

Alloy Processing Using Barcode Scanners and Cloud Technology

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X-ray fluorescence (XRF) is established as an effective nondestructive analytical technique used to perform rapid compositional quality control in metal manufacturing. Recent demands for rigorous real-time tracking and simultaneous verification of multiple alloy products in manufacturing facilities present a unique challenge to XRF use. However, XRF analyzers can provide more than simple analytical performance to meet these demands. With onboard cameras, XRF devices can scan barcodes prior to sample analysis, working as a keyboard widget to store associated sample information in note fields. This enables the operator to save time and eliminates the risk of transcription errors from manual entry. Barcode scanning can be further expanded by connecting XRF analyzers to the Evident Connect™ Cloud service. With Evident Connect, alloy grades can be assigned specific product barcodes that, when scanned, will establish grade-specific pass/fail criteria on the XRF analyzer. For each new test, new barcodes with different criteria can be scanned, directly tying results to various product information with minimal operator input. Evident Connect enables barcodes and alloy grade libraries to be updated in real-time on the analyzer. Results can then be immediately uploaded to a central cloud storage location, providing robust quality control and assurance data for pass/fail comparisons. Using this cloud-connected system, managers can see results gathered by operators and deploy instrument and task-specific criteria to each operator's instrument directly. This flexibility enables XRF analyzers to streamline alloy quality control and helps ensure increased process visibility from start to finish.