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Collaborating for Innovation



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By: Jordan Brandes

In the world of contract manufacturing, a company is defined by the products it makes. But products do not simply appear, they are created through collaboration and creative innovation between contract manufacturers and CPGs.

Take, for example, the creation of Purex Complete 3-in-1 laundry sheets, introduced nationally in 2009 by Henkel, owner of the Purex brand of laundry products, and with the non-woven equipment support from Kleen Test Products Corp., a contract manufacturer. The Purex Complete 3-in-1 laundry sheets product was awarded the 2010 Edison Best New Product Award in the consumer household goods category, industry recognition of the innovation the product brought to the laundry care market.

Kleen Test normally does not disclose the products it manufactures or the names of its clients, respecting client confidentiality. However, as industry attention

focused on the launch of Purex Complete 3-in-1 laundry sheets the second quarter of 2009 and it became an award winner, Port Washington, Wis.-based Kleen Test's involvement in manufacturing the product became generally known and so the companies agreed to speak with *Contract Manufacturing & Packaging* about the product's development.

Collaboration

Henkel is a Fortune Global 500 consumer goods company that markets and manufactures laundry, home care and adhesive technologies. Henkel's consumer products business is headquartered in Scottsdale, Ariz. Its parent company, Henkel Corporation, is based in Dusseldorf, Germany. Kleen Test has seven facilities in Wisconsin and Ohio. The two companies had worked together in the past for the manufacture of other non-woven products.

“Henkel prepared the prototypes at their Scottsdale laboratory, but as the project progressed, a larger number of samples were needed to satisfy requirements for fielding consumer tests. This is the point [in 2007] when Henkel turned to Kleen Test,” recalls Marc Maslanka, director of process engineering laundry and home care, at Henkel.

Discussing why Henkel opted to work with Kleen Test rather than another vendor, Maslanka says, “Kleen Test had existing capability for pilot-scale non-woven coating equipment. They also had idle production-scale equipment that looked suitable for the application. Henkel and Kleen Test partnered to make samples for consumer test purposes. During this stage, the basic parameters for applying detergent and fabric softener were identified.”

“The project was a model for collaboration between a CPG company and contract manufacturer. The joint execution of developmental trials and process design resulted in extraordinary speed to market,” says Jeff Maxon, vice president of technical services and Development at Kleen Test.

A joint effort from both companies involved a commitment to ensuring the product came out as envisioned in the first meeting.

Purex Complete 3-in-1 laundry sheets are a combination of laundry detergent, fabric softener and an anti-static sheet, all coated on a single sheet so that consumers do not have to use multiple products while doing a load of laundry.

Three separate properties are incorporated into the product, allowing different functions to occur as needed. The thick blue layer includes cleaning solution for a single load of detergent. What remains after the washing cycle is a stripe with the fabric softener and anti-static formula on it that can be put into the dryer directly from the washing machine.

The sheet can be found in a package that mirrors the design of the product itself. With smooth curves and bright colors, the packaging is compact and distinctive. The curve of the box allows multiple products to be stacked alongside each other on the shelf without wasted space.

The two companies tackled a variety of manufacturing challenges during the project, including making sure the coating technology used for lining the sheets was done correctly and finding the ideal shape for the product.

Staff from both companies, ranging from the executive level to the production floor, took part in the project. “The commitment and participation of upper management from both companies set the tone for the entire project. We received visits from the president of Henkel Consumer Goods and other senior leaders from Henkel’s headquarters in Germany, expressing their support for the project.” Maxon says.

The Henkel team also was responsible for consumer research and product testing. Kleen Test conducted its own



Henkel's 2009 spotlight award for special achievement given to Kleen Test Products for its work in the creation of the Purex Complete 3-in-1 laundry sheets.

research for six months during the end of 2008 until the beginning of 2009 to deal with manufacturing problems as they came up throughout the product's creation.

Challenges

Henkel came to Kleen Test Products with a clear idea of what it wanted. Creating the final product in a way that was both functional and unique to the consumer took the combined creativity of both companies in order to overcome the manufacturing challenges involved. A number of technical obstacles became apparent as the product's creation progressed.



“Two issues arose when it came time for the project to move from pilot scale to production scale. First, the coating technology utilized during pilot scale was determined not to be accurate enough for the line speeds desired at production scale. Second, the curing of the detergent and fabric softener coatings needed to be applied at an elevated temperature and then cooled. The cooling demands for this product were beyond what is normal in the nonwovens industry,” explains Maxon.

Converting is an industry term used by companies that work in the non-woven sector. A converting machine takes the base nonwoven fabric and turns it into a finished product ready for distribution.

Producing the product was much like running a printing press, says Maxon. The coatings in the product’s laundry detergent needed to be heated at the proper temperature. Once the proper temperature had been reached the liquid was applied to the nonwoven fabric. This combination needed to be cooled and dried quickly.

The team at Henkel knew that a unique shape for the laundry sheet would give the product a look that would be identifiable with consumers on the shelf. However, designing a process to manufacture that unique shape presented challenges with cutting, stacking and packaging at high speed, explains Ed Kosobucki, director of manufacturing at Kleen Test.

“When Henkel came to us, they had only found a way to coat one part of the fabric. This is typically how most fabric softeners work. The problem was that we needed multiple coatings to do multiple things [while in the washer and dryer] across different parts of the strip,” says Kosobucki. “The specialized nature of the multiple formulas on the sheet required that specialized blending, coating, and production systems be designed and constructed. The characteristics of the detergent required a novel solution to produce a coated substrate that could be converted into a cut pad without sticking or transferring active ingredients to other sheets,” explains Maxon.

Resources

Henkel chose to make use of Kleen Test’s facility in Milwaukee, Wis., which is home to many converters and converting equipment manufacturers making it the ideal place for testing. The converters that the company used included coating equipment for the chemicals and cutting and stacking equipment to make the individual sheets, explains Maslanka.

Henkel brought formulation expertise to the project. In turn, Kleen Test brought its non-wovens coating and converting expertise. The company ultimately modified

a number of pieces of manufacturing equipment to coat, convert and package the product, Maxon explains.

“The majority of one production facility was dedicated to the creation of the Purex product. Because of the many unique features of the product, a specialized batching system had to be installed and substantial modifications made to existing coating and converting lines. Over a three-month period, from the end of 2008 into early 2009, lines had to be cleared from the plant, the batching system installed and all of the coating and converting lines either brought in from other Kleen Test facilities or substantially modified. During that time, production scale trials continued and a 24/7 crew of workers was trained,” explains Kosobucki.

“Since there was not an existing product that was similar, the quality departments from both companies had to work closely together to develop the manufacturing standards and quality acceptance criteria to use on the production lines,” reacts Heyer. Cross functional teams were set up so that each team could perfect a single aspect of the product. Details like product cutting, coating and quality control were all delegated to specific teams in order to make the process run smoother and faster.

“By implementing a cross-functional team with members from both companies, we were able to compress the developmental timeline by making results and progress reports available to both companies in real-time,” adds Maxon.

“Every project is different, so there is no typical timeline. However, as you are going through the process, you just intuitively know that it is moving along quicker because the different disciplines are sitting across the table from one another and can make quick decisions versus having to work things by e-mail between people who are in different cities,” says Maxon..

Progress was tracked using project management tools, he explains. The primary communication tool was a Gantt chart (a bar chart that illustrates a project’s schedule) which was continually updated by a Kleen Test engineer and available to all of the team members. The early team was comprised of engineering, product development, marketing, package engineering quality and project management. The team expanded later to include production, planning, maintenance and transportation.

Analysis

First sold nationally during the second quarter of 2009, the Purex Complete 3-in-1 laundry sheets typically sell for anywhere from \$5 to \$7 depending on the store and can be found in most convenient and grocery retailers



Kleen Test Products facilities in Milwaukee, Wis.

throughout the country.

The laundry sheets are both innovative and hold consumer appeal as both companies claim, according to supermarket industry analyst Phil Lempert, known as the Supermarket Guru.

“The Purex 3-1 sheets are on target - especially for the baby boomer consumer who started to turn 65 last year - who wants easy and convenient more than anything. Over the past 10 years or so, we have seen ‘sheet’ or ‘wipe’ technology become mainstream with all consumer groups and this is just another example of brilliant household science at work,” he says.

“I would expect this product to do exceptionally well, especially with apartment dwellers or those who have either limited space for storage or have to use public laundromats,” explains Lempert.

This is, in part, due to the overall size of the package and the dual nature of the product. The 3-in-1 function of the product allows the consumer to do more with a single package compared to standard laundry products. In most cases, the average consumer must bring detergent and a separate dryer sheet in order to do a full load of laundry. As mentioned in *CM&P*’s online review of the product, the

Purex Complete 3-in-1 laundry sheets saves the consumer the effort of using multiple items to do a load of laundry.

“In addition, from a shelf space point of view, as more smaller footprint supermarkets like Fresh & Easy and Walmart are proliferating, the full aisle of laundry products will disappear to a third of what is there now, so expect a huge bonus at retail with a product that requires less space and will have high turns and higher than average mark-ups,” says Lempert.

The creation of the Purex product was a learning process for both Henkel and Kleen Test. Although this was not the first time the two companies had collaborated together, the Purex product allowed both companies to address CPG and manufacturing problems in a way that emphasized strong communication and teamwork.

Henkel executives agree that the teamwork gave the partners a common objective and helped manufacture the product quickly and efficiently. “Kleen Test Products was a great facilitator in driving this innovation,” says Stephen Koven, director, laundry care, at Henkel.

“The earlier in the process that the marketer and manufacturer can get together, the more efficient the commercialization process will be,” explains Maxon. ■



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