bao Yuan He](#)

**Keywords** [Characterization](#), [Fatliquor](#), [Performance](#), [Preparation](#), [Siloxane Succinate](#)

**Abstract** The silicone succinate surfactant (PMPS) was synthesized by ring-opening reaction using polyether alcohol amine modified polysiloxane (PAPS) with maleic anhydride (MA) as the raw materials, and p-toluenesulfonic acid (PTSA) was used as the catalyst. Sulfated castor oil and sulfated rapeseed oil were combined with PMPS to prepare a new leather fatliquor (PMPSF) composed mainly of PMPS. The molecular structure of PMPS was characterized by FTIR spectra; the thermal properties of PMPS was characterized and analyzed by TGA. PMPSF was used in sheepskin wet blue leather and compared with oxidative sulfited vegetable oils (L-3) and RF-1 fatliquor; the waterproof and mechanical properties of the leather were measured. The results show that the thermal decomposition temperature of PMPS is 192.8° C. Fatliquor PMPSF provides a good level-dyeing property, the leather oiled by it has good flexibility and fullness, the waterproofness and mechanical properties of leather are also good. Moreover, compared with the leather fatliquored by L-3, the thickening rate of leather oiled by PMPSF reaches 13.7%.

**Full Paper**  [Get the full paper by clicking here](#)

### First page example



## Preparation, Characterization and Application of Siloxane Succinate

### Fatliquor

Taotao Qiang<sup>a</sup>, Xiang Luo<sup>b</sup>, Longfang Ren<sup>c</sup>, Xuechuan Wang<sup>d,\*</sup>, Baoyuan He<sup>e</sup>

Key Laboratory of Chemistry and Technology for Light Chemical Industry, Ministry of Education,  
Shaanxi University of Science and Technology,

Xi'an Shaanxi, P. R. China 710021

<sup>a</sup>qiangtaotao515@163.com, <sup>b</sup>luoxiang361@126.com, <sup>c</sup>renlf1010@163.com, <sup>d</sup>wxc-mail@163.com,  
<sup>e</sup>hebaoyuan@163.com

**Keywords:** Siloxane succinate, Fatliquor, Preparation, Characterization, Performance

**Abstract.** The silicone succinate surfactant (PMPS) was synthesized by ring-opening reaction using polyether alcohol amine modified polysiloxane (PAPS) with maleic anhydride (MA) as the raw materials, and p-toluenesulfonic acid (PTSA) was used as the catalyst. Sulfated castor oil and sulfated rapeseed oil were combined with PMPS to prepare a new leather fatliquor (PMPSF) composed mainly of PMPS. The molecular structure of PMPS was characterized by FTIR spectra; the thermal properties of PMPS was characterized and analyzed by TGA. PMPSF was used in sheepskin wet blue leather and compared with oxidative sulfited vegetable oils (L-3) and RF-1 fatliquor; the waterproof and mechanical properties of the leather were measured. The results show that the thermal decomposition temperature of PMPS is 192.8°C. Fatliquor PMPSF provides a good level-dyeing property, the leather oiled by it has good flexibility and fullness, the waterproofness and mechanical properties of leather are also good. Moreover, compared with the leather fatliquored by L-3, the thickening rate of leather oiled by PMPSF reaches 13.7%.

#### Introduction

Silicone surfactants have many excellent properties, such as stability to high and low temperature, good weather resistance and excellent dielectric properties, very low glass transition temperature, strong thermal stability, lower surface tension and surface energy, good emulsification and compatibility, chemical and physical inertia, etc [1]. As a kind of organosilicon material, silicone surfactants has already been used in various industrial fields since 1960s. However, the large-scale, rapid and comprehensive development of the silicone surfactants began in 1980s. Silicone surfactants, a class of chemicals characterized by some particularly properties unlike common hydrocarbon surfactants with a different molecular structure, have attracted much attention in recently years [2,3].

Succinate is an important fine chemical which is first commercialized after World War II, and is usually sulfonated to prepare sulfo-succinate to introduce many properties, such as good decontamination, foaming, dispersion, emulsification and wetting characteristics, etc. It has been used in leather industry since 1990s [4-7]. As the remarkable designable ability of molecules and simple synthesis technology, it has a wide prospects of application [8].

This paper reported the preparation, characterization and performance of the silicone surfactant (PMPS) and its application in the leather industry. First, the silicone succinate (PMPS) was synthesized by maleic anhydride (MA) and polyether alcohol amine modified polysiloxane (PAPS). Then, the molecular structure of the raw material and PMPS were characterized and analyzed by

\* Author for correspondence: e-mail: [wxc-mail@163.com](mailto:wxc-mail@163.com)

#### CONFERENCE

**GO!**

11/16/2012 - 11/18/2012

11/13/2012 - 11/15/2012

The International Conference on Advanced Eng

10/19/2012 - 10/21/2012

2012 International Conference on Vibration, Str

[more...](#)