Study on Effect of Gelatin to Coordination Between Organic Acid and Chromium(Ⅲ)

Huilin Tian, Lihong Fu*, Wei Kuang, Xi'an Wang

Shandong Institute of Light Industry, Jinan 250353, P.R. China
*Corresponding author, Phone: +86 –(0)531- 86529116, Fax: +86 0531 86529116,
E-mail: fulh12@yahoo.com.cn

Abstract: The pollution of chromium salt has received increasing attention, so how to make full use of solid chrome wastes comes into focus recently. Collagen fibers account for over 90 percent of solid chrome shavings, and the dechroming method varies according to its application. The extraction of silky leather fibers is less correlated with destruction of collagen fibers. The efficiency of dechroming and dispersity of fibers by organic acid are high, so it is to the benefit of preparing silky collagen fiber. Researches on the influence of hydrolyzed collagen on the ability of coordination between organic acid and chromium(Ⅲ) contribute to the rational choice of chromium from the organic acids used in the dechroming process. Taken gelatin as simulacrum of hydrolyzed collagen, the impact of various acids such as oxalic acid, malonic acid , succinic acid, lactic acid, tartaric acid and citric acid on the coordination of chrome complex and collagen-chrome complex was studied with acidometer, conductivity meter and ultraviolet-visible spectrophotometer. The results showed that complexing ability differs with respect to the structure of organic acid. Gelatin has affected on the coordination stability of chromium(Ⅲ) and organic acid, the influence lessenes with time expand and is stable when let stand for 30 hours.

Key words: organic acid; carboxyl group; hydroxyl group; gelatin; chromium complex