

State-of-the-art Studies of Chemical Changes in the Non-Fibrous Pulping Black Liquors During Storage

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ABSTRACT

In this research emphasis have been made on the problems encountered by storage of the straw based kraft black liquors. There is considerable decrease in pH of the black liquor with aging in the storage tanks. Active, effective and total alkali contents also decrease with time. These changes add various problems in further treatment of this aged black liquor. In fact black liquor is stored at high temperatures, normally at 80-90°C. At this temperature degradation of the organic components of the black liquor occurs. Normally carboxylic acids are formed from organic components degradation, which further degrade into carbon dioxide and sulfur dioxide. These gases neutralize available alkali contents within the black liquor and express their effect in reduction of pH. This black liquor is unfit for the set-parameters of the evaporators and hence causes problems in its treatment and recovery.

Key words:

Kraft pulping, thermal aging, degradation, available alkali and effective alkali.