

Leading Basic and Specialty Chemicals Company Uses Micro Motion Coriolis Solution to Accurately Measure Hydro Chloric Acid Concentration

Results

- Eliminated frequent cleaning and reduced downtime and maintenance of Process Refractometers
- Estimated annual savings of \$110,000 USD with Micro Motion™ Tantalum Series Meter
- Enhanced personnel safety with Fit-and-Forget Tantalum Series Coriolis Solution



Application

Concentration Measurement of HCL in the production line.

Customer

Global producer of basic and specialty chemicals.

Challenge

A leading chemical company uses Process Refractometers for measurement of HCL concentration at their production lines in Thailand plant. HCL concentration measurement is critical because it is produced with concentration between 0% to 38% kg HCL/Kg. If the HCL concentration is very low (less than 2%), it will behave similarly to liquid water. When the HCL concentration is more than 40%, the boiling point will decrease and HCL tends to evaporate faster. As a result, customer needs to exercise more precaution when storing and transporting HCL with concentration that are higher than 40% (HCL with 40% concentration or more is also called as “fuming” hydrochloric acid because of its high evaporation rate)

Though the Process Refractometers provided accurate readings, the chemical company faced challenges with the Process Refractometers as they require frequent cleaning and maintenance. The Process Refractometers had to be taken out and cleaned for at least an hour in a month. With the plant shut down, it may result in production loss and downtime associated with the frequent cleaning and maintenance.

Solutions

The chemical company evaluated different technologies including Micro Motion Tantalum Series Coriolis Meter for HCL concentration measurement. TA010T (1/10 Inch) Tantalum series meters proved to be an accurate and maintenance free solution for HCL concentration measurement. Some of the significant advantages of TA Series Coriolis Meters are as followed :

“TA Series Coriolis meters helped to eliminate the downtime associated with cleaning and maintenance. It is an accurate and a completely maintenance free solution.”

Maintenance Manager



A Tantalum, Coriolis flow meter that delivers highly reliable, repeatable and robust measurement for corrosive service applications.

- Achieve highly accurate mass volume flow and density measurement in challenging applications
- Available in seven different line sizes and offered solely with Micro Motion 5700 9-wire transmitter
- Improve measurement and tracking with extensive process and meter diagnostics with on-board historian and logging
- Gain real-time and in-process measurement integrity assurance with Smart Meter Verification™

Micro Motion Tantalum meters eliminated the need for manual sampling of percent concentration measurement for corrosive acids, ensured greater efficiency and cost control while keeping personnel safe. Tantalum series meters turned out to be fit and forget solution for challenging and corrosive acid concentration measurement.

Estimated average monthly loss due to frequent cleaning, maintenance of patent refractometers and downtime of production are about \$9000 to \$9500 USD. With Micro Motion Tantalum Series meter, it helped the chemical company to save at least \$110,000 USD per year

Resources

Emerson Automation Solutions Industries

[Emerson.com/Chemical](https://www.emerson.com/Chemical)

Micro Motion TA-Series Coriolis Flow and Density Meters

[Emerson.com/Ta-Series](https://www.emerson.com/Ta-Series)

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