

# BASF Antwerp Maximizes Plant Output with Emerson's Machinery Health Technologies

## RESULTS

- Saved up to €10,000 in one case when predictive diagnostics avoided a production outage due to a chalk drying fan failure
- Prevented lost production by relying on predictive intelligence based on Emerson's condition monitoring programme
- Achieved significant savings by applying predictive diagnostics based on vibration monitoring to extend the period between bearing replacements on fertilizer production machinery



## APPLICATION

Production of mineral fertilizers (simple & complex), plastics, chemicals, and several other derivatives.

## CUSTOMER

BASF, a leading global producer of styrenes, engineering plastics, and polyurethanes, operates the largest chemical production facility in Belgium and the second largest for BASF worldwide. BASF Antwerp, located near the Scheldt River, has 53 production facilities and 3,400 employees.

## CHALLENGE

As a market leader, BASF must keep its assets running to maintain production and the company's strategic position. BASF's flexibility and know-how are unique in the industry. Production processes are fully integrated, meaning that by-products from one facility are put to use elsewhere.

In the past, BASF Antwerp operated on time-based preventive maintenance. Lost production due to this practice and inefficient maintenance procedures were very costly.

## SOLUTION

BASF Antwerp selected Emerson about ten years ago to implement predictive maintenance based on vibration data derived from condition monitoring of production facilities. With the introduction of predictive maintenance, the company moved from a time-based environment to a predictive approach, resulting in significant cost savings and fewer equipment breakdowns.

*“Emerson's machinery health technologies help us detect critical problems which could not have been seen before, like bearing cage problems and potential faults with slow speed machinery. Last year we had a significant savings with our predictive programme.”*

**Johan De Wever**  
Rotating Engineering Specialist  
BASF, Antwerp, Belgium

“We started using Emerson’s CSI 2115 Vibration Analyzer and switched over to the CSI 2120 Vibration Analyzer about four years ago,” said Johan De Wever, Rotating Engineering Specialist, BASF. “We now have four CSI 2120s, which are very advanced. When combined with AMS Machinery Manager, they help us detect critical problems that could not have been seen before, such as bearing cage problems and potential faults with slow speed machinery. Last year we had significant savings with our predictive programme.”

At the Antwerp facility, BASF monitors approximately 3,000 machines and uses the AMS Machinery Manager predictive maintenance software to process the results. Recently, a fan that was used in drying chalk had a defective bearing cage. With the aid of Emerson’s diagnostic technologies, the problem was detected, and it was determined to be serious enough to take the fan out of service despite the negative impact on production. When the fan was examined visually, the cage was found to be ready to fail. This might have caused a production outage of two days and would likely have resulted in secondary damage, such as a bent shaft or failed bearing. Two days of lost production would have resulted in a maximum loss of several hundred tons of chalk worth approximately €10,000. Because the problem was found before a failure occurred, BASF saved one full day of work, and only the defective component had to be replaced.

“Emerson’s technologies played an important role in preventing excess lost production due to an extended downtime in the incident with the chalk drying fan,” said Johan De Wever. “We feel confident that our relationship with Emerson plays a part in keeping our strong market position. These tools have allowed our team to grow our core competencies to include troubleshooting, multi-channel analysis, and ODS analysis. We have been able to use our own expertise along with Emerson technologies to keep watching over a broad scope of assets across this huge facility and to prevent problems before they occur.”

In the future BASF will continue to practice predictive maintenance and will also start to focus on proactive maintenance and Root Cause Failure Analysis (RCFA).

***“We have now been a customer of Emerson for more than 10 years and the support continues to be outstanding.”***

**Johan De Wever**  
Rotating Engineering Specialist  
BASF, Antwerp, Belgium

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