

## **APPLICATIONS OF CHEMICAL ADDITION MONITORING AND FLOW CONTROL IN SUGAR REFINING**

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Accurately measuring chemical additions to process streams in a sugar refinery has an impact to process performance, chemical cost control, and regulatory compliance. Until recently, conventional methods were typically limited to spot checks with calibration cylinders or other means of draw down measurement. Recently developed thermister technology has continued to mature and is now a reliable and cost effective alternative to historical standards, which provides far greater accuracy and capability for data management. Automated chemical monitoring systems are currently implemented at three major beet sugar refiners. This technology allows real time monitoring of process defoamer, or other process chemical addition, which provides the operator immediate information to optimize chemical usage. Data collected is exported to alarms, trended, or integrated to multiple output signals. Further development of this technology has included an in-plant pilot system with sensors measuring entrained air, from which data is then processed through a PLC, and converted to an output signal that controls chemical addition. This paper will document the system(s) capability to date and describe the effectiveness of practical applications that are currently in place, as well as forward opportunities and developments with the technology, as it relates to cost management and regulatory compliance the sugar industry.