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A RAPID METHOD OF DETERMINING THE ACTIVE STRENGTH OF SULPHATE COOKING LIQUOR

Experiments at the Forest Products Laboratory, Madison, Wisconsin, on sulphate cooking liquor indicate that the action of NaOH is substantially twice as drastic as that of Na_2S between the ratios of 1 part NaOH to 1 part Na_2S and 4 parts NaOH to 1 part Na_2S.

The active strength of the cooking solution in terms of NaOH is expressed by the equation

$$S = M + N/2$$

where S is the active strength of the solution, M the concentration of NaOH, and N the concentration of Na_2S.

A rapid method of determining the strength of a cooking solution is as follows:-

Add 10 cc of cooking liquor to about 50 cc of water in a porcelain dish. Add 10 cc of a saturated solution of $BaCl_2$. Stir vigorously, and titrate with normal hydrochloric acid to phenolphthalein end point. The number of cubic centimeters is directly proportional to the strength.

This method is the most convenient for use in the digester house, because of its simplicity and the fact that it does not involve a consideration of the ratio of NaOH to Na_2S.