

Dow Chemical Eliminates Raw Material Management Errors for Two Years Running

Global specialty chemicals producer turns to aspenONE® Production Management and Execution (PM&E) to implement procedural control, efficiently moving raw materials and avoiding process upsets.

Many of Dow Chemical's production facilities rely on small-capacity containers that look alike from the outside but hold chemically different materials. If a container is mis-identified and the wrong raw material is added, a process upset occurs, negatively impacting the process, product, and/or health, safety and the environment. Dow needed to eliminate any mis-identifications.

The specialty chemicals producer faced a number of challenges. Raw materials enter and exit the process at different times and from different locations. The control system is unable to differentiate between the various containers and materials, and human detection is unreliable.

A key benefit of aspenONE PM&E is its capability to provide procedural control in manufacturing work processes, so aspenONE PM&E was implemented at Dow facilities to authenticate all materials and generate orders to retrieve and load material into a process. The result has been the total elimination of material management errors over the last two years.

Customer Profile

Dow Chemical Company
Specialty Chemicals

Challenge:

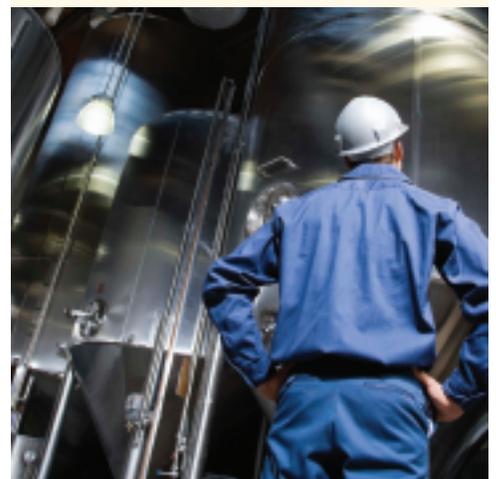
Eliminate mis-identification of materials being moved into and out of production

Solution:

Two key products from the aspenONE PM&E suite: Aspen InfoPlus.21® and Aspen Production Execution Manager

Benefits:

- Issue and validate a set of actions automatically
- Completely eliminate errors due to mis-identification of raw materials
- Assure six sigma performance of the raw material management work process



Avoiding Process Upsets from Mis-identified Materials

Dow Chemical manufactures more than 3,300 products at 156 manufacturing sites in 37 countries and delivers a range of plastics, chemicals and agricultural products to customers in 160 countries. Many production facilities work with packaged, small-capacity containers that look alike from the outside but contain raw materials that are chemically different. If a container is misidentified and the wrong material is added, a process upset occurs, adversely impacting product quality, material and asset utilization, or causing a health, safety and environment incident. Dow's objective is to greatly reduce the risk of a process upset and move their operation from two to six sigma performance.

aspenONE PM&E Chosen to Implement Procedural Control

Dow developed a high-integrity material flow (HIMF) system, which is a method of ensuring that the movement of materials into and potentially out of a process position is authenticated. The HIMF system was built using two key products in the aspenONE PM&E suite: Aspen Production Execution Manager and Aspen InfoPlus.21 as an MES solution for procedural control.

Connectivity between the MES solution and the warehouse data management system is essential to proper authentication of materials. As material is moved from the warehouse into production, the MES and warehouse systems share reference data. The MES system automatically generates a work request using Aspen Production Execution Manager, guiding the operator in material identification and retrieval.

Material moved into production is compared with control system information through the use of a mobile human machine interface (HMI), a bar code scanner integrated with a wireless mobile computer. Aspen InfoPlus.21 interfaces with the plant control system to confirm that the material the operator has scanned on the HMI at the production position is indeed the correct material for the recipe being executed. The automated workflow and product validation enabled by Aspen Production Execution Manager allows Dow to authenticate materials before they are used in the process.

Material Management Errors Are Eliminated

Errors due to positioning incorrect raw materials into production have been completely eliminated, moving this work process from a two sigma to near the targeted six sigma operation. Aspen Production Execution Manager provides the rigor of a programmed work procedure with automatic notification of a set of actions to an operator's hand-held device. Dow plans to implement this solution in sites across the company.

About AspenTech

AspenTech is a leading supplier of software that optimizes process manufacturing — including oil and gas, petroleum, chemicals, pharmaceuticals and other industries that manufacture and produce products from a chemical process. With integrated aspenONE solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit www.aspentech.com.



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