

Nylon Expands Beyond Carpets To Keep Its Place In Market

Upholstery, apparel uses for manmade fiber key to blocking challenges from newcomers

Thanks to its versatility and performance characteristics, nylon has been holding steady in a stormy textile environment, but producers are aware that staying on an even keel is precarious.

Nylon is the primary fiber for carpeting, is making inroads into upholstery, is growing in activewear, intimate and seamless apparel and continues to monopolize certain industrial and automotive end uses. However, skyrocketing raw-materials costs seriously threaten profitability. And although there is much optimism about how passage of the Caribbean Basin Initiative (CBI) may spur U.S. fiber production for apparel textiles, imports are still on the rise.

The nylon industry stalwartly survived two years of economic downturns in Asia and Europe, then hit a wall during the second half of 2000, from which it has not recovered.

"No matter what the government wants to call it, we are in a recession in manufactured goods in nylon and we've seen negative growth of demand during the last four to five months," says Alan Wolk, president and general manager, DuPont Flooring.

But some producers believe what Dina Dunn, vice president of marketing for Nyl-



A model wears a Vassarette intimate apparel set made of BASF's Shimmerene nylon.

star Inc., believes. "We're experiencing a bit of a slowdown like the rest of the market but we have a pretty good mainstay of business that is consistent," she says.

By Elaine Gross
New York Correspondent



Carpet at the Phoenix Convention Center is made of BASF's Zeltran 200 nylon.

In this business climate, fiber producers are content not to set unattainable goals for expanding capacity or production.

"With all the yarn coming in from offshore and the new players here, everyone is looking closely at capacity utilization and what they need to be doing. We just have to make sure we're running the right products on the right equipment," says Bill Scott, business director, textile and automotive products for BASF. Excluding carpet, about half of BASF's textile nylon production is for apparel.

Soft flooring, which accounts for nearly 70% of the total flooring market, has been relatively healthy the last few years, even though hard floor surfaces (wood, ceramic and laminate) gained a small share. It was healthy enough for DuPont Flooring to start a new production line in Kingston, Ontario, Canada.

"At the same time, given that demand was slack, we idled some of the less economic facilities," says Wolk. "We try to keep supply and demand in balance, but we're still investing in this business. Nylon is pricier than polypropylene or polyester but it is always the fiber of choice. In the 1990s polypropylene made inroads against nylon in the lower end of the market, but that seems to have stabilized. So we are not moving off our long-term commitment to the brand-

ed, high value part of the industry."

U.S. continuous filament nylon shipments increased to 1.3-billion lb in 1999, compared to just under 1-billion lb in 1991, according to figures from market research company, October Consultants Inc.

"We're seeing a decline of staple shipment [for carpets] of about 2 to 3% per year," says Ian Wolstenholme, manager of sales and marketing, carpet fiber products for BASF. "Filament is more efficient, has better yield and a cleaner look, while with staple you need more fiber to get the performance and it is more labor intensive to produce."

The issue of greatest concern to nylon fiber producers, regardless of end use, is the dramatic escalation of raw-materials costs during the past 12 months for oil and natural gas for processing nylon and as a molecular component of some fibers. Nothing indicates the price spiral will end soon. Something's got to give soon, everyone says, but when is anybody's guess.

During the third quarter of 2000, the price of oil was at a high of \$36-37/barrel. In January 2001, prices decreased to about \$30/barrel, but most believe that the "right price" is about \$22. Natural gas cost \$9.95/million BTUs in January 2001 compared to \$1.68 in May 1999.

"It has really created quite a stress

on textile margins," says Scott. "The pressure is intense to maintain if not increase prices. But increases have to be selective. More specialized yarns have gone up while commodity yarns have held steady."

DuPont Flooring instituted several price increases during the past 18 months, "but we've still been unable to recapture all of the costs," says Wolk. "We have to pass along the increases the best we can, but it is difficult to price in an environment where demand is not strong and players are not sold out. So there is a significant jockeying of share."

"When there are four carpet manufacturers controlling 75% of market share, they are all watching each other, trying to gain 1% share," says Wolstenholme. "No one wants to be the first to put price up because if you're first, you're exposed. The industry knows we all need it, but timing is everything in this game."

"Our customers are saying we're not going to pay more than X," says Nylstar's Dunn. "We're not able to manage ridiculously high prices because you simply have to be competitive."

Industry watchers see the goal to keep costs down while simultaneously increasing consumer spending as essential for the future of not just nylon, but the U.S. textile and fiber industries in general. Nylon is uniquely and additionally faced with new U.S. competition from mills that have begun extruding their own yarns and creating their own brands. In response, fiber producers' brands are being emphasized not only to differentiate products and wave a banner of quality but as a defense against those mills.

"Branding is more important now in commercial than in residential carpeting," says Wolstenholme.

A few years ago, BASF stopped branding its residential carpet fiber. "It was getting difficult to sustain the brand against what was happening in the industry with the mills beginning to extrude. Mills are extruding type 6 fiber, so competition is getting hot and heavy for fiber. And soon the mills will catch up technically. Savant is important because it raises the bar."

Savant, French for smart, is BASF's new nylon contract carpet fiber that, in response to customer surveys, was created to be soil- and stain-resistant, ozone fast, recyclable and custom

dyeable in small lots. The R&D challenge, which took two years to achieve, was to make fiber that was stain resistant, could dye any color and was priced competitively.

Zeftron 2000 is BASF's long-standing commercial carpet brand that also carries over into contract upholstery textiles. For apparel, BASF's Shimmereen nylon fiber, a sparkly, fine denier fiber for wide elastics, is its most recognizable, especially in intimate apparel. Other sub-brands in BASF's apparel arsenal are UltraTouch for stretch and seamless garments, UltraMicroTouch for stretch fabrics, SilkyTouch for delicate non-stretch intimate apparel and Zefsport for swimwear, stretch activewear and trikot knits.

BASF advertises only to the trade, promoting its fibers through a menu of informational videos, CDs, seminars and its Web site.

"I think our Web site offers tremendous entrée to our products and will be very important as we deal with the CBI region," says Scott. In addition to fiber and company information, the site includes a photo library of carpets by mill customers that can be dropped into a healthcare, corporate, educational or hospitality room setting to visualize how it would look.

"Synergy is a buzzword that may be overused but I don't know an area where it is better used than in our upholstery area tied in with carpet yarns," says Scott. BASF's carpet area specialists travel around the U.S. armed not only with carpet samples but also with Zeftron 2000 upholstery yarns that use the same pigment and provide the same quality for seating materials. BASF's stringent performance certification program for both carpet and contract upholstery means that they are backed by a full replacement policy.

"My mission is to have my customers specify Meryl," says Nylstar's Dunn. Nylstar Inc. is a joint venture between Italian fiber maker Snia and French fiber producer Rhodia created in 1995. The company produces 160,000 tons of yarns/year in Europe, with a new plant and "proactive sales marketing organization" in the U.S. All of Nylstar's nylon fibers come under the Meryl brand umbrella,



This mountain climber wears a suit made of nylon from DuPont.

with new products sub-branded. The Meryl brand is widely recognized throughout Europe, but during the next 2-3 years, Nylstar will begin generating consumer awareness in the U.S. through an advertising and promotional campaign that is "educational in nature but also image driven."

"We're helping the trade teach the consumer why this product is different and what this brand really brings to the table," Dunn says. "It's a win for the consumer who understands all the positive features of what they are buying. It's a win for the garment maker because it helps pull merchandise off the shelf faster. And it's a win for the fiber producer because Meryl gets specified."

Starting in 2001, DuPont's Stainmaster residential carpet label will be newly found in area rugs, a category that has mainly been handmade of wool or machine made of polypropylene. Antron is DuPont's other primary flooring brand for commercial carpets.

"Stainmaster will deliver stain resistance and floor performance and still capture price points that mass merchants are looking for, which is in the area of \$100-200 retail for a 5x8 [ft]

area rug," says Wolk. The Stainmaster brand will be supported with TV and print consumer advertising, as well as point-of-purchase materials, such as special racks for aligned retailers.

Choose your battleground rather than try to win the entire war. That is the strategy being taken by nylon fiber producers. "Focus," "specialty" and "specified," are oft-repeated buzzwords, implying the hope of achieving greater margins by moving away from purely price-driven commodities, many of which can be less expensively imported.

In flooring and upholstery, the choice is between marketing to either contract/commercial or residential customers, but usually not both. For apparel, experts see intimate apparel and activewear, rather than ready-to-wear or hosiery, with key sub-categories of stretch fabrics and seamless garments, as having the greatest potential for nylon.

"With the stress of ingredient costs going so high, you can't survive in a commodity business.

That's slow death," says BASF's Scott. "You have to pick your spot, understand what you do, how you get it there and be staffed accordingly. Pick places where nylon's characteristics and the benefits of solution dyes are best called into play. Where nylon could be substituted with cheaper fiber, that has already happened. Nylon is in applications where it needs to be."

BASF is zeroing in on the contract upholstery business and stretch or wide elastic fabrics for apparel including, intimate apparel, activewear, circular knits and seamless apparel.

"We're a small player in this market so we've done our best to really try and create some focus for ourselves," says Nylstar's Dunn. "There is so much we could be going after but we've tried to focus around activewear and intimate apparel. Our strength in Europe has always been in R&D, so that is where we're putting our eggs in the U.S. We have commodity products to supply a customer with a complete program, but we are not chasing that business."

Imports are not really an issue for carpets, which are mostly made where they are sold. For that reason, early in 1999, BASF built a production facility in Shanghai, China, becoming

the first nylon carpet fiber manufacturer in the Asia Pacific region. Production will be for local distribution, including New Zealand, Australia and Korea.

"The challenge in China is to get carpets specified," says Wolstenholme. "As the economy grows, more hotels and offices are being built. Now, there is a lot of polypropylene being used but eventually the polypropylene will have to be replaced. In 2 to 3 years there will be a swing to nylon."

CBI is of dire importance to the U.S. apparel fiber sector, but the jury is still out as to whether the tariff advantages will generate enough business to counteract the double-digit increases in yarn, fabric and garment imports that occurred throughout most of last year.

"Our customers are definitely getting on the CBI bandwagon," says Nylstar's Dunn. "I think this is a short-term breather for us to figure out how to compete more effectively. I think Asian producers will still have so much capacity at such low cost they will forever be a major factor."

"All of our textile nylon is produced in the U.S. and all of it is CBI compliant," says BASF's Scott. "It's a great feeling to see some apparel programs that left the U.S. for Asia coming back here. We have started to see some pickup because of it and we've had lots of inquiries from CBI countries for U.S.-produced yarn. It's a work in progress but it calls for optimism."

The eco-efficiency of nylon carpets and the kind of ecological "footprint" they leave behind is being closely monitored by fiber producers, not only because of the influx of governing legislation but also because of its effect on pricing. From the consumer's point of view, three major factors will determine the success of a recycling program: emotionally, how responsible customers feel about properly disposing of a carpet after they've finished using it; economically, how much will it cost to recycle; and legislatively, will the customer be forced to dispose of it since the landfill is closed.

To date, 30 states have signed legislation preventing carpet from going into landfill, stating that they will only

specify carpet that has a recycled content and can be recycled again. BASF's eco-efficiency study conducted in Germany, comparing wool, nylon 6 and nylon 6,6, found that type 6 leaves behind a smaller eco footprint than the others, requires less energy to produce and is recyclable. Type 6 can recycle on a closed loop or cradle-to-cradle, where used carpet can break down to polymer for recycling into carpet fibers without losing any of its performance properties.

"In the carpet industry worldwide, type 6 nylon outsells type 6,6 nylon by about 10%," says BASF's Wolstenholme. "The result of this study will put emphasis on type 6 manufacturing again. Mills that are traditionally 6,6-oriented are starting to change, because they know that if they don't go down the recycled route, their business will begin slipping away. This is mainly for the commercial side. It will be some time before residential embraces this."

BASF has had a patented process for recycling old BASF nylon 6 carpets into new carpet nylon since

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1994, but only during this past year has there been an increase of interest in the program. "The difficulty is getting enough carpet back after the consumer has used it," says Wolstenholme. Not coincidentally, BASF's new Savant fiber is made with 50% post-consumer fiber content, and carries the same 10-yr warranty as other products.

DuPont Flooring also is working on sustainability issues for its commercial nylon products, particularly on how to use both post-industrial and post-consumer content. "We are also working on making fibers from bio-based GT, a new polymer development that is having some crossover into apparel," reports Wolk. Research involves a bio-based mechanism that allows making 40% of the molecule from a sustainable resource, primarily corn fructose.

The bottom line for nylon, however, is providing customers, whether trade or end consumers, with something they want to buy. By example, the soft-flooring industry is moving towards products with more pizzazz that still provide carpet's quiet warmth and softness.

"Old standard, textured Saxony or flat, consistent-look carpets still occupy a good percentage of the market, but the lower end," says Wolk. "Where we're really driving hard with partner mills is styling. There is a lot of design, styling and fashion going into flooring, both in the look of the fiber and the carpet as well as the feel of the fiber."

Mixing style and comfort with performance, last year, DuPont introduced Tactesse, a trade brand under the Stainmaster umbrella, a BCF fiber with a soft, wool-like feel created by using finer filaments with a lower dpf. It has applications in loop- or cut-pile carpets and retains stain, soil and wear resistance.

For 2001, Zeftron 2000 upholstery yarns come in new brighter, higher value colors in blues, greens and reds, along with new blending colors.

Market research is the starting point for Nylstar's new apparel fiber offerings. "We're not just developing what we think is cool, but what consumers are asking for," says Dunn. "We're saying, this is what your consumer is asking for, let us develop products specifically for you for that market. And in return we would



Maidenform's Customize It Sleek bra and panty set is made of BASF's Ultra Touch nylon.

like to have some consumer awareness promotions driven with your brand. Companies are thrilled that we're coming to the table with a complete package, including focused research."

Whether worn for sports or everyday casual wear, golf apparel, particularly men's wind jackets and shorts, outdoor jackets and sportswear, such as water- and wind-resistant garments for hiking climbing and biking, are the market segments where Nylstar sees opportunity for growth.

Nexten, Nylstar's newest fiber, targets active outdoor fabrics. It is a hollow nylon fiber that offers the same properties as traditional nylon but is 30% lighter and is almost 40% lighter than polyester.

"Mountain climbers cut off half a toothbrush to save weight, to expend less energy, so this matters," explains Dunn. "Also, for lifestyle dressing, everyone wants lighter weight garments without giving up performance features."

Meryl Techno is for extreme outdoor applications, offering abrasion resistance five times greater than standard nylon, higher tenacity and tensile strength and ten times more tear resistance than polyester. Meryl Spring is a modified full dull yarn with a soft, cottony hand and that absorbs moisture (specific weight is 20% lower than cotton) for lifestyle

dressing. Meryl Microfibre is appropriate for garments that directly contact skin, such as socks and bodywear, because it dries three times faster than cotton and 25% faster than standard nylon. Meryl Skinlife, a bacteriostatic product currently in first-phase testing, maintains the natural level of bacteria on the skin over an extended period of time, decreasing allergies and odors.

BASF emphasizes high filament-count yarns in a variety of lusters that add softness to traditional warp-knit intimate apparel, and yarns textured to improve comfort and drape for circular and seamless intimate apparel. A range of heavier deniers blend well with spandex.

Seamless constructions prefer big growth for intimate apparel, but "It's going to take more aggressive styling to have seamless garments fully realize their potential," believes Scott. "Until now, everything was matte luster but we're finally beginning to see some newness in bright sparkly yarns and bright sparkly with matte."

The next frontier for seamless may be men's underwear. After shopping the stores in Europe, "we saw some real opportunity in menswear in bright seamless garments," Scott says. "Men's underwear is changing. It's not the same old cotton broadcloth boxers or cotton circular knit jockey shorts." For the first time, menswear garments were included in the company's fashion workshops.

While all applaud the recent lowering of interest rates, fiber producers are not viewing it as a panacea and are taking a realistic view of nylon's near future.

"It takes more than just a half a percent cut and a little bit of cheerleading to turn the economy around when demand has slacked off, whether it is demand for computers, autos, housing or apparel. There aren't too many manufactured goods that haven't had a tough fourth quarter," says Wolk. "We're looking at a tough first half [of 2001] until the economy perks up and until the raw materials moderate."

Wolstenholme projects that for all fibers, the residential-carpet market will grow about 1% in 2001, commercial carpeting about 2-3%, with the nylon carpet category seeing about 2% growth. □