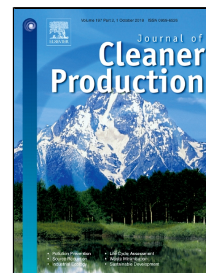


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Mechanism and Effect of Hydroxyl-terminated Dendrimer as Excellent Chrome Exhausted Agent
for **tanning** of Pickled Pelt

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Abstract

A combination chrome tanning technology which endows leather high chrome exhaustion and thermal property based on hydroxyl-terminated dendrimer (HTD) is reported. The chrome concentration in effluent, denaturation temperature (T_d), enthalpy (ΔH), thermal degradation active energy (E_a), crosslinking degree of wet-blue leathers are determined by inductively coupled plasma atomic emission spectroscopy (ICP-AES), differential scanning calorimetry (DSC), thermal gravimetry analysis (TG-DTG), and X-ray diffraction (XRD), respectively. The element (especially **chromium**) content and distribution of wet-blue leather are also obtained by scanning electron microscopy- energy dispersive spectrometer (SEM-EDS). The results show that the chrome uptake, T_d , ΔH and E_a of wet-blue leather tanned with HTD and basic chrome sulphate (HTD-Cr) can reach 94.1%, 117.4 °C and 432.2 J/g, and 153.1 KJ/mol much higher than conventional chrome tanning which is 66.1%, 112.5 °C and 129.2 J/g and 147.2 KJ/mol, respectively. It is because HTD could act as excellent masking agent with good alkaline stability, which slows down the basifying process and promotes chrome penetration towards central of wet-blue leather, resulting in evenly

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