



Case STUDY



Type of product: **LED SPECTROMETER**
Product name: **SPOT4Line**

Cleaning In Place (CIP)



Keywords: CIP, concentration, phase separation, push, flow-rate, temperature, turbidity, titration

Spectroscopy is revolutionizing CIP management

► **Cleaning in place, non-productive time which can be optimized!**

Used in the agri-food, pharmaceutical, chemicals, biotech and cosmetology sectors, cleaning in place (CIP) involves eliminating any trace of product residues, organic or mineral deposits in a process, without having to dismantle it, by flushing the pipes and tanks with appropriate cleaning products. Execution of the various CIP phases often leads to **long periods of non-productivity**.

To check the effectiveness of disinfection and ensure good overall hygiene, various techniques may be used to perform microbiological testing on surfaces such as surface strips, agar plates, brushes, swabs, Petrifilm or ATP-metry. These test methods require samples to be taken.

► Objectives

- Increase **productivity** by reducing downtime
- Increase **profits** by optimizing CIP operations: reduction of additives, water volume, energy consumption
- Ensure total **traceability** of the CIP operations
- Control the process using the **Multivariate Statistical Process Control** approach (MSPC)
- Guarantee the **safety** of the products manufactured

► Innovative automatic continuous supervision solution from CA INDATECH

CA INDATECH's SPOT4Line LED spectrometer is the solution.

Compared with the standard methods, in-line LED spectral measurement is revolutionizing CIP due to the specific nature of its measurements:

- In-line measurement without contact, sampling or infiltration
- Accurate measurement of any liquid's chemical and physical concentration: turbidity, color, temperature
- Continuous, real-time monitoring
- LED technology requiring little or no maintenance
- Easy installation directly on the pipework

Depending on your installation, we can advise you on the positioning of your sensor on your site.

The SPOT4Line is compatible with all types of PLCs.





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▪ Example of optimization of a push phase

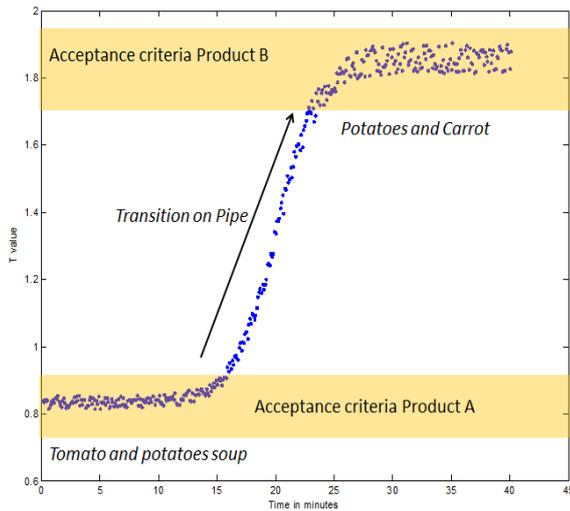


Figure 1: representation of the evolution of the product(s) characteristics
With optical signature of two types of soup, A and B, measured with the SPOT4Line. On the basis of this information, a transition indicator 'T' has been calculated.

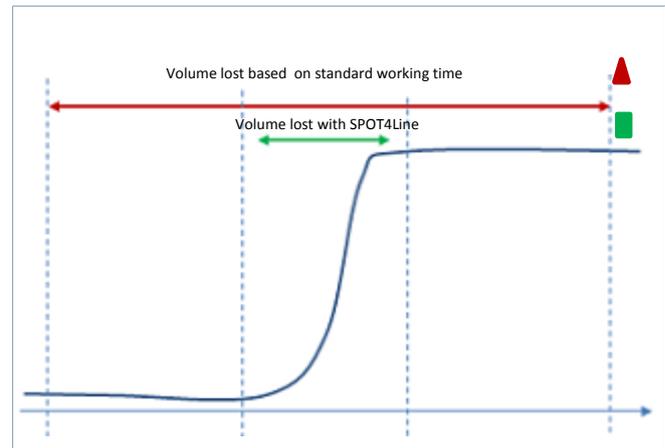


Figure 2: representation of the time used for CIP

- ▲ With a standard method
- With the SPOT4Line solution, CIP > 4 times less time

Advantages of SPOT4Line

Installed on your pipework, the SPOT4Line guarantees continuous, real-time supervision.

It can be used to check and monitor the **key CIP parameters**

- **Time:** determine the precise duration of each cycle
- **Turbidity:** monitor the quantity of product traces/solid materials in suspension in the effluent
- **Temperature:** measure the temperature of the cleaning products
- **Titration:** determine the concentration of the cleaning agents
- **Flow-rate:** check the speed of the cleaning products (option)

This set of data leads to improvement proposals to rationalize the various CIP phases in total safety.

SPOT4Line
find out more

Our team is at your disposal
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