

Analysis of White, Black and Green Liquors for Pulping

WHITE LIQUOR ABCs

The measurement of WL ABCs provides information on the extent of causticizing throughout the causticizers and final WL strength for digester EA-to-wood charge.

BLACK LIQUOR REA

The ability to measure Residual Effective Alkali (REA) provides fast feedback information on EA consumption and delignification rate. Knowing solids content and lignin concentrations further help with controlling digester operation.

GREEN LIQUOR ABCs

Complete ABC measurements of GL, including sulfate, provide critical information for dissolving tank control and slaker control.

FITNIR

www.fitnir.com
604-221-2230



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.

Based on the same technology as FITNIR Online, FITNIR Benchtop provides the identical liquor properties measurements by using simple disposable vials. Using water as the blank, liquor is analyzed within a minute without requiring any sample preparation.

As a platform technology, the same device can be applied to measure white liquor (WL), black liquor (BL), and green liquor (GL) by simply selecting a liquor type.

- > **Simultaneous measurements of complete ABCs for WL and GL**
- > **Measurements of causticizer ABCs for slaker and CE control**
- > **Eliminates the need for standard ABC titrations**
- > **Provides reduction efficiency**

Typical measurement performance is provided in the table below.

GL & WL	Measured Range	Accuracy
EA	4 – 120 g/L Na ₂ O	± 0.5 g/L
AA	6 – 120 g/L	± 0.8
TTA	10 – 150 g/L	± 1.2
Na ₂ CO ₃	4 – 100 g/L	± 1.0
Na ₂ S	2 – 50 g/L	± 1.0
Na ₂ SO ₄	1 – 20 g/L	± 0.5
Na ₂ S ₂ O ₃	1 – 15 g/L	± 0.5

BL	Measured Range	Accuracy
REA	2 – 50 g/L Na ₂ O	± 0.5 g/L
Total Solids	0 – 25 %	± 0.75 %
Organic Solids	0 – 25 %	± 1.0 %

FITNIR Analyzers continues to develop additional applications.