

"A World of Plastics Information"

Part news. Part views.

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Dear Colleague:

Consolidation continues, confidence conquers In fact, there are plastics industry blogs and websites devoted exclusively to M & A's. Cheap credit made possible by ultralow interest rates are contributory as is abundant cash for deal making and the pressure to increase profitability by buying or joining with a competitor. A stronger dollar, rising competition from imported products and slowing demand from China are all factors in a struggling economy as 3Q 2016 ramps up. Look for softness in PVC and PE pipe markets as weak energy prices continue to put a damper on the oil and gas industry. Interest rates could rise in the U.S. by 25 basis points in about the Sept. – Oct. 2016 window. Crude oil priced trending steadily downward.

TRENDS:

A new polymer with properties similar to PTFE was recently introduced by Case Western University Professor H.Ishida...polybenzoxazine is a thermoset on steroids – stay tuned! The European sheet market is predicted to show a steady 1%/year increase for the balance of this decade...Germany accounts for 25% of all sheet consumption, with Poland growing 4% in 2016. Global GDP growth estimated at 2.6% in 2016...slightly below 2.9% for 2015. Artificial Intelligence (AI) software helps companies draft legal documents, saving on legal expenses by helping avoid one-sided deals, comparing with similar agreements and writing in plain English. Amazon Business continues to grow by comparing prices for plastic shapes on its websites... one Amazon supplier is Sibe Automation. Continuing this trend, eBay announced eBay Business Supply, featuring MRO products, following Amazon. EV charging stations in China will feature PC sheet for glazing and lighting...expect 5 million EV's on the road by 2020, requiring large infrastructure. Oil price forecast: \$45-55/bbl for 3Q 2016.

OUTLOOK EUROPE: ...by Ralph Ammann, our EuroZone correspondent in Germany

This months report starts with interesting news of <u>Solvay</u>. The leading global supplier of high performance specialty polymers, announced that it is adding three Ryton® polyphenylene sulfide (PPS) products to its rapidly growing portfolio for food and beverage applications. Two of the additions – Ryton® R-4-242 and Ryton® R-7-232 PPS are entirely new Solvay products. With the introduction of these advanced PPS polymers to its food and beverage portfolio Solvay has expanded and strengthened the portfolio offering high performance resins for this market.

It further provides industry OEMs new options vs. Metal and thermosets. These Ryton® grades are inherently flame retardant, making them especially suitable for applications that require both food contact compliance and UL 94 V0 flammability.

Elsewhere, specialty chemicals company <u>LANXESS</u> is one of the few suppliers that is continuously expanding its range of easy-flowing polyamide 6, 6.6 and PBT compounds (polybutylene terephthalate). "We are seeing a strong upturn in the level of market interest in the benefits that these materials open up compared to standard materials in terms of processing, production costs and design freedom. They are particularly suitable for manufacturing the kind of thin-walled components that are ideal for lightweight construction and the miniaturization of assemblies", explains Tim Arping, a marketing expert at the LANXESS High Performance Materials (HPM) business unit. The latest example of one such product innovation is Durethan BKV 30 XF (XtremeFlow). The polyamide 6 with 30 percent glass fiber content is the successor of Durethan DP BKV 30 XF and is over 17 percent easier flowing (flow spiral, 8 x 2 millimeters, 280 °C melt temperature). Compared to Durethan BKV 30, another standard polyamide 6 with 30 percent glass fibers, its flowability is 62 percent higher. The new material features a good mechanical property profile that is almost identical to that of its predecessor and also produces outstanding surfaces. "We think it has huge potential for use in applications such as light but extremely strong mounts and brackets in cars", says Stefan Theiler, who is an expert in the development of polyamide compounds at HPM.

Furthermore, in a study carried out for <u>Porsche</u>, the company proved the feasibility of manufacturing motor oil pans from polyamide 6. For example, aging tests were carried out to determine the durability of the thermoplastic under exposure to elements such as new and used engine oil. Specimen storage tests spanning a total of 3,000 hours at 150 °C were performed on highly reinforced, hydrolysis-stabilized, easy-flowing and high-temperature-stabilized Durethan grades, among others. "The test results show that the aging behavior of heat-stabilized polyamide 6 is only marginally different to that of heat-stabilized polyamide 6.6 in terms of tensile strength, Young's modulus, elongation at break and impact strength. Appropriately optimized polyamide 6 compounds are therefore ideally suited for use in components that convey engine oil", says Christof Boden, expert for engine compartment applications from <u>Lanxess</u>.

The engine oil pan for the Porsche 911 Carrera consists of an upper and a lower part made from 30 percent glass fiber-reinforced Durethan BKV 30 H2.0 from Lanxess. The upper part is screw-connected to a pipeline carrier that is also made from polyamide 6. Using plastic instead of aluminum means that numerous functions can be shaped directly during injection molding, thereby integrating them into the component. This has helped to reduce the number of separate parts that need to be manufactured and mounted for the oil pan from 14 on the metal design to eight. The number of key work steps needed in the final assembly of the engine has also been cut from eight to two. For example, the bulkhead panel is integrated into the lower part of the pan and no longer has to be installed separately with a seal. Furthermore, the oil return lines of the turbocharger, the oil separator and the air-oil separator are combined in the pipeline carrier.

Last but not least, the <u>EMS Group</u> announced good results of the first half of 2016. The group, with its companies combined in <u>EMS-CHEMIE HOLDING AG</u>, is globally active in the business areas High Performance Polymers and specialty Chemicals. In the first half of 2016, net sales increased by 3.7% and net operating income (EBIT) by 16.6% compared to the

previous year. Consolidated net sales in Swiss Francs reached CHF 1,002 million (966) which represents a growth of 3.7% compared to previous year. In a moderately positive global economy, EMS was able to continually expand business with innovative specialty products. Pleasing growth was achieved in all customer markets. Net operating income (EBIT) closed at CHF 264 million (226) which is 16.6% above previous year. The operational cash flow (EBITDA) rose to CHF 290 million (251) which is 15.2% above previous year. According to the company the EBIT margin reached 26.3% (23.4%) and the EBITDA margin 28.9% (26.0%). Strong growth with high-margin specialty products and simultaneous efficiency improvements had a positive effect on both result and result margin.

At the ordinary Annual General Meeting of the <u>EMS-CHEMIE HOLDING AG</u> on August 13, 2016, the current members of the Board of Directors, Dr. Ulf Berg, Magdalena Martullo, Dr. Joachim Streu and Bernhard Merki, will be proposed for re-election in unchanged functions. KPMG AG will be proposed for re-election as Statutory Auditor. Due to the pleasing development of result and liquidity, the Board of Directors intends to further increase the dividend by CHF 1.50 per share. This means that at the Annual General Meeting, the Board of Directors will propose a dividend payment of total CHF 15.00 per share (initial announcement: CHF 13.50; previous year CHF 12.00).

PRICING:

Resin prices are essentially flat to lower, as we enter the 2nd half of 2016, with PE unchanged from 1-2Q 2015. PP prices are trending lower, (dropping one cent /lb at end of July 2016) with PS suddenly reversing an upward trend due to sharp fall in benzene prices on world markets earlier this year. PVC, ABS and PC prices are flat (benzene again contributory). The one exception is nylon 6 prices which are up slightly, although nylon 6/6 remains unchanged.

MANUFACTURER/DISTRIBUTOR BRIEFS:

<u>A&C Plastics</u> continues to supply acrylic sheet for high visibility applications...<u>Apple</u> store logos among them. <u>Nylacast</u> ranked 150th in UK listing of mid-market private companies as tallied by <u>HBSC</u>. <u>Evonik</u> has announced plans to close its Cast PMMA sheet plant in Austria this year. <u>Supply House Times</u> releases its 2016 rankings of PVF suppliers...<u>Ferguson</u>, <u>HD Supply</u> and <u>MRC Global</u> are top three. <u>K 2016</u> opening this October in Dusseldorf, Germany. <u>Quantum Polymers</u> General Manager Kathleen Cerchio named to top women in Plastics list by <u>Plastics News</u>.

In Memorium... Stanley Gault, CEO, Rubbermaid and Goodyear, previously Vice Chair, G.E.

MERGERS, ACQUISITIONS, ALLIANCES, DIVESTITURES AND EXPANSIONS:

<u>Plaskolite</u> and <u>Lucite International</u> sign Letter of Intent for Plaskolite to acquire the Continuous Cast sheet business of Lucite...elevates Plaskolite to the unique global status of producing MMA sheet using all processes (extruded; cast; and now continuous cast). <u>Curbell</u> buys <u>M&M</u> <u>Plastics</u>, San Diego. <u>PolyOne</u> buying two businesses, including <u>Polystrand</u>, <u>creating an Advanced Composites group</u>. <u>Honeywell</u> to spin off Nylon 6 business into a stand alone, publicly traded company named <u>AdvanSix</u>, The "Brexit" situation is expected to put a crimp on M & A activity

in Europe this year and next (will also push up the value of the \$USD). <u>Bain Capital</u> touting the Plastic Industry for PE investments. Number of deals from 2010-2015 averaged 125/year.

<u>INDUSTRY INTERVIEWS:</u> Mitch Opalich, President, Indelco Custom Products, an Indelco Plastics Company and President-elect IAPD

How will the IAPD change?

The association is facing the same threats as the plastics market:

Shrinking membership through consolidation

Potential Competitive threats by other higher tech entities entering our market: Amazon ??? Struggle to Attact high quality individuals to our industry--- much more sexier industries for qualified sales people.....Labor pool for trained trades, machinists and fabricators is slowly dwindling

Indelco, just like other industry companies, face the same challenges:

Human Resources

Competition: global and domestic

Manufacturer's selling direct and NOT through distribution

What advice would you give to someone contemplating our Industry?

Relatively a young market place full of opportunity. Opportunity exists for young and bright individuals who may want hustle in sales or become an entrepreneur.....Be willingly to commit to learning the materials and applications..... not a sexy industry though

Who would I come back as?

I would come back as a young Jack Nicklaus or Ben Curtis who pursued their passion in the greatest individual sport of all time. What an opportunity:

- Travelling the world playing a sport
- Enjoying some of the most beautiful land/grounds of all the legendary golf courses around the world
- Playing a game built on integrity and officiated by the players themselves
- Competing not only against the course, but others
- All while smoking a flavorful cigar!!

Greatest achievement?

Purchasing Cleveland Plastics in 1994 and growing the business 7 fold before selling to Indelco in 2008. Learning the most important lesson, from my family, of being an entrepreneur is taking care of the employees and treating them fairly...... 95% of the employees have stayed with the company through the acquisition!

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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.