Characterization of P(Hema-Gma)-Ida Membrane to Adsorbing Leather Dye

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***Abstract*—Different chemical substances and too much water are used during leather production. Therefore, the waste water load of the leather industry is harmful to the environment. One of the pollution source is the production of leather coloring process is a further need to focus on the removal of dye waste waters subject. These water-soluble dyes have a small organic molecular size. Besides the environmental hazards that these dyes cannot be underestimated, they also have harmful effects on human health.**

In this study, poly (hydroxyethyl methacrylate-glycidyl methacrylate) p (HEMA-GMA) hydrogel membranes were synthesized by UV polymerization method. The hydrogel synthesized is modified with imino diacetic acid (IDA) and then chelated with trivalent chromium ions. The chelating capacity of the membranes were determined according to the time, pH and concentration parameters. Dynamic swelling test, elemental analysis, ninhydrin analysis and adsorption, desorption and reusability performances of membranes were also determined. As a result of the analyzes, it was understood that the hydrogel membrane had high adsorption capacity. The adsorption capacity of the p (HEMA-GMA) -IDA-Cr (III) hydrogel membrane did not decrease even after 5 desorption. At the end of the fifth cycle, the membrane was found to have a dye-binding capacity of about 92%. According to these results, the reusable property of the membrane also makes it cost effective as well as effective adsorption.

***Keywords*—Adsorption, desorption, dye, leather, p(HEMA-GMA)-IDA**

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