

Industry Expert System Delivers Measurable Improvements in Operational and Financial Performance



Cytec Industries Inc.

Cytec Industries, a specialty and materials technology company launched a new program for the mining industry, which provides customers with recommendations, resulting in significant operational and metallurgical benefits. Flotation reagents are the chemicals that help a mine to extract gold, platinum and other high value metals from ore. The selection of the optimal reagent is a complex decision based on many chemical and geological factors, and has a major effect on the profitability of a mine.

“Key to building the program, Exsys Corvid expert system development software was selected because of its ability to handle complex logic, especially probabilistic selection of the ‘best’ options”, states Dustin Huntington, president, Exsys Inc. Cytec’s FLOTATION MATRIX 100™ uses a methodical, consultative interactive interface, and is based on Cytec’s 100-year expertise in specialty chemicals for mineral processing and the recovery of precious metals. The system includes four key phases: Needs Assessment, Reagent Selection, Lab Testing and Plant Testing.

The system conducts a thorough evaluation of the customers’ requirements, ranging from plant objectives, characteristics and constraints, to mineralogy and ore types, and desired return on investment. The expert system then analyses this information using and building on the company’s historical industry knowledge to make efficient, systematic recommendations that are tailored to meet the customers’ specific needs. The system is delivered on Cytec’s web site via the Exsys Corvid Servlet Runtime, which provides an intuitive end user interface for this multifaceted system. Cytec wrapped the Corvid Servlet Runtime in a .NET wrapper to allow users to see a partial report, copy past runs and rerun sessions.

Once a chemical reagent is recommended, a series of lab and plant tests help to ensure that the custom blended formulations offer the optimal solution. Applying the standardized, systematic information harvested in the process not only expedites testing processes, but also ultimately drives process improvements.

The recovery and grade concentrate yielded in flotation depends on a number of environmental and operational factors, and is significantly enhanced by customized reagents designed specifically for each customers milling process. With almost a century of industry know-how codified into the system, Cytec Industries is in a unique position to offer a service that goes beyond simply providing chemicals—into the realm of helping their customers’ businesses grow and become more profitable.

According to Gary Thundercliffe, global marketing manager, Mining Chemicals, Cytec Industries Inc., “We understand that the right or wrong chemical reagents can severely impact the bottom line of any mining business. That’s why we’ve designed FLOTATION MATRIX 100 to help our customers select the right reagents to accelerate and maximize return on investment.”

