



Application Note AN-PAN-1004

ABC Titration: Analysis of alkali, carbonate, hydroxide, and sulfide in pulping liquors

The breakdown process from solid wood to paper involves quite a number of preparative steps. The main process which converts wood into pulp is named the **Kraft process**, which utilizes white liquor (a mixture of sodium hydroxide «NaOH» and sodium sulfide «Na₂S») to break down the lignin and cellulose linkages.

In the Kraft pulping process, the wood chips are

saturated with white liquor and cooked at high temperatures in pressurized digesters, forming a liquid stream consisting of pulp and black liquor. After a washing step, the resulting pulp is sieved, washed, and bleached to produce paper; and the now weak black liquor continues to the chemical recovery loop into the evaporators.

After passing through multiple evaporators, the now

REMARKS

Additionally, the **sulfate concentration** can be measured online with thermometric titration in the same instrument. In combination with the ABC titration, this gives a perfect indication for the **degree of reduction** and information about the recovery

boiler efficiency, which acts as a reactor. The thermometric titration gives a faster response and avoids the use of toxic chemicals. Other online applications in the pulp and paper industry are during the bleaching process.

BENEFITS FOR ONLINE TITRATION IN PROCESS

- Increased causticizing efficiency
- Reduced TTA and EA variability
- Greater and faster return on investment
- Safe working environment and automated sampling

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