

Customized pigments arrive

Kemira has started marketing its new range of calcium sulfate pigments. Developed in-house, they will enable papermakers to save on production costs and improve their profitability.

The calcium sulfate crystallization technology that has been developed and commercialized by Kemira means that it can now supply coating and filler pigments that are closely customized to customers' process needs, thanks to the ability to produce specific sizes and shapes of calcium sulfate crystals.

Project Manager **Joe Stockman**, who is responsible for marketing the new products in North America, says that full-scale supplies will probably take a couple of years to establish.

"Paper mills use such large quantities of pigments that it doesn't make sense economically to transport them long distances. That's why Kemira is going to build production facilities close to where our customers are located. The first new plants for these pigment products are due to become operational in 2011, when we'll start large-scale shipments. Until then, we'll supply the new pigments to a select number of key customers from our plant in Finland."

The timetable and strategy outlined by Stockman also holds true for the Central European market, and Kemira is planning to start up production close to its customers here as well. The gypsum generated as a byproduct of flue gas scrubbing systems at power plants is an ideal raw material.

Saving on costs

The most important sales point for the new pigments is the opportunity using calcium sulfate as a filler and coating pigment offer for saving on costs.

"Mills can use larger amounts of calcium sulfate pigments as filler than conventional pigments. Reducing wood fiber content in the end-product brings a clear cost saving," says Senior Adviser **Manel Sánchez**.

Together with Project Manager Dr. **Egbert Elble**, Sánchez is responsible for marketing the new products in Central Europe. They calculate that a medium-sized paper mill producing 200,000 t/a could save millions of euros a year

in production costs by switching. The savings potential varies mill by mill, depending on their processes and the grade of paper they produce.

In coating applications, calcium sulfate pigments give paper and board a smooth and pleasing surface that is ideal for high-quality printing and a superior appearance. The new pigments also give paper high brightness and surface strength. By using calcium sulfate pigments, producers can reduce their use of binders and thereby make major cost savings.

Switching to calcium sulfate pigments also makes a contribution to a cleaner environment, as their carbon footprint is smaller than that of other pigments.

"Calcium sulfate pigments are produced from gypsum generated as a byproduct in flue gas scrubbing systems or other industrial processes. This generates significantly less carbon dioxide and uses less energy than producing other types of pigments. It also means that a mill uses less energy itself and less wood input," continues Chris Lewis, Wet End Applications Specialist, North America.

Better-managed processes.

A number of Finnish paper mills are already familiar with using calcium sulfate pigments. They have also been tested with customers elsewhere in the Nordic region, Central Europe, and North America in a variety of segments with both uncoated and coated paper grades.

Switching pigment is a lengthy process for a paper mill and must progress to a precise timetable and strategy to succeed. Ensuring that trial runs do not interfere with normal production or undermine product quality is essential.

"We start off by evaluating a customer's needs, hopes, and goals in detail. After that, we analyze their processes and carry out laboratory and pilot-scale tests. From there, we move to full scale and carry out trial runs before we can be sure that a mill can switch over safely," explains Egbert Elble.

The process analysis involved here can pro-

duce other, indirect benefits for a customer as well, adds **Chris Lewis**.

"A customer can benefit from our expertise over a number of months, and we can help identify other areas that we can improve in one way or another. These improvements can extend beyond filler and coatings issues and involve any area of wet end chemistry."

A need for new solutions

Stockman, Elble, Sánchez, and Lewis are all very aware of the challenges involved in launching a new product.

"Customers need time to adjust to the idea of introducing a new technology. And we need to be able to convince them that we can deliver on the benefits that we're promising."

Kemira is better known for its other paper and pulp chemistry expertise than its coating and filler pigments at the moment. This could slow down marketing of the new pigments, but it could be a clear plus as well.

"We're looking to offer our customers comprehensive chemical solutions that will maximize the efficiency and economic performance of their processes and systems. Kemira is the only company that really understands all the areas involved in papermaking chemistry, which makes our offering something special," says Stockman.

The changes under way on the global pulp and paper market could well work in favor of the new pigments, as paper producers in Central Europe and North America are increasingly having to look for ways of surviving in difficult economic times and combating rapidly rising energy prices and tougher global competition.

"Paper producers, particularly those operating on the mature markets of Europe and North America, need to find ways of cutting their costs and enhancing their competitiveness – and our new generation of calcium sulfate pigments offers them an excellent way to do just this," says Elble. ■



Manel Sánchez (left), Joe Stockman, Chris Lewis, and Egbert Elble believe that Kemira's new calcium sulfate pigments have a lot to offer and will help meet the demand for new solutions capable of cutting production costs.