Analysis of Total Chloride in Kraft Liquors

RAW GREEN LIQUOR

Total chloride concentration provides information on fouling propensity in the recovery boiler.

CLARIFIED GREEN LIQUOR

Total chloride acts as deadload in the liquor cycle. Information on chloride content could lead to deadload reduction, resulting in maximum achievable TTA.

ELECTROSTATIC PRECIPITATOR

Liquor chloride content can provide valuable information relating to the operations of the ESP.

FITNIR

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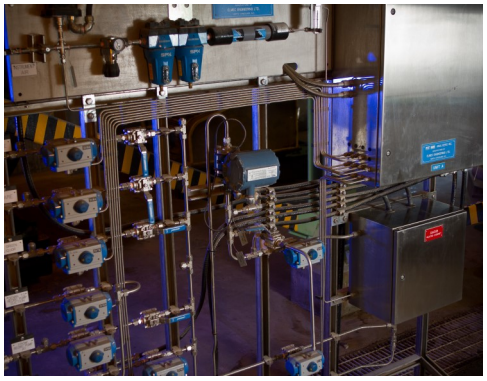

- ***Online measurements of Kraft liquor properties***
- ***Complete liquor compositions including EA, AA, TTA, Sulfidity, Sulfate, %RE, %CE***
- ***Chloride measurements calculated simultaneously***
- ***Proven pay back for recaust control***

The measurement of true liquor properties in the Kraft liquor cycle has been a challenge for the pulp manufacturing industry. Much of the previous generation of analysis relies on techniques such as density, conductivity and manual titrations. Over the past decade, the advancement of optical analyzers using techniques such as spectroscopy, particularly Fourier-Transform Near Infrared (FT-NIR), have been successfully applied to provide complete liquor composition measurements. As the technology matures, more applications are being developed.

In this application note, we highlight the ability of FT-NIR to measure total chloride in green and white liquors.

High levels of chloride in the liquor cycle can have a detrimental effect on a pulp mill's recovery cycle operations.

Excessive chloride can cause fouling of recovery boiler superheaters due to a lower melting point, thus affecting heat transfer. Chloride accumulation can also impact overall TTA (Total Titratable Alkali) strength, as it is part of the deadload component in the liquor cycle. Excess chloride is often purged at the electrostatic precipitator (ESP) in the form of ash removal.

Chloride measurements can facilitate efficient operations of the electrostatic precipitator and avoid potential fouling issues.