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ADHESIVES Raw Materials FACTS

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ECONOMIC VOLATILITY

It's hard to ignore the market volatility of recent weeks. Many companies experienced a significant erosion of market capitalization delivered by stock market gyrations. Fuel prices at the pump are up one day and down the next. Despite the hurricane-force economic winds being reported daily by the media, it's been pretty quiet in the adhesives industry—business as usual, even.

The adhesives raw material supply situation remains largely unchanged regardless of a Jackson Hole Fed meeting, the Standard & Poor's downgrade of the U.S. credit rating, 400-plus-point down (or up) days on Wall Street and crude prices seesawing between $80 and $100 per barrel since the beginning of July.

Upstream, chemical producers that supply adhesives raw materials say they have seen no decline in demand since reporting Q2 earnings. "We have not seen any change in orders at all," Seifi Ghasemi, CEO of Rockwood Holdings told *ChemicalWeek* recently. "The state of nervousness on Wall Street does not always match what is happening in the rest of the world." Other chemical companies echoed the sentiment.

"I don't think we're heading for a double dip," Dow Chemical CEO Andrew Liveris told the *Wall Street Journal* in late August. The recent economic news created a psychological blow that "has not been very helpful," he said. If the economy becomes weaker than Dow expects, "we'll dial back," Liveris said, "but not yet."

Meanwhile, adhesives raw materials prices are holding steady. That's because volatility in energy and feedstock markets must move prices in a clear direction and hold them at higher or lower levels for a sustained period of time before a price shift in downstream products is felt. It often takes several months for price adjustments, either up or down, to move down the supply chain and begin to influence the cost of adhesives raw materials; and even longer to be reflected in adhesives prices. At this point, most in the industry are still processing—and passing on—the run-up in prices from earlier in the year.

Several weeks of economic craziness has only reinforced the existing wait-and-see attitude. Until there's a clear direction in raw materials markets, players are sitting on the sidelines and waiting for distinct trends to develop. This means that, despite all the bad news in the media these days, for adhesives it's still the same old story of tight supply, steady demand and record price levels. ■

HOT MELT SHORTAGES CONTINUE

Stock markets may have behaved unpredictably in recent weeks. And oil prices have followed suit. But the fundamental story for hot melt raw materials has remained steady: supply shortages, high prices and ongoing supply challenges.

Supply

Forecasting—frequently and accurately—is more important than ever for the hot melt supply chain these days. That's because a number of suppliers—and their suppliers—will take units offline this fall for extended maintenance outages. This is stretching the supply chain taut and leaving little room to secure extra supply when demand accelerates or customers miscalculate. Five major North American crackers plan outages in September and October. These will impact supply through the end of the year.

Suppliers have built inventories in preparation of the outages but given the already tight supply landscape, this has meant that they have held adhesives and other customers to exact allocations and forecasts. There has been no extra material available. Given the existing market tightness, it will take several weeks after plants come back online before the supply pipeline is filled and any discussions of increasing order levels can take place. That's as long as all outages go according to plan. If facilities encounter unexpected problems or if a hurricane threatens the Gulf Coast region, the outages could last longer.

These extended shutdowns also offer suppliers the opportunity to continue to reconfigure their operations to accept greater volumes of lighter feeds, which could further reduce the supply of hot melt raw materials. According to DeWitt, the September to November turnaround season is a "once-in-a-five-year opportunity to go lighter."

The outages will impact a broad spectrum of hot melt raw materials, including SBS, SIS and SEBS rubbers, and hydrocarbon-based tackifiers. The outages will reduce North American feed supply to produce C5 tackifiers by 10 to 15%, DeWitt says.

EVA supply

The outages will not, however, affect EVA supply, which has eased slightly elsewhere around the globe. Asian and European markets have seen some softening in EVA prices in recent weeks. This effect has not extended across the oceans to North America. Domestic suppliers argue that EVA supply is still tight and sales controls have remained in place.

With the end of many government subsidies for photovoltaic panels, the industry anticipated an easing of EVA supply, which could free up more material for the adhesives market. This appears to be a very short-term phenomenon. It has helped to defer some EVA price increases that were on the table earlier in the summer and made some material available in the spot market, however, it is only temporary. In the longer term, demand for photovoltaic panels—and the EVA required to make them—will rebound with the economy and rising energy prices. EVA supply will continue to cater to that higher-margin demand.

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UNCERTAINTY & THE SUPPLY CHAIN

The economic downturn brought a heightened focus on the supply chain. Security of supply was paramount and that meant that companies were digging deep to gain greater understanding into the businesses of their suppliers and the companies that supplied them. At the same time, cost control took center stage with companies adopting lean policies and decreased inventories.

Now, many of the strategies that companies deployed to save money and weather the financial crisis are having the opposite effect, rendering the supply chain more fragile than ever. Security of supply remains of critical importance but a one-size-fits-all approach to procurement, especially for adhesives, could backfire.

When demand disappeared at the end of 2008, many companies were caught holding expensive inventories that they could not sell. Since then, companies have improved their forecasting and sought to purchase the minimum needed to satisfy customer demand. The problem is that this strategy requires transparent communication of supply and order levels throughout the supply chain and superior demand forecasting, something that is difficult in the best of economic climates.

Now, with the end of the year approaching, companies are once again trying to operate with the leanest of inventories. When it comes to adhesives, especially hot melt formulations that are experiencing extremely tight raw materials supply, these strategies may prove more dangerous than beneficial.

Part of the problem is that at many large customers adhesives represent a relatively small part of the procurement budget. And a one-size-fits-all purchasing approach is applied to adhesives and commodities alike. But in the current market, adhesives deserve special treatment. That's because product inventories are low throughout the supply chain and suppliers of adhesives raw materials are holding their customers to the letter of their allocations and forecasts. There's no extra material in the supply chain to accommodate for minor demand spurts or miscalculations.

This tight situation has been especially evident in 2011 as demonstrated by the increasing number of "emergencies"—instances where a customer miscalculated demand patterns and required extra material, often on very short notice. When supply chains are healthy and inventory buffers well-stocked, suppliers can usually accommodate some unexpected requests. However, in today's supply chain, these emergencies inject unneeded chaos into the supply environment, driving up costs and inefficiencies.

A recent report by PricewaterhouseCoopers reveals that in today's raw materials environment lean, price-driven procurement strategies may end up costing customers more in the long term, especially for components that are vital but subject to shortages, like hot melt adhesives. Adapting procurement strategy to include price, agility, quality and value and choosing to partner with value-driven suppliers can help mitigate the risk of supply disruptions, the report says.

"A relationship which is purely transaction-based and focused on driving down the price is unlikely to utilize the value and the insight that component suppliers might be able to offer," the report concludes. "Such insight can be instrumental in preventing inefficiencies or other problems arising later."

Adhesives customers can offset some of the current market risk by better understanding the dynamics of raw materials supply, improving forecasts and providing frequent updates to suppliers and judiciously holding greater inventories of products that are threatened by upstream supply outages. ■

SNAPSHOT: WATERBORNE ADHESIVES

VAM: The supply of vinyl acetate monomer (VAM) stabilized somewhat in recent months as a number of operations returned to normal following outages earlier in the year. The VAM market remains tight as inventory levels are still well below average and demand is strong, especially for derivatives PVOH and EVA. Several plant turnarounds in the third quarter will maintain pressure on supply.

North American VAM prices are up 10 to 15% in 2011. VAM producers say margins are too slim and that rising upstream feedstock costs have not yet been passed on to customers.

CORN: The USDA continues to downgrade this year's projected corn yield, which means that production will be lower than expected. Wet spring weather delayed planting. Hot summer temperatures in the Midwest and a drought in Texas have hampered growth.

Corn futures prices are up 15% already in 2011. Many commodity analysts believe that the USDA is overestimating the current crop, which could boost prices further as harvest begins. This is increasing the cost of corn starch used in dextrin-based adhesives.

POTATO STARCH: Potato starch is produced in Europe and exported globally for use in dextrin-based adhesives and other applications. Poor weather conditions during last year's growing season and harvest resulted in very limited potato yields and disappointing starch production. Demand for potato starch outstripped supply and there were no carryover stocks going into the current season. This set the stage for 10 to 15% price increases in 2011.

Growing conditions have been equally challenging this year. Drought and flooding are expected to reduce potato yields by 10 to 25% in Europe, according to KMC, a Danish potato starch producer. Market demand for potato starch, fuelled in part by shortages in other starch crops, including tapioca, is at an all-time high. Many companies have announced shortages and further double-digit price increases are anticipated in 2012.

HIDDEN COSTS: TRANSPORTATION

Reduced capacity in the trucking industry, coupled with rising costs, are driving up transportation costs for adhesives.

The downturn pared trucking capacity by eliminating many small and medium businesses, forcing larger companies to cut fleets and driving many independent truckers out of the business. Now, even though demand remains below pre-recession levels, competition for limited capacity is moving freight rates higher.

Base freight rates are up 5 to 10% in truckload and 10% in less-than truckload (LTL), but shippers are now paying twice that with fuel surcharges added in, Bill Witte, an economist with FTR Associates, a logistics forecaster, told a recent freight conference.

Higher costs are behind much of the rise. According to the U.S. Energy Information Association, by the end of August diesel prices had climbed 25% in the past 12 months. *Logistics Management* reports that the industry's costs, excluding labor, are up 8.3% in the year-over-year period ending May 2011.

Labor costs are also pushing freight prices higher, driven by a growing driver shortage. Driver numbers dropped during the recession and have yet to rebound. Some in the industry fear they will not come back fast enough to meet growing freight demand.

Freight volumes are increasing at 4% per year while driver numbers are growing by less than 1% per year, according to industry analysts. The problem is compounded by higher compliance, safety and accountability (CSA) standards imposed by the government. These have forced many drivers out of the pool, including older drivers who may not want to be monitored by the government and drivers with poor driving records. In addition, reduced financing options make it increasingly difficult for new drivers to pay for the training needed to enter the field.

As a result, the top trucking companies are being forced to raise driver pay rates in order to attract qualified drivers and reduce churn, the ceaseless migration of drivers between companies. Companies are also paying more for training.

According to a recent survey by CK Commercial Vehicle Research, 40% of responding fleets are feeling the impact of the driver shortage. This is limiting their ability to add capacity and grow for the future.

New regulations that reduce drivers' work hours by one hour per day could go into effect in 2012. The resulting loss of driver hours would hit the industry hard and dramatically boost the number of drivers needed to meet current needs.

Given the current economic uncertainty, capacity will remain tight into 2012. Any increase in demand, however, will quickly drive up freight rates.

"We haven't got there yet, but when the economy starts to improve consistently I think the market is going to create very strong pricing opportunities," Knight Transportation CEO Kevin Knight told *The Trucker* recently.

UPDATE: ACRYLATES

The acrylates market appears to have finally stabilized following the price volatility and supply shortages of 2010; although structural tightness remains and prices are holding steady.

Slowing demand, driven largely by ongoing softness in the paints market—a significant end-user of acrylic monomers and dispersions—has helped to ease supply tightness in the acrylics chain. After these recent developments in the market, overall acrylic monomer prices remain up around 15% in 2011.

Now, feedstock prices are firming again. Propylene prices climbed steadily through May but retreated from May highs in recent months. According to CMAI, they may have bottomed in August and are forecast to rise again. A number of major cracker maintenance outages in Q3 will take capacity out of the market and tighten supply. This should support current propylene pricing levels and could send prices higher before the end of the year.

Meanwhile, structural tightness in the upstream acrylic acid supply chain continues. Demand for diapers and other products made from superabsorbent polymers (SAP), which compete with other markets, including adhesives, for the supply of acrylic acid, held steady throughout the recession. This dynamic will maintain the pressure on acrylic acid supply in coming years and could once again tighten acrylic monomers as the global economy recovers.

HOT MELT SHORTAGES CONTINUE

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Pricing Outlook

Upstream feedstock prices softened somewhat in recent months. But the only resulting good news was that suppliers were willing to concede somewhat on their latest round of price increases. This halted the rapid upward pricing trend and allowed pricing to stabilize—to the relief of many in the industry. Suppliers have not, however, offered any concessions on prices. There is a sense in the industry that all involved are waiting to see what markets do and where demand levels will shift in the coming months.

As has been the case in recent years, the price of butadiene has continued its steady upward trend, doubling in 2011. In September, it retreated slightly from an all-time high but tightness related to the upcoming cracker turnarounds should mitigate any further price softening at least through the end of the year. Suppliers of butadiene-related raw materials are still playing catch-up from the 2011 increase. SBS suppliers announced price increases in August in response to the higher feedstock costs.

With the level of intense volatility in global markets, the frantic price escalation in many hot melt raw material prices appears to have paused while suppliers decipher the implications of the economic headwinds. As a result, there is currently no clear direction for future pricing trends. During Q2 earnings season, upstream chemical companies reaffirmed their commitment to offset their rising costs by continuing to increase prices to their customers, including those in the adhesives industry. Supply of many hot melt raw materials is tight and precarious. Most in the industry are hoping for the best and waiting to see what new directions come in the fall months.

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