

Micro Motion® Flowmeters Replace Turbine Meters In TDI Measurement Application

RESULTS

- Direct mass flow measurement eliminates calculations
- More flexibility in batch sizes and producing varied products
- Cost savings due to eliminated process steps



APPLICATION

A chemical company combines toluene diisocyanate (TDI) and other ingredients to make resins. The TDI is pumped from an outdoor storage tank to a reactor in small quantities, as required. The temperature of the storage tank is maintained and measured using a temperature transmitter.

A turbine meter measured the volumetric flow rate of the TDI. Using specific gravity tables and the storage tank temperature indication, the specific gravity of the TDI was estimated. Inferred mass flow was then calculated from the volumetric flow measurement and estimated specific gravity and documented on a batch report.

CHALLENGE

The chemical company's clients required a variety of batch sizes and, therefore, varying amounts of TDI. The turbine meters were less accurate at lower flow rates, resulting in corresponding inaccuracies in the calculated mass flow. Since the measurements were also affected by conversion errors, operators found themselves operating by trial and error. The result was varying product quality, which proved to be both frustrating and costly.

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Micro Motion meters eliminated additional equipment and conversion errors.



For more information:
www.EmersonProcess.com/solutions/chemical
www.micromotion.com



SOLUTION

The chemical company chose Micro Motion® Coriolis flowmeters to replace its turbine meters. Coriolis meters measure mass flow directly, eliminating the need for additional equipment and conversion errors, and simplifying the process. The Micro Motion meters are far more accurate than the turbine meters, and measure accurately over a wider flow range. The Micro Motion meters also act as a flow controller for other products that require the addition of TDI.

Product consistency has improved, the company can easily change batch sizes and end products, and has lowered operating costs and increased its profits.

