

BORON IN GLASS DETERMINATIONS USING WD XRF

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Determination of Boron in Glass is an application within the Glass Industry, which increasingly is performed by WD XRF.

Difficulties arise from the availability and suitability of reference material, the preparation to the measurement.

This short primer will illustrate influence of different surface finishes on the bias and repeatability of the results as well as illustrate how a new analyzer crystal (XS-B) compares to the “traditional” OVONIX™ based one using the same system.

Regardless of crystal it will be shown that due to the resolution of around 200Angstrom many direct and indirect interference will have to be adjusted for. Matrix Correction Algorithms pose another issue due to the underlying Fundamental Parameters, which do not contain updated data on Boron.

With an application in place, the analyst is faced with the QC and Drift Correction approach, which poses difficulties due to the nature of analyzing a surface element. Despite the work involved in establishing a Boron calibration, the payback in terms of usability, sustainability as well as repeatability to ICP based is more than quantifiable.