

## Application Notes – Process Monitoring Pharmaceutical Industry

At Sintrol, we are committed to implementing solutions for our customer's problems. Our products are based on our unique Inductive Electrification technology and developed using a flexible modular based platform that allows us to tailor our products for the customer. While many dust monitoring systems are tailored towards the government regulated emissions limits, there are intermediary measurement points that can be just as critical to the costs and regulatory compliance of the end user. Managing the filtration systems is not only good for emissions, but also a strong indicator to help with maintenance and overall plant costs.

### Objective

Monitor the filtration systems of the dust extraction systems to avoid contamination in the workplace.

### Problem

The Spanish laboratory of a global pharmaceutical company using a dust extraction system in its work-shop needed to monitor the quality of its filtration system. In the pharmaceutical process, ambient dust particles from the materials used are extracted from the plant and filtered away before being recycled back into the lab. This adheres to the Health and Safety regulation for the EN Prevention Risk Law 31/1995 and 39/1999. If the dust concentrations get too high in the process, the health of the workers is compromised as well as the quality of the products as they may get contaminated. The plant wanted to measure the quality of its filtration systems to ensure that the dust was being removed effectively.

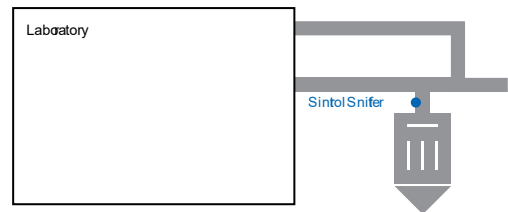
### Solution

In partnership with the OEM of the filtration systems as well as the end user, we installed a Sintrol Snifter along with the filtration system to identify when there are breakages in the filtration system. This allowed the customer to quickly identify a broken filter and have it replaced. The Snifter was installed on the outlet duct of the filtration system. When an increase in dust concentration is detected, it immediately sends an alarm signal to the plant operator that the filtration system requires maintenance. This helped improve the workplace condition for all employees and the productivity of the customer. Since the initial installation, many Snifters have been purchased by the same customer for similar applications.

### Principle of Operation

Sintrol dust monitors are based on a unique Inductive Electrification technology. The measurement is based on particles interacting with an isolated probe mounted into the duct or stack. When moving particles pass nearby or hit the probe a signal is induced. This signal is then processed through a series of Sintrol's advanced algorithms to filter out the noise and provide the most accurate dust measurement output.

Classic triboelectric technology is based on the DC signal, which is caused by particles making contact with the sensor to transfer charges. Compared to DC based measurements, the Inductive Electrification technology is more sensitive and minimizes the influence of sensor contamination, temperature drift and velocity changes. By using the Inductive Electrification technology, it is possible to reach dust concentration measurement thresholds as low as 0.01 mg/m<sup>3</sup>.



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