

Effective phase separation of whey, water and CIP detergent

Detect phase separation and product loss with optical absorption sensors installed inline

Benefits at a glance

- Each CIP cycle was reduced by 15 minutes
- The plant used 32% less CIP chemicals. The customer saved over \$5000 in the first 3 months on chemicals alone
- Cost savings from reduced energy, water usage and waste water production
- Increased equipment availability for processing by more than one hour per day
- After implementation, drum usage went from 3 to 4 drums to 2 to 3 drums per month



A cheese plant was able to detect phase separation and reduce product loss in the Clean-in-Place (CIP) process with the accurate and quick response of Endress+Hauser's optical absorption sensor installed inline. The plant was also able to reduce waste and shorten rinse cycles by using conductive technologies. Operators determine when the pre-rinse is complete with information from the optical sensor, instead of relying on guess-work and timing.

The Challenge Determining phase separation between whey, water and CIP detergent in a cheese plant's CIP operations is essential to ensuring efficient cleaning and removal of whey from the system. This becomes more complicated with multiple CIP operations performed per day, as was the case for a cheese plant that performed five CIP operations/day. Chemical costs = over \$1700/30-gallon drum and the plant used 3-4 drums/month.

Our solution OUSAF11 optical phase separation sensor

By installing an Endress+Hauser OUSAF11 optical phase separation sensor using visible and near-infrared wavelengths of light, operators are able to determine when pre-rinse and CIP cycles are complete. The sensor also helps reduce product loss by monitoring interface levels, suspended solids and turbidity.

Solution details OUSAF11 installed inline to measure phase separation between whey, water and CIP detergent.

- Hygienic and stands up to CIP processes
- The OUSAF11 sensor can be operated continuously up to 194°F (90°C), and up to 266°F for up to two hours, allowing it to be used in hot CIP processes
- Can be calibrated without having to remove sensor from process line



Turbidity measurement for phase separation applications: OUSAF11 optical absorption sensor (left) and Liquiline CM44P transmitter (right).

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