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
Production of Dissolving Grade Pulp from Poplar Wood by Ethanol-Water
Process

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Abstract: The possibilities of dissolving grade pulp production from poplar by an ethanol-water process were investigated. The effects of ethanol ratio, cooking temperature and acid catalyst ratio on unbleached, bleached and alkali-purified pulps were studied. It was seen that catalyst ratios exceeding 0.01% caused serious yield and viscosity losses. The results showed that with the catalyst ratio to pulping liquor exceeding 0.01%, pulp yield and viscosity were reduced to an unacceptable level. The best pulping result was obtained at 40% ethanol consistency, 180 °C pulping temperature and 150 min reaction time without the addition of acid catalyst to the pulping liquor. After bleaching and alkali purification, the pulp obtained had a 30.7% yield, 95.8% α -cellulose content, 677 cm³/g viscosity, 83% ISO brightness, 1.80% residual pentosans, 0.33% copper number and 0.14% ash content. However, brightness was increased to 88.5% ISO level with the application of a multistage bleaching (CEHDED) sequence instead of chlorite bleaching without serious losses in yield or α -cellulose content at normal viscosity levels. It is concluded that these pulps meet dissolving grade pulp quality requirements.

Key Words: Poplar, organosolv pulping, ethanol-water pulping, dissolving pulp, alpha-cellulose

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