Spotlight On Polymers

Flat demand and high energy prices mark a setback versus a year ago, but producers believe a comeback looms

Alexander H. Tullo

A year ago, profits for commodity polymer makers were soaring as markets tightened and prices rose high above production costs. But 2005 has brought the industry back down to earth. Demand in North America hasn't improved over last year. And with little leverage to raise prices, producers have been at the mercy of ever-increasing costs for both energy and raw materials.

As if the year wasn't unpredictable enough, Hurricane Katrina, which caused unprecedented damage to the civil order and socked the petrochemical industry on the U.S. Gulf Coast, will have effects on polymer markets that can't, at the moment, be predicted.

These wrenching uncertainties are occurring against a backdrop of longer term changes in polymer markets. The industry isn't going through the consolidation it did at the turn of the millennium, when companies such as Equistar, Chevron Phillips, ExxonMobil, and Basell were formed, and Dow acquired Union Carbide. But businesses like Basell and Borealis are changing hands, and Innovene has been carved out of BP in preparation to go public as an independent
Whether old or new, polymer makers must face up to markets that, in the U.S. and Canada at least, aren't shaping up to be as strong as they were last year. According to the American Plastics Council, out of polypropylene, polystyrene, and various grades of polyethylene, only linear low-density polyethylene (LLDPE) is posting an increase in demand through June--and it's merely a 0.5% increase.

Last year, in contrast, saw a huge rebound from the previous three years of ebbing or mediocre demand. Polyethylene demand grew by 8.9% while polypropylene grew by 5.9% and polystyrene posted a 4.4% gain.

And energy and feedstock prices, already high in 2004, have risen to stratospheric levels this year. Prices for West Texas Intermediate crude oil have risen steadily from $42 a barrel in January to $69 at the end of August, just after Hurricane Katrina hit. During the same period, spot prices for natural gas traded on the New York Mercantile Exchange rose from $6.00 to $11.50 per million Btu.

Patrick W. Duke, a plastics analyst with Houston-based DeWitt & Co., says feedstock costs are now pushing up polymer prices, even though supply-and-demand dynamics pre-Katrina didn't justify the price hikes. In turn, he says, the rising prices will spur buying on the part of converters who want to stock up on resins before prices increase even more.

Duke says his benchmark polyethylene price of 70 cents per lb in January lost about 14 cents during the first quarter of this year. Later, producers implemented a 6-cent price increase and nominated another 13 cents' worth of increases through September that are yet to take hold.

In polypropylene, Duke's 69-cent benchmark price lost about 8 to 9 cents in the first quarter. Producers won a 4-cent increase in August and are trying to push through another 10 cents.

"These price increases are being driven by feedstock costs," Duke says. He says the volatile environment has created "panic buying" among converters that will likely provide momentum to polymer sales volumes for the rest of the year.

Tim Taylor, senior vice president for olefins and polyolefins at Chevron Phillips Chemical, expects polyethylene volumes to improve during the year. "Various reports suggest that supplies will remain adequate but are expected to tighten globally in the second half of this year and continue to be relatively tight over the next several years," he says.

In polypropylene, Basell says a recovery in demand and subsequent tightening of the market in the second half of the year will improve already-strong results. "The global polypropylene utilization rate was at the high 80% level in the first half of the year--and much higher in certain regions like North America--despite the destocking in the supply chain which took place earlier in the year," a Basell spokeswoman says.

Polystyrene markets still have a ways to go before they become profitable, says Christopher D. Pappas, president of styrenics for Nova Chemicals. He explains that because there is less capacity for styrene than there is for derivatives such as polystyrene, it is the balance of supply and demand for styrene, not polystyrene, that determines profitability in the styrenics chain.

Unlike the polyolefins industry, Pappas says, styrene is still waiting for a cyclical profit run-up because it has yet to work off the excess capacity built between 1999 and 2002. "The fact is that the styrenics chain has been a laggard in cyclical rebound relative to the ethylene chain or the
chlor-alkali chain," he says.

Pappas, however, says he expects styrene markets to tighten this year, with exports to Asia—which consumes about 42% of the world's styrene--sweetening an improving domestic market for North American producers. Plants serving Asia, he notes, are running at nearly full capacity. "Directionally," he says, "2006 appears to be a turning-point year for the styrenics chain, and we hope to enjoy that cyclical rebound."

**BANNER YEAR**

Domestic sales and captive use of polymers surged in 2004

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<th>Year</th>
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**NOTE:** Sales and captive use includes Canada except for polyethylene before 2002 and polystyrene before 2001. Includes high-, low-, and linear low-density polyethylene. **SOURCE:** American Plastics Council

**THESE WERE** the assessments before Hurricane Katrina hit the U.S. Gulf Coast. As of Sept 1., according to the petrochemical consultancy Chemical Market Associates Inc. (CMAI), five large ethylene crackers, together representing some 9% of North American ethylene capacity, were shut down in Louisiana because of the hurricane. Another 6.5% of capacity was operating at reduced rates. In addition, nine oil refineries were shut down, and operations at another two were slowed by Katrina.

Downstream, the hurricane sidelined Dow Chemical's 1.6 billion-lb-per-year polyethylene unit in Taft, La., which alone represents about 3.7% of North American polyethylene capacity, CMAI says. Dow also suffered the temporary loss of its Norco, La., polypropylene unit, and Pinnacle Polymers had to idle its Garyville, La., polypropylene plant; together, the units represent almost 7% of U.S. capacity.

Nearly 30% of North American styrene capacity is in two large units--a Chevron Phillips plant and the Cosmar joint venture between Total Petrochemicals and General Electric--that were shut down because of the storm, CMAI says.

DeWitt's Duke says the outages, plus railroad logistics strained by damaged infrastructure, will exacerbate the polymer buying frenzy during the second half of the year. "It looked like producers were on a path to break even in terms of demand or show a little growth in polymers," he says. "People will now try to get their hands on whatever product they can get their hands on. That won't necessarily mean more volumes; we may lose a month of production here."

Before the hurricane, Duke had already been concerned about the effects of rising feedstock costs on the economy. He argued that a slowdown in the economy may push the next downturn in polymers from about 2007 to about 2006. Hurricane Katrina "has changed the outlook entirely," he says. "It is no longer an issue of the polymer industry trying to sustain profitability, but the ability of the economy to sustain itself with all these additional costs hitting the system."
The effects of the hurricane and escalating hydrocarbon prices notwithstanding, the next downturn in the polymer industry is likely to be determined by the balance between supplies in the Middle East and demand in Asia. In May, ExxonMobil Chemical President Michael J. (Mike) Dolan told investors that "China alone is positioned to capture a third of demand growth for commodities between now and 2015."

With China becoming increasingly important, the polymer industry runs the risk that sluggish demand in China will cause Middle Eastern-made products to find a home elsewhere, namely in Europe. "China demand and expected capacity growth, combined with potential delays in Middle Eastern expansion projects, will determine the exact timing of the next trough," the Basell spokeswoman says.

Chevron Phillips says the future petrochemical business cycle will be driven by global supply-and-demand balances, and it is responding with a strategy of building new capacity where feedstock prices are lowest.

The company is in the midst of constructing its second joint-venture project with Qatar Petroleum. It is also considering an ethylene joint venture with Saudi Industrial Investment Group that will have downstream styrene, 1-hexene, polypropylene, and polystyrene plants. The plant awaits approval from Chevron Phillips' board and the preparation of a formal development plan. "The products manufactured at such a facility would be available to serve markets in Europe and Asia," Chevron Phillips CEO Jim Gallogly says.

Indeed, most companies have a strategy for the Middle East. Companies such as ExxonMobil, Total Petrochemicals, Saudi Basic Industries Corp., and Dow Chemical are pursuing integrated ethylene/polyolefins projects in the region. In addition, three companies that are in a state of ownership flux--Basell, Borealis, and Innovene--have large investments planned for the region.

In August, Access Industries, a private investment firm led by Len Blavatnik, purchased Basell for $5.4 billion from owners BASF and Shell Chemicals. Basell says Access believes in continuity for its new company and that "there is a strong consensus on vision and strategy" between the new owners and employees.

This would suggest a continuation of the gradual transformation Basell has undergone since its formation in 2000. The company has been able to reduce annual costs, for instance, by about $360 million.

It has also been focusing on back-integration into raw materials. "For its European polyethylene business, Basell wants to achieve more than 85% back-integration into feedstocks," the spokeswoman says. To this end, the company is planning to expand ethylene capacity in Wesseling, Germany, by about 280,000 metric tons per year and seeks to buy out Shell Chemicals' share in the cracker joint venture in Aubette, France.

Wrenching uncertainties are occurring against a backdrop of longer term changes in polymer markets.

**BASELL IS** also strengthening its hand in the Middle East. In 2004, the company started up the Saudi Polyolefins Co. joint venture in Saudi Arabia, which consists of a polypropylene plant and companion propane dehydrogenation facility. It is also developing an 800,000-metric-ton ethylene/polyethylene joint venture in Saudi Arabia. And it is expected to complete another polypropylene/propane dehydrogenation joint venture in Saudi Arabia in 2007.

Basell has also been realigning its asset portfolio around the world. In South America,
company is selling its stake in the Polibrasil polypropylene joint venture to its partner, local
industrial conglomerate Suzano Petroquímica. At the same time, it is buying out Suzano's share
of a Brazilian polypropylene compounding business and Repsol YPF’s share of an Argentine
polypropylene joint venture.

Basell is selling its stake in a Tarragona, Spain, joint venture to its partner Repsol. "Basell's goal
is to focus on wholly owned production facilities in Tarragona," the company says. Basell has also
bought and is expanding the Qenos polypropylene business in Australia and has sold its stake in
the Belgian CIPEN polyethylene joint venture with ExxonMobil.

A recent report by CMAI concludes that Basell has indeed improved its business. "The short-term
outlook for Basell is considerably brighter than in the past," the consulting firm writes.
"Streamlined through extensive restructuring and efficient in its business and technology focus,
Basell is well-positioned in the very cyclical business of commodity chemicals."

NOVA PHOTO

THIS END UP Packaging
foam made from Nova's
Arcel
polyethylene/polystyrene
interpolymer.

Basell isn't the only major polymers producer to be sold recently. Statoil's 50% stake in European
polyolefins firm Borealis is being purchased by its two minority shareholders, Austrian refiner
OMV, which is one of Borealis’ major feedstock suppliers in Europe, and the Abu Dhabi-based
firm International Petroleum Investment Co.

When the sale was announced in late June, IPIC Managing Director Mohamed Al Khaily noted
that the transaction would likely expand Borealis' involvement in the Middle East through its
Borouge ethylene/polyethylene joint venture with Abu Dhabi National Oil Co. (ADNOC) in the
United Arab Emirates. "IPIC's increased ownership in Borealis will further deepen the ties
between Borealis and Borouge, providing an even stronger foundation for continued growth in the
Middle East," Al Khaily said.

The other shoe dropped less than a week later when Borealis and ADNOC announced plans for a
$2.5 billion polymer project in Abu Dhabi that will include ethylene, polyethylene, and
polypropylene plants. They expect to complete the project in 2010.

BP's Innovene unit is expected to launch an initial public offering by the end of the year. BP
recently revealed that its stake in the just-completed Secco petrochemical joint venture in China
won't become part of Innovene. However, an Innovene spokesman says the company is making
headway in China through a specialized marketing and sales organization. "Over the recent
months, this approach has proven to be very successful, and we have seen a dramatic increase in the volume of the Innovene product moving into China," he says.

MOREOVER, the company is planning a $2 billion ethylene and derivatives complex in Saudi Arabia with the local firm Delta Oil.

The Innovene spokesman adds that even though the company is separating from its oil company parent, it is actually enhancing integration with raw materials. The new firm will include refineries in Grangemouth, Scotland, and Lavéra, France, that are intimately connected to associated petrochemical complexes. Because the sites have been managed by multiple BP divisions, being under one roof as Innovene will serve to improve integration, he maintains.

Innovene is also embarking on the only merger in the Western commodity plastics industry this year through its formation of a European polystyrene business with Nova. The venture, the largest polystyrene maker in Europe, is set to start operations by the end of this month.

Nova's Pappas says the merger will likely reduce costs by $40 million to $45 million annually in the combined business. This savings will come in part from the closure of capacity. While Pappas doesn't know which of the new joint venture's plants will be slated for shutdown, he does acknowledge that Nova's Carrington, England, expandable polystyrene plant was mothballed in 2002 and is still off-line.

The strategy of the venture is much like those of other ventures operating in industries where business conditions eventually improved. "We think that the new company will be entering the business at a time when the market is seeing some strength in supply-and-demand dynamics," Pappas says.

Chemical & Engineering News
ISSN 0009-2347
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Business

June 21, 2004
Volume 82, Number 25
pP. 12-15

POLYMERS' PLIGHT
Expensive feedstocks have put profits on hold for makers of high-volume polymers

ALEXANDER H. TULLO, C&EN NORTHEAST NEWS BUREAU

IN THE BAG Polyethylene export markets are strong for U.S. producers, but over the long term, plants in the Middle East, like this one in Saudi Arabia operated by Saudi Basic Industries Co., will have the edge.
SABIC PHOTO

With an economic recovery in the U.S. driving strong demand and capacity additions few and far between, producers of commodity plastics such as polyethylene, polypropylene, polystyrene, and polyvinyl chloride ought to be boasting about profits, not complaining about them.

Unfortunately, high feedstock prices are giving them reason to lament. Polymer makers have been able to increase prices, but not quite fast enough to offset the high hydrocarbon costs. And in addition to hurting their bottom lines, high oil and natural gas prices are creating uncertainty about a sustained recovery in polymer consumption.

Polymer makers have ample reason to worry. In 2003, escalating
feedstock prices put a damper on what otherwise would have been a good year. At the time, U.S. demand for polyethylene, polypropylene, PVC, and polystyrene showed nearly identical patterns. Demand was strong early in the year as inventories were built by firms that convert polymers into other products. Then in late February, natural gas prices hit record levels of $18 per million British thermal units (Btu), and oil prices climbed above $36 per barrel, driving up costs for ethylene, propylene, styrene, and other plastics feedstocks.

Polymer producers, in turn, had to push up their prices. Jerry Parker, vice president of Equistar Chemical's polymers business, recalls that polyethylene producers tacked a 5-cent-per-lb energy surcharge onto their invoices. Converters used up their inventories, and polymer demand evaporated.

By the second half of the year, customers had to buy again. “Since the inventory reduction, we have had a relatively steady increase in demand both domestically and in exports,” Parker says. And the trend continues. “It appears that business is stronger today than it has been in over three years,” he adds.

It’s tempting to speculate that this year will be a repeat of 2003. Oil prices have seesawed around $40 per barrel. Natural gas prices, though much lower than they were two years ago, are still more than $6.00 per billion Btu, about twice the norm of the late 1990s.

In turn, prices along the petrochemical chain are going through the roof. Scott McEwen, vice president of Atofina Petrochemicals’ polypropylene business, says prices for polymer-grade propylene are among the highest ever seen. From 23 cents per lb a year ago, they are now 32.5 cents—more expensive than ethylene, a rare occurrence.

McEwen explains that a big driver for propylene this year has been high gasoline prices, which are luring refiners to alkylate propylene for blending into gasoline instead of putting it on the polymer market.

But producers are optimistic about some key differences between this year and last. Kevin McQuade, polystyrene business director at BASF Corp., says he has seen strong polystyrene demand throughout the first half of the year, without the second-quarter slip he saw a year ago. Moreover, he says the demand represents genuine pull from the marketplace, not simply converter inventory buildup like last year.

It is a positive sign that converters and resin producers are busy trying to keep up with consumer demand, McQuade says. “When we look at inventory at both producers and converters, we see that the entire chain is still fairly lean, so we do not at all anticipate a
dramatic falloff in demand as we did last year,” he says, noting that he expects demand in North America to increase by 3% this year, instead of decreasing by 3.5% as it did in 2003.

Producers of other resins agree. Atofina’s McEwen says high polymer prices—more than 50 cents per lb for polypropylene—are keeping converters from buying more material than they need to. “If people had the option, they would not buy; they would wait for the price to drop,” he says. That they are still buying under such conditions tells McEwen there is strong demand. He predicts polypropylene demand will post 6% growth in North America this year.

Barry Hendrix, vice president of sales at OxyVinyls, a joint venture between Occidental Chemical and PolyOne (formerly Geon), says PVC demand is 3.6% ahead of last year. He partially credits low interest rates. “The housing market has been very strong for an extended period of time,” he says. “There is no doubt that low interest rates are a significant driver of that.”

High North American prices for natural gas, which determines costs for about two-thirds of U.S. ethylene, had until recently made the U.S. industry uncompetitive in a world that mostly cracks oil-based naphtha. With natural gas currently cheaper than oil on an energy-content basis, this situation has at least temporarily reversed. As a result, Equistar’s Parker is seeing increased strength in polyethylene exports.

I SCREAM, YOU SCREAM Nova Chemicals is trying to boost growth with its Zylar styrene-methyl methacrylate copolymer resin for packaging.

DEMAND IN CHINA, Parker adds, has been particularly strong, soaking up excess capacity globally. Moreover, the declining dollar has made it difficult for Asian finished products makers to export to the U.S., in turn boosting demand for U.S.-made products. “The overall economics for converter products coming into the U.S. has been weak,” he says. “There are higher freight rates. There are higher costs for ethylene. The domestic producer is less impacted by imported resins or products.”
Rick Salvador, vice president of Nova Chemicals’ North American styrenic polymer business, says strong Asian demand has aided the world market for styrene. “Demand in Asia is so large it consumes everything,” he says. China, for example, absorbs 17% of global demand for styrene. He says it would take five new styrene plants to cover China’s growth through 2007. But instead of building all the plants it needs, China imports styrene.

The strong demand has boosted operating rates at all kinds of polymer plants, which had been running well below their capability because of the huge capacity increases that occurred between 2000 and 2002 and because polymer demand grew little between 2001 and 2003. Since May 2003, polyethylene operating rates have climbed from 80% to just over 90%, Parker says.

Pedro Suarez, Dow Chemical’s commercial vice president of plastics for North America, says the polyethylene industry has finally put the worst behind it. “After seven years of margin compression in the chemical industry, increased demand and continued economic growth began to move polyethylene off the bottom of the cycle in 2003,” he says.

In polystyrene, BASF’s McQuade says operating rates are in the low-80% range. However, Nova’s Salvador says styrene operating rates of close to 92% are more telling because there is much more capacity for polystyrene than styrene. At 92%, he says, profitability in the entire styrenics chain improves.

OxyVinyl’s Hendrix says PVC operating rates have climbed from about 90% at the beginning of the year to 95% today. Some markets are extremely tight because of an April explosion at a Formosa Plastics plant in Illiopolis, Ill., that killed five workers and shuttered part of the plant indefinitely. Tile makers are said to be looking for PVC for flooring anywhere they can.

Resin producers say a good balance in supply and demand for their products as well as high raw material costs have combined to push their selling prices upward. “Producers are adamant about getting their prices up,” says Patrick Duke, a polymers analyst with Houston-based DeWitt & Co.

And prices are hitting record levels. For example, Duke says the benchmark price index for polyethylene has risen from 46.4 in December to 52.2 today. In December 2001, it was 31. Similarly, the polypropylene price index has risen from 43 in December to 53 today. The annualized average price index for polyethylene so far this year is 49.2, even higher than the 48.7 reached in 1988 at the peak of the petrochemical cycle. When adjusted for inflation, however, the current index is lower.
Duke says feedstocks are more responsible for the higher prices than the supply-and-demand balance. William Campbell, vice president of polyethylene at Atofina Petrochemicals, agrees. “What we’re seeing now is a sustained increase in raw material costs with little downside,” he says.

But feedstock costs alone didn’t push up polyethylene prices, Equistar’s Parker says. After a long period with no help from market tightness, resin producers have finally found additional leverage, he says. “Our ability to move through the price increases is much greater today than it had been three years ago. The operating rate improvement is supporting the effort as well.”

Craig Blizzard, marketing director at Basell North America, has seen the same effect in polypropylene. “Customers generally understand the need to cover our costs,” he says. “But now there is more of an influence from supply and demand.”

Resin producers have also succeeded in their two-year program to take customers off “price protection,” a system whereby large customers’ contracts allow them a grace period of 30, 60, or even 90 days after a price increase is announced.

Price protection made it difficult for resin producers to keep up with increased feedstock prices, BASF’s McQuade explains. Sometimes, he says, profits were lost permanently because customers, knowing that prices would rise when their price protection expired, filled up their inventories. Then when the price hikes kicked in, customers used up stock rather than buying more resin.

Resin producers resorted to price protection out of desperation to win business during previous bad times. However, Nova’s Salvador says the practice is being uprooted. “It’s been going down continuously. Our CEO must sign off on any price protection we put into new contracts,” he says. “We have not asked him to sign off on anything.”

Resin producers say changing price protection is already making it easier for them to raise prices. McQuade believes there will also be long-term rewards. He explains that lack of price protection puts more pressure on converters to pass their costs along to their consumers. When polymer makers were absorbing the high feedstock prices, converters didn’t need to talk to their own customers about escalating costs. “There is some pressure on converters to put pressure on the final consumer,” he says.
ANOTHER CHANGE that polymer producers hope is permanent is the increase in price elasticity of demand—the sensitivity of demand to higher prices. Polyethylene demand, for instance, has typically tumbled when prices have hit 50 cents per lb because converters see this as a signal to stop buying. In response to the collapse in demand, prices typically tumble as well.

With polyethylene prices marching right past this mark and other resins at unusually high prices, producers hope they are seeing price elasticity of demand change to their advantage. “Elasticity is at a higher level now than what we have historically seen,” Campbell says.

And despite their ability to raise prices, resin producers unanimously agree that they still aren’t keeping up with the increase in their own raw material costs. Jim Telljohann, general manager of styrenics at Chevron Phillips Chemical, says raw material prices still weigh on resin producers’ profits. “We have been successful, but there still are difficulties,” he says. “Margins are still being squeezed.”

With such poor profitability, producers say it will be a long time before they see the incentive to invest again. Dow’s Suarez predicts that for the foreseeable future the only capacity expansions that will occur will be small projects to improve plants. “When our margins are under pressure, we are unable to continue the pace of investment,” he says. “At this time, it is vitally important for Dow and its customers that margins are restored to profitable levels.”

Basell’s Blizzard says a lack of investment underscores how difficult the last trough of the business cycle has been for polypropylene. He says Basell has the potential to add capacity by upgrading and restarting polypropylene lines it had mothballed, but it currently has no plans to do so. “Our margins have to get better before we bring on additional capacity,” he says.

OxyVinyl’s Hendrix says that in the entire chlorovinyl chain from chlorine to vinyl chloride to PVC, capacity is being shuttered, much less being added. He blames profitability. “Even though we are having a tighter market, due to the high cost of raw materials, profit margins are less than they were a year ago,” he says.
Producers are also concerned about the longer term impact on demand posed by higher raw material prices. For example, Parker says that over time, high polyethylene film prices may prompt end users to trim down the amount of packaging used for their products. “It is all about the higher energy cost and the impact on growth. I’m worried about that,” he says.

Parker forecasts that in the coming years, low-density polyethylene demand will be flat, while linear low-density polyethylene and high-density polyethylene demand will rise at a 4 to 6% annual clip.

Polypropylene potentially faces a more direct challenge. Much of its growth has been because its high versatility at a low price drives substitution of both engineering plastics and high-volume plastics such as high-density polyethylene. With the closing of the historical gap between ethylene and propylene costs, and with propylene now selling for even more than ethylene, this advantage may start to be undermined.

Monte G. Edlund, vice president of Huntsman Polymers, contends that polypropylene’s advantage has not eroded. “Sooner or later demand has to slow down to GDP [gross domestic product]-type growth, but on a cost-per-cubic-inch basis it is still the best buy,” he says.

Going even further, Basell’s Blizzard doesn’t think polypropylene will slow down from its usual two-times-GDP growth rates anytime soon. “We have no expectations that demand will let up,” he says. “If anything, we have expectations that it might accelerate.”

As polypropylene makers improve their products’ properties, new markets emerge. For example, as the clarity of the polymer improves, polypropylene is able to compete with polyethylene terephthalate in some markets. As processability improves, it more effectively competes against polystyrene in thermoforming markets.

Meanwhile, to reinvigorate a product that has slowed to one-half GDP growth, polystyrene suppliers have been looking to specialty grades as well as copolymerization and blending polystyrene with other materials.

Nova, for instance, has been pushing copolymers of methyl methacrylate and styrene. “We have spent money in the last few years to develop new products that are designed for polystyrene processing technology,” Salvador says. “There are new products for use in microwaveable applications and fast processing products that can compete with polyester resins. They are styrene based, but they are not traditional polystyrenes.”

McQuade says BASF has been blending its Styrolux styrene-butadiene copolymers into polystyrene to improve polystyrene’s toughness without losing its inherent clarity. The
company has had success in markets such as the clear baskets used to package strawberries and other such fruits at grocery stores, warding off a potential threat from polyethylene terephthalate.

Telljohann has a similar strategy with Chevron Phillips’ K-Resin styrene-butadiene copolymers. “Everybody tries to move up the food chain—to improve the properties and take market share away from the next set of markets,” he says.

Makers of every polymer want sustained growth. The more pressing issue now is coping with the last obstacle to fully restored profitability: high feedstock prices. Companies would love feedstock prices to ease, but they realize that’s unlikely in today’s volatile energy markets. Instead, they would be content just to pass along the costs to their customers.

Atofina’s McEwen sums up the plight of resin producers: “At 95% operating rates, we wouldn’t expect to be in the financial situation we are in today.”

CONTINUE READING MORE ABOUT PLASTICS IN THE NEXT STORY:

**GENIE IN THE BOTTLE**
PET makers wish for new bottle markets, lower feedstock costs, and better market conditions

Chemical & Engineering News
ISSN 0009-2347
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