

No clogging issues with Micro Motion Direct Insertion Fork Density Meter

RESULTS

- More accurate than previous method, (2% accuracy) and repeatability measurement
- No need for bypass pipe due to no clogging issues
- Eliminated vibration issues
- No need for weekly purging resulting in reduced maintenance



APPLICATION

Solvay Belgium, an international chemical group located in Jemeppe/s/Sambre, measures the solid fraction in oversaturated Brine (NaCl) in a multi-stage evaporation process. The solid fraction percent concentration measurement is related to the varying actual density and actual temperature.

CHALLENGE

During the brining process a slightly curved coriolis meter clogged frequently and was susceptible to pipeline vibrations. To clean the clogging coriolis meter, a back flush system and bypass had to be installed.

This was an unreliable maintenance intensive solution.

SOLUTION

Solvay Belgium chose to install a Micro Motion® Direct Insertion Fork Density Meter to measure the solid fraction in oversaturated brine. This Micro Motion vibrating fork density meter has Hastelloy-C22 wetted parts with PFA coated tines, which helps prevent coating and clogging. The meter replaced a slightly curved dual tube coriolis meter that continually got clogged, which led to the company having to “backflush” the system, slowing the process.

Some other benefits include fewer operator errors, reduced analytical costs, higher process stability, better production yield and greater product quality.

The Micro Motion density vibrating fork transmitter has an embedded percent concentration software (3D model) which enables to output directly percent concentration without the need to set up algorithms in a DCS system (See Figure 2).

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Figure 1. Micro Motion® Direct Insertion Fork Density Meter installed at company location.



For more information:
www.MicroMotion.com/chemical
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This percent concentration software was included in the Micro Motion standard transmitter with customer concentration data thanks to the density related isotherms (See Figure 3).

The fork was installed at a 25 degree incline (See Figure 1), which allows the meter to automatically drain solids, purge trapped air and flush solids if they get trapped in the pipe shroud at low flow conditions. (See MC-001976, Slurry Installations - Best Practices for further details.)

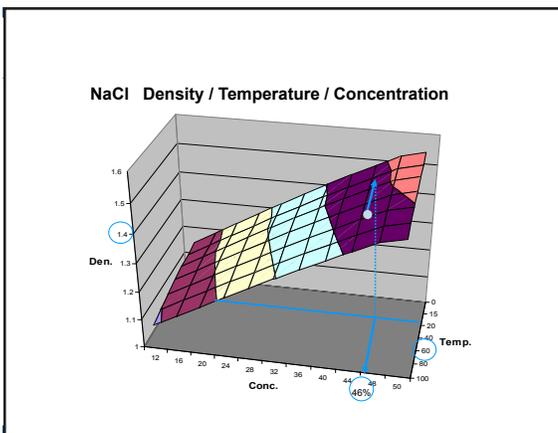


Figure 2. This 3D model is created via ProLink III using customer product related data.

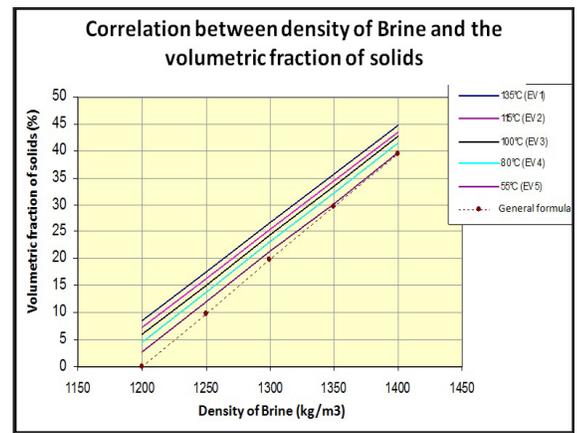


Figure 3. Isotherms correlating %solids concentration with the on-line measured density.

