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Effect of Pulping Conditions on the ECF Bleachability of *Eucalyptus globulus* Kraft Pulps

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Ind. Eng. Chem. Res., **2002**, *41* (24), pp 6200–6206

DOI: 10.1021/ie020263x

Publication Date (Web): October 26, 2002

Abstract

The effect of Eucalyptus globulus wood kraft pulping conditions on the chlorine dioxide consumption in elemental chlorine free bleaching of pulps was investigated. When the pulping is extended (kappa number decreases), the bleachability [as (OXE/ton)/kappa number] is reduced, suggesting that residual lignin and other oxidizable unsaturated structures in pulp become less reactive as their content in the pulp decreases. For the same unbleached pulp kappa number, the increase in active alkali and sulfidity used in pulping improves bleachability, whereas the pulping temperature (150−170 °C) does not affect the bleaching response. The increase in liquor-to-wood ratio has a detrimental effect on the bleachability. No clear correlation could be established between unbleached pulp brightness and its bleaching response. Overall, the results obtained show a good correlation between the integral of the relative reaction rate constant (H factor) used in the pulping and pulp bleachability, with a low H factor being beneficial to the bleaching response of the pulp.