



Control of Cleaning In Place

- How to quickly adjust cleaning-in-place cycles and guarantee optimum cleaning at each stage?
- Diagnosing the operating status and efficiency of the production line.

Advantages

- **Optimized production time:**
precise detection and optimization of each CIP phase
- **Continuous monitoring of liquid composition:**
for reliable, reproducible supervision of Cleaning In Place (CIP) and Sterilization In Place (SIP) processes
- **Aseptic safety:**
no internal elements inside the measuring tube
- **Reduced environmental impact:**
helps to minimize water and detergent consumption
- **Simplified maintenance:**
minimum cleaning, no sensor calibration needed
- **Parameterizable alerts:**
to indicate any variations in the composition.

Goals:

Cleaning in place of equipment is one of the most energy-hungry processes (water, detergents).

Furthermore, cleaning accounts for a significant portion of production lead times.

By choosing a cleaning strategy based on comprehensive, continuous measurements, you can improve the safety, quality and profitability of your production.

Our Spot4Line tool can be used to optimize each of the phases by means of UV-VIS optical scattering measurements.

In addition, Spot4Line is compatible with most production PLCs, allowing you the possibility of integrating your production facilities into Industry 4.0.

The sensor can also be used before starting the cleaning phase to identify what products are present in the pipes and define specific cleaning cycles.



How?

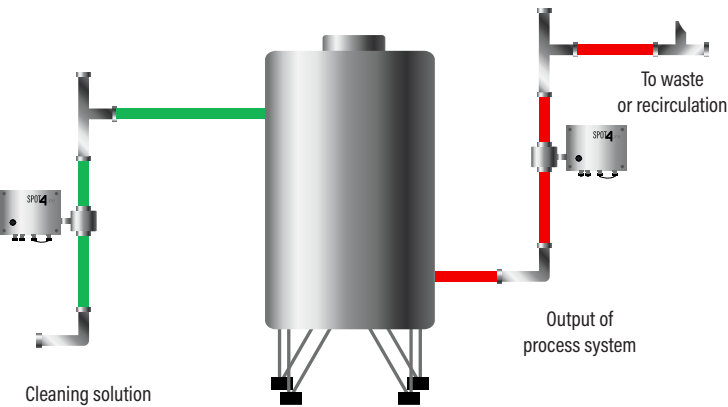
Optimize your cleaning-in-place operations with the SPOT4Line Multi-parameter Analyzer. SPOT4Line provides precise measurements of the physical and chemical composition of liquids, including the turbidity, color and temperature.

By precisely detecting each CIP phase, the SPOT4Line LED spectrometer can help cut cleaning times by up to 15%.

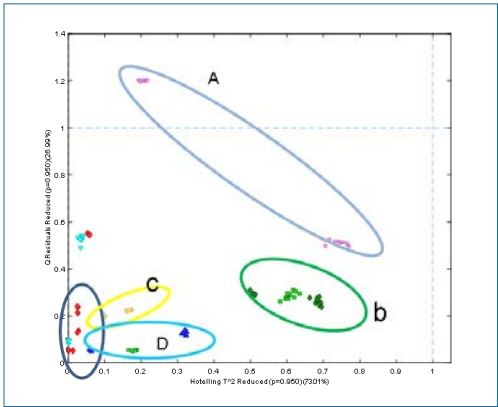
Example of cleaning in place in the dairy industry

CIP NEP	Advantages	Benefits	Limitations for competitors
1. Rinse	Measure very high turbidity & color > helps to keep high-value residual product	More product	Does not measure high turbidity Usually no color
2. Caustic phase cleaning	Combination of turbidity and color: accurate monitoring of product removal and chemical reactions during the recirculation and caustic recovery step. Optimal time for recirculation, Can identify foaming (unwanted chemical reaction)	Time Optimization (heat , energy)chemical product OptimizationRisk monitoring	If turbidity remains high, the sensor cannot diagnose whether it is due to product losses or an unwanted chemical reaction (foaming). Difficulty to monitor the reaction during recirculation loop & recovery
3. Intermediate Rinse	Accurately monitor the rinsing phase. Better accuracy due to UV and blue multi-angle capabilit	Risk & safety managemt.,optimization of time & energy (heat, pump)	Usually only based on Turbidity and conductivity. Less sensitive than UV
4. Acid Phase	UV can monitor the removal of mineral particles such as TiO2 and also proteins	Time Optimization Risk&Safety	Most sensors can't monitor this last phase accurately
6. Final Rinse	UV and blue multi-angle LED can track small remaining particles, products or chemical agents	Time Optimization Risk&Safety	Usually only conductivity is used and it is less sensitive than UV

Spot4Line for Cleaning In Place



Our teams at INDATECH will be delighted to answer your questions by telephone: **+33 4 80 78 01 40**



Identification and monitoring of the different steps in the cleaning process

Avantages du SPOT4Line

- Quick commissioning of new CIP lines
- Optimized control of CIP lines which can be adapted for each type of equipment/line to be cleaned
- Reduction of water and energy consumption
- Troubleshooting of leakage problems on production equipment (leak on filtration unit)

