



GLOBAL PLASTICS LETTER

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“A World of Plastics Information”

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TWELFTH YEAR

Dear Colleague:

June juncture juxtaposes jobs...the global job and revenue recovery continues. Juxtaposed over the middle east/north Africa political turmoil, disruptions of oil supplies (which eventually affect our industry) are minimal at this point. Surveys we conducted in late May indicate a level of activity in both the manufacturing sector as well as among distributors, approaching record levels, albeit the inflation effect, considering recent upward price moves. Worries about higher prices are spurring some stockpiling: especially in the plastics and rubber sector...adding to the flurry of purchasing activity we have been seeing in our industry. Attempts to hedge against price hikes, and ensuing inflation are causative...however some manufacturers attempt to increase prices on orders placed but not fulfilled. The boom in technology sales and business investment (estimated at 12% this year, following 15% last year) shows no signs of letting up...companies are migrating to more powerful, energy-efficient hardware – opens up growing market for related companies using high performance plastics.

Look for substantial market share gains by carbon fiber reinforced thermosets (50% lighter than steel). Raw material prices are still surging...chemicals, plastics, rubber, metals and most commodities; and of course oil, natural gas and gasoline. Expect the energy component to remain high by historical standards, albeit down from the peaks earlier this year. Some 2011 forecasts based on usually reliable economists' consensus: Inflation at 3% this year, up from 1.5% in 2010; crude oil in a \$95-\$105 trading range and natural gas \$4.60/MMBtu (up from \$4.51 last year).

TRENDS: The global plastic pipe market is projected to expand 7.3 % annually to 20.3 million m.t by 2015... Asia/Pacific leads this growth but just slightly ahead of N. America and MiddleEast. NPE, April 2012 (in Orlando, Florida for the first time) is expected to top 2009 attendance and exhibitor count in Chicago. Attendance at SPE ANTEC in Boston in May jumped 31%. Burgeoning market for roll up truck doors is featuring extruded ABS sheet, replacing sheet metal over plywood...Pexco is the producer. Lucite recently celebrated its 75th anniversary! Graybar Electric just turned 142. Popular Plastics & Packaging (India) in its May 2011 issue, published a valuable guide to Polymers in Medical Applications...recommended market research tool. (email: colorpub@vsnl.com). Also in its May 2011 issue, Modern Distribution Management (<http://www.mdm.com>) lists market leaders in distribution... top industrial, electrical etc. distribution companies, including Top 10 Plastics Distributors. Customer Service leaders in all industries are a fascinating study held by INC. magazine...some surprise leaders offering lessons to all businesses are Ritz-Carlton and Zappo's.

OUTLOOK ASIA: by Mal Binnie, our special Pacific Rim correspondent in Australia

Markets in Australia and New Zealand continue with steady growth. The \$A continues at about 1.06 to the \$US and

is expected to strengthen further in the near future. For those that remember Arnold Mouw (Cadillac Plastics, Laird and Mulford Plastics) he has now turned full cycle by joining Dayco Australia. (Dayco was the original owner of Cadillac Plastics). Graphic Arts Services Assoc is now looking forward to the PrintCom Expo in Melbourne after a very successful Printex in Sydney. PrintCom is running 13-15 September 2011. Laurie Green MD Cut to Size Plastics reports a very successful presence at Ausplas in Melbourne, they were the only Engineering plastics at the show. Speculation abounds about changes in the Engineering Plastics market in Australia- details next month. Global Industry Analysts have reported that the highest growth in the Film and Sheet markets are expected to come from AsiaPacific. Growth of at least 4% will be driven by China and India.

Sinopec and Sabic have announced significant expansion of production in China including 260,000 tons PC plant and upgrades to compounding capacity. PC Film capacity is also being increased in Shanghai and Nansha. An optical grade Lexan and textured products are being produced at Nansha. Sinopec/Sabic continue to forecast further growth in consumer electronics, electrical, solar, security and automotive industries. DuPont Performance Polymers announced plans to build a new Zytel plant in Singapore and to expand its compounding operation in Shenzhen, China. President of Ford Asia Pacific and Africa stated that two billion people will buy cars in China by 2020. Plastics will continue to grow significantly in the automotive industry. To meet this growth John McGavigan Ltd Scotland will make another entry into this market by building a factory in Suzhou to produce components such as dashboard and entertainment centre controls. This is a great customer for PC and Polyester films.

Welltec Hongkong has responded to the high Indian tariffs on machines by entering a JV in Ahmedabad India to manufacture machines locally. Rajoo Engineers has recently increased its capacity by 30%, President Sunil Jain stated: "our objectives are not just capacity but to improve quality, increase consistency and reduce lead times". Rajoo have recently commissioned a blown film line in Lahore, Pakistan. As India continues to emerge as a Global powerhouse local companies can benefit greatly. Kalora (KET) has also taken up 15% equity in Gloucester Engineering further expanding KET's reach into global markets. Rhodia India Pte Ltd is the new company after acquisition of Rajasthan based PI Industries Ltd. DSM NV has restructured in India bringing its operations under DSM India Pvt Ltd with Mr Raj Chopra as President. Dr Prakash D. Trivedi has been appointed Chairman of the IPI with Prof. E.N Narayanan as President. V. Sandargarjan, Managing Editor of *Popular Plastics*, India has detailed in the March edition the vastly increasing use of plastics in the automotive industry. Ian Grant of Mulford International states:

"After a sluggish start to 2011 we are finding business improving each month in Australia, but the market in New Zealand is still flat with no positive news ahead for the next few months.

There will be a lot of new business activity around the Rugby World Cup which starts in September and with the traditional increase in activity leading up to Christmas, Q3 and 4 looks like being very good. One noticeable change I have noticed from being back in the market is the huge increase in the number of flat bed digital printers. This has changed the face of the market with more printers, printing direct onto substrates. Mulford Plastics recognised the growth in this market segment very early on, and have worked closely with a number of manufactures and can now offer the market a wide range of substrates for this specific industry segment."

OUTLOOK EUROPE: by Ralph Ammann, our special European correspondent in Germany

Pipelife Norge AS, Surnadal, Norway, has recently placed an order for one of the world's biggest large-diameter pipe extrusion lines from German manufacturer Battenfeld-Cincinnati, to produce fully walled polyolefin pipes with diameters of up to 2,500 mm at their plant in Stathelle, Norway. The company specializes in manufacturing pipes of enormous lengths and is said to be the only company worldwide to produce pipe segments with a length of up to 600 m for offshore applications. With the line now on order the Norwegians are extending their product portfolio to pipes of up to 2,500 mm in diameter. They have chosen several die change sets capable of producing pipes with a wide range of diameters from 1,200 to 2,500 mm and with wall thicknesses ranging from 48 to 96 mm. Basotec, a special foam material of BASE, is first being used for the insulation of pipe systems of a LNG tank terminal in Korea. LNG is natural gas which is liquefied at very low temperatures for an easier transport and storage. As the temperature of LNG must not rise above -162°C (-259.6°F), an effective insulation of the pipes is indispensable. The Basotec pipe cover should be more energy-efficient as it is thinner by 20 % and offers thermal insulation which is up to 50 % better than conventional insulating foams. Basotec is an open-celled foam on basis of melamine resin, which is flame-resistant and can be used at temperatures up to 240°C

(464°F) while keeping its characteristics over a wide range of temperatures. Evonik Industries and Swagelining Limited, Glasgow (UK) are working on a new concept to replace the stainless steel pipes widely used for the oil production in great ocean depths. The two companies are developing a combination of well-established liner technology of the British manufacturer and a specially fitted polyamide 12 from Germany. The technology based on PE liners has been well established worldwide for many years in water injection pipes. Vestamid should now allow further developing to protect oil production pipes at temperatures up to 100°C (212°F). Black steel pipes in contrast to the stainless steel pipes mainly used by now are significantly more cost-effective and easier available. However, they are more susceptible to corrosion. Black steel pipes with liners based on Vestamid on the other hand are said to be less susceptible to internal corrosion and offer advantages in price and weight. In the current stage of development, the synthetic material is integrated into the well-established technology of the British company. Ultrason SL, Barcelona, Spain, has announced the new Sonorus-1G, the first high precision moulding machine based on ultrasounds and exclusively designed for the reproduction of mini and micro scale pieces of PE, PA, PMMA, PVC and PBT.

OUTLOOK NORTH AMERICA: by Bill Shields, North American correspondent in the U.S.

Manufacturing growth remained strong last month but a slow down is expected this summer. The Commerce Department reported that GDP grew at a 1.8% annual rate in Q1. Manufacturing, however, has helped power the economy along. Inventory levels in Q 1 rose at an annualized \$43.8 billion rate, significantly up from Q4's \$16.2 billion. Companies are on pace for increased sales ranging from 17.5% up to 40.0% over a year ago. Materials are on pace for a 51% profit jump, on track for 32.9% profit growth. Price increases for PVC, HDPE, PP, PVDF and acetal all occurred in March and April. Get ready for more. The two most scarce resin materials, PVDF and acetal, were greatly affected by the tragedy in Japan. The Taiwanese resin manufacturer Formacon cannot supply acetal resin as they are dependent on Japan. Additionally, Kureha, which is the 3rd largest supplier of PVDF was located in the Red Zone of the Japanese impact area and has temporarily closed their manufacturing. This will put even higher demand on Arkema and Solvay to fill the gaps of demand. Global demand will continue to push pricing up on raw materials. The materials slated to rise in price in May and June are PP, HDPE, CPVC and PVDF. The good news is that the growth in sales through the Q1 2011 was in strong double digits. Virtually everyone had an excellent sales year in 2010 which should continue. U.S. manufacturers have placed near the top of world rankings in productivity gains over the past 3 years. Companies are producing and profiting more than when the Great Recession began. Measured in growth, the American Economy has outperformed those of Britain, France, Germany, Italy and Japan. According to the OECD, U.S. productivity doubled from 2008 to 2009 and then doubled again in 2010. Exports rose at a rate of 8.5% while imports dropped 13.6%. U.S. companies are benefiting from a weaker dollar and strong overseas growth. Manufacturing growth remained strong last month but a gentle slow down is expected for the summer. The Commerce Department reported that GDP grew at a 1.8% annual rate in Q 1.

PRICING: Upward movements abound in Engineering Thermoplastics, especially in POM, PBT, PA and PMMA. PP, PE and PS go up low double digits as demand continues to climb globally. New capacity for PC and PMMA is announced (see below) but the onstream dates are longer term.

MANUFACTURER/DISTRIBUTOR BRIEFS: Plaskolite adds continuously cast acrylic sheet (called Optix®CC) to their sheet product line. . . said to offer higher molecular weight with outstanding optical properties. A.M Castle's Total Plastics unit reports 1Q 2011 results – sales volume up 21% year over year. Polymer Industries survives Alabama tornado incident, with minimum disruption despite being at the center of the tragic weather event.

MERGERS/ACQUISITIONS/ALLIANCES/DIVESTITURES AND EXPANSIONS:

Evonik's CYRO unit re-brands some Acrylite® sheet products. Victrex establishes Japan Technical Center to further market penetration for its PEEK™, PAEK and APTIV® products. SABIC forms JV with Mitsubishi Rayon in Saudi Arabia for MMA and PMMA production and with Sinopec for PC resin in China. SABIC IP sees its Ultra-Stiff Lexan® Thermoclear™ sheet used in athletic stadiums globally (Poland being the latest) as roof

material to better withstand wind and snow loads. Bayer MaterialScience substantially expands PC resin capacity in U.S.(Texas)and Germany. Blackfriars adds Plastic Solutions,(KY); Plastic Products,(OH) and VicWest,(Canada) to its North American plastic shapes distribution portfolio.

INDUSTRY INTERVIEWS: continuing our interview with Rich Cort, Kydex LLC

Q. It's rare for a company to be named for its principal product as yours is...how did this evolve? What was the reason for changing your name from Kleerdex? Are there other products than Kydex sheet?

A. Changing the company name from Kleerdex Company, LLC to KYDEX, LLC was one of the best marketing moves we have ever made. The brand name KYDEX was much more widely known and recognized than our company name Kleerdex. It was not uncommon for me to contact people and introduce myself as being with Kleerdex. The listener would say "with who", not recognizing the company name, and I would then say "with KYDEX", and there would be immediate recognition. All products manufactured by KYDEX, LLC are sold under the KYDEX brand except for Eslon DC Plate. We have the ability to apply a static dissipative coating onto transparent polycarbonate, acrylic and PVC sheet for clean room applications within the semiconductor industry. This technology and product was developed by Sekisui and we initially were importing Eslon DC Plate sheet for resell here in N. America, but now we have the technology in Bloomsburg to apply the coating ourselves.

Q. What are your principal markets? Product applications?

A. Our principal markets are transportation, healthcare and building products. In transportation, common applications for KYDEX sheet are thermoformed components for aircraft, train and bus interiors, such as food trays, seat backs, armrests, window surrounds, wall and ceiling panels, and bezels. In healthcare, KYDEX sheet is frequently thermoformed and fabricated into medical imaging and diagnostic device enclosures/housings, medical cart tops, and hospital bed components. In building products, KYDEX sheet is often used as wall covering in institutional and commercial environments, as a laminate for store fixtures, and for acoustical partitions and ceiling panels.

Q. What are your online initiatives? Since even eyeglasses can be bought on the internet, can Kydex and how?

A. Currently KYDEX sheet cannot be purchased online but we have discussed the possibility of moving in this direction. KYDEX transactions are more of a business to business sale and not business to consumer, so ordering portals for our customer base makes more sense right now.

Q. What are your manufacturing advantages? Where is product made globally? Who are your principal competitors?

A. Our manufacturing facility in Bloomsburg, PA was built with flexibility in mind. Our specialty is small custom production runs real quick. Color is another KYDEX specialty. We have developed over 4,000 colors for the markets we serve. We also are very good at modifying the KYDEX alloy to provide particular characteristics, such as lower heat release and toxicity when burning to meet the new and more stringent regulatory requirements for transportation interiors. Today, there are 30 different types of KYDEX all developed for specific applications. KYDEX, LLC is the only manufacturer of KYDEX thermoplastic sheet products and currently we have one manufacturing facility. We have an extensive worldwide distribution network to help us logistically support an increasingly global customer base. Our competition varies depending on the market. Primarily, we compete against other extruders of fire-rated thermoplastic sheet such as Spartech. In the rail market, we typically compete against fiberglass, and in building products we usually are competing against high pressure laminates, such as Formica and Wilsonart.

...to be continued in the July 2011 issue.

Information contained in this newsletter has been taken from trade and statistical sources that we consider reliable but we cannot assure its accuracy or completeness. Any opinions expressed reflect our judgement as of this date and are subject to change.

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