

# Digital Automation System Ups Synthetic Rubber Maker's Sales with Reduced Variability and Improved Product Quality

## RESULTS

- Reduced variability on a distillation column from 15% to 20%, to less than 5%
- Savings of around \$20,000 per year
- 10% savings in steam costs
- Increased stability in process towers

## APPLICATION

Purification, polymerization, distillation and other processes in synthetic rubber plant.

## CUSTOMER

Petroflex, Cabo, Brazil

## CHALLENGE

Petroflex sells to manufacturers of tires and shoes, makers of adhesives, sealers, food packaging, and other waterproof products in 50 countries. With production capacity of 90,000 tons per year, and a dozen key competitors in the marketplace, Petroflex' sales depend on consistent product quality.

Says Petroflex' industrial director Paulo Alvarenga, "To keep our market position, we seek a continuous, permanent modernization of our plant. After several years working with variability, we introduced 6 sigma process standard, so that our team could seek solutions for improvement of the process, or for rigorous control of process variables."

## SOLUTION

To control those process variables, Petroflex replaced an out-of-date control system with the DeltaV™ digital automation system, a key component in the PlantWeb™ architecture from Emerson Process Management.

To zero in on problem process variabilities, and to quantify expected returns on improvements, Petroflex agreed to a variability analysis of its process from Emerson's Sorocaba representative.



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**Marconi Madruga**

Plant Manager, Petroflex, Cabo



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The preliminary analysis of the solvent purification system identified several valves not suitable to meet process demands. These were quickly replaced. Based on the process analysis, the company selected Emerson's DeltaV digital automation system for the purification area, a key process area in which raw material is prepared for use in the production process.

The results for Petroflex were dramatic, and immediate.

Following the purification area installation, Petroflex added DeltaV control to the polymerization area. Notes Petroflex, Cabo plant manager Marconi Madruga, "After the installation was performed, several opportunities that we couldn't identify before were effectively confirmed, and from that moment on, these problems could be solved."

The digital automation system's enriched process information and embedded diagnostics were key components in Petroflex' process improvement and maintenance savings. The system's intuitive interface and ease of operation saved Petroflex on operator training, as well as on maintenance.

"People are trained rapidly and can use it very easily," says Madruga, "The system is much more flexible and friendly than other systems on the market with regard to communication between the user and the process." He adds, "We have process engineers and operators that use the system and we have personnel who perform its maintenance. But the system is so easy to use that even our process engineer, if the maintenance staff isn't there at the moment, can do the work."

Madruga says the return on investment from the Emerson digital system came much faster than other options. He concludes, "We have become more competitive and we are in a stage of improvement of our process, getting repetitive quality and uniform product, which is what our customers want."

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