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CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

Cover Story

Skyjack Reaches Upwards
with New Powder Line

Winning at the Flatline Panels Game

The Wide World of Masking

Keeping the Process on Target
with New Measuring Instruments

Plating & Anodizing
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Certainties and a shrunken **LOONIE**

In a few weeks, on November 5, the Woodworking Machinery & Supply Expo opens in Toronto. Right after that, FABTECH opens at Chicago's McCormick Place, on November 9. The week after, the CASF Technical Forum on November 18 is another Toronto date to watch.

The booth space is booked, people are buying airline tickets and shopping for last-minute deals on hotel rooms. Everyone going to Toronto or Chicago is ordering extra business cards. In other words, like Christmas, these events are certainties.

Not so the rest of business life in Canada, as autumn sets in. Other economic essentials are up in the air.

Who'll be running the country for the next while? At press-time, the three main contenders in the election were neck-and-neck, and the probability of a coalition was being whispered by the late September wind. Nobody could make a solid call, and it was time to hedge some bets.

And the loonie? It was doing poorly, and then it got worse, and briefly dropped under 75 US cents. It was enough to make us feel faintly ashamed every time we pulled out our debit cards at the supermarket. Not to mention worried about whether there could be a repeat of hitting the 63-cent level that happened in the early 2000s.

A low Canadian dollar is always a two-edged sword. It makes our exports more attractive to the US market, which helps some poorly performing manufacturers get a break. This also means smaller firms might be able to break into markets that were previously sewn up tight.

But then the dollar starts to climb again, and any structural problems in the companies that have not been fixed when the cashflow was there, simply come back again to haunt the bad dreams of the management. Fast

cash doesn't change weak business fundamentals.

Then again, a lot of raw materials are sourced from the US, and have to be bought at a premium. This time, despite historically low oil prices, materials derived from petrochemicals have not necessarily seen their sticker prices drop, and for paint and coatings manufacturers that's no comfort at all.

Canada's second-quarter return to recession was a technical one, in the sense that only falling oil prices, which mostly hurt Alberta, have been causing it. The rest of the economy isn't doing wonderfully, but it's holding its own. But business confidence is a complex animal, and it won't run properly when one foot is lame.

Now, if I had the answer to the problem I'd probably be sitting on my yacht someplace, not writing for CFCM. But I don't, and my yacht is as likely a prospect as any of the Canadian political leaders winning an outright parliamentary majority.

That said, each of the big fall show events is worth visiting precisely because they remind us of what industry can be about. All that new equipment, and all the new bells, whistles and Android phone-connected controls, can really make a difference.

And if you're not sure about buying anything new right now, it's important to see what's on offer. Because if your business confidence level isn't that high, some competitor's will be strong enough to place an order for it.

And that, you can be certain about.

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CFCM editor Edward Mason (right) with Manny Pereira of Skyjack. See cover story on page 18.

FABTECH

Ready for the World

If you've not yet booked a flight and a hotel room, you don't have much time left. FABTECH 2015 opens on November 9 at Chicago's immense McCormick Place, and anyone who's anyone in the world of metalforming, fabricating, welding and finishing, will be at the show.

Show organizers say the show, which will cover 550,000 sq ft of floor space, has attracted 1,500 exhibitors, and is expected to draw 40,000 visitors. In addition, there are 100 conference sessions covering the whole range of current metalworking and finishing technologies.

The Chemical Coaters Association International Finishing Pavilion was completely sold out two months before the show was due to open. The pavilion is located in the huge South Hall, with more than 195 exhibitors showcasing finishing products and services in more than 48,000 net sq ft of space, making this the largest finishing pavilion at FABTECH yet.

"We're thrilled with the growth of CCAI's Finishing Pavilion," said CCAI executive director, Anne Goyer. "The number of attendees and the high level quality of those attendees at FABTECH is what has led to this outstanding growth we've experienced. This is the premier trade show for the finishing industry in North America."

There is still a limited amount of additional space available in Hall C, located below the North Hall, for exhibitors who want to be involved. Attendees can register for free prior to November 6, and can pick up their badge onsite. The website is www.fabtechexpo.com.

The show will be held from November 9 through 12 at Chicago's McCormick Place. The exhibits are open as follows:

- Monday, November 9: 10.00 am to 6.00 pm.
- Tuesday, November 10: 9.00 am to 5.00 pm.
- Wednesday, November 11: 9.00 am to 5.00 pm.
- Thursday, November 12: 9.00 am to 3.00 pm.



The main exhibit hall of FABTECH.

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Woodworking Show Being Held in Upgraded International Centre

The Woodworking Machinery & Supply Expo is close at hand. Held at the International Centre, in Mississauga, ON, the event will run from November 5 to 7.

The show is Canada's largest exhibition of secondary wood manufacturing technology and supplies. It will include a two-part WMS Technology Conference, with Part 1 held November 4 at the event hotel, the Four Points by Sheraton, near the Toronto International Airport. The conference will continue on November 5, with keynote addresses and other presentations held at the International Centre, coinciding with the opening day of WMS 2015.

The International Centre was the location for the highly successful WMS 2013, which brought together more than 5,200 industry professionals, including nearly 4,000 attendees.

The International Centre recently completed Phase 1 of a \$7-million dollar renewal plan that upgraded the expo center to incorporate modern design elements. This renovation transformed the million sq ft facility, to include a new Hall 1



Waiting for the party: the renovated Hall 1A at the International Centre.

lobby as well as upgrade hall interiors.

"Exhibitors like the International Centre because it offers ease of move-in and move-out of displays," says Rich Widick, show sales manager for WMS 2015. "Attendees like the Centre because of its proximity to Pearson International Airport and an abundance of free parking."

WMS 2015 will feature the full gamut of woodworking machinery and supplies, including CNC machinery, saws, edgebanders, and other woodworking equipment, cutting tools, CAD/CAM software, wood finishing and sanding equipment

and materials, functional hardware, decorative surfaces and edge materials, and much more. machinery and supplies.

The show's website is www.WoodworkingExpo.ca

Tremco Group Buys Chemtron Manufacturing

Tremco Group (Beachwood, OH) has acquired certain assets of Chemtron Manufacturing Ltd., the Calgary-based manufacturer of construction adhesives, sealants and tapes.

The business will operate as Chemtron International, Inc. and will work closely with the Tremco Commercial Sealants & Waterproofing Division (Tremco CS&W), due to synergies between the two businesses. Tremco CS&W is a supplier of integrated building envelope solutions for commercial and residential construction and industrial applications.

Chemtron has annual net sales of approximately \$5-million. Terms of the transaction were not disclosed.

Its product line includes adhesives, caulks, glazing tapes, mastics, sealants and related com-



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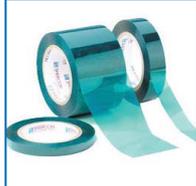
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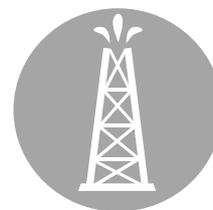
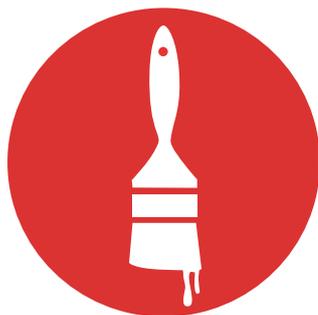
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pounds for the OEM and construction markets. In addition to its headquarters and 52,000-sq ft manufacturing plant in Calgary, the company also has a distribution facility in Edmonton.

“The addition of Chemtron will improve Tremco’s logistics with West Coast customers,” said Paul G.P. Hoogenboom, Tremco Group president. “Plus, Chemtron’s product portfolio, particularly its premium butyl and putty tapes,

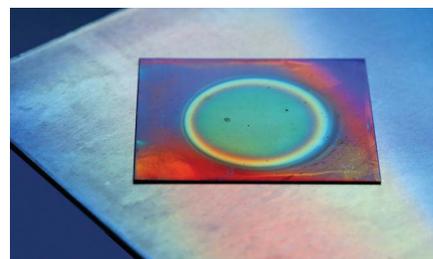
complements Tremco’s growing industrial and OEM businesses. At the same time, we expect to accelerate Chemtron’s growth beyond the Pacific Northwest by leveraging its products across Tremco’s significant North American sales and distribution network.”

Chemtron Manufacturing Ltd. has been jointly owned by brothers, Glenn and David Molnar. Glenn will join Chemtron International, Inc. as

general manager and vice president – sales, and his son, Courtland, will take on the role of product line manager.

Tremco Group employs 1,850 employees globally. It consists of operating businesses specializing in the manufacture and sale of construction sealants, glazing and gaskets, waterproofing systems, traffic and deck coatings, air barriers, roofing materials and services, firestopping systems and custom designed products, programs and services dedicated to the worldwide construction and maintenance and repair industries.

Coating Absorbs and Repels Heat



A laboratory photo showing the coating’s action.

Researchers from the Ecole Polytechnique Fédérale de Lausanne, in Switzerland, have developed a coating capable of absorbing heat as well as repelling it. Invisible to the naked eye, this coating can prevent over-production of energy and overheating of facilities.

Solar thermal collectors are used to produce hot water and contribute to home heating. In summer, however, thermal collectors become overheated and deliver excess heat, and until recently, this overproduction has remained an unresolved problem that can even damage facilities.

The researchers, led by Andreas Schüler, developed a smart material that changes its properties depending on temperature. In the case of overheating during summer, this new material would allow the collector to get rid of excess energy by radiating it. Their research has just been published in the journal Solar Energy.

Tanks and all the other elements of solar panels have to withstand very high temperatures – sometimes up to 180 deg. C – several times during each summer. Over time, the heat transfer fluid degrades. Sensors, thermal insulation and the absorbent layer suffer and become less efficient. An ideal solar panel should be able to absorb heat up to a point and then repel the sun’s rays – like a mirror – to prevent overheating.

“A mirror doesn’t absorb heat,” Schüler



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says. “That’s why mountain rescue blankets have aluminum coating. But we also need absorbent elements.”

EPFL’s Solar Energy and Building Physics Laboratory (LESO-PB) focuses on optimizing the transition temperature through ‘doping’ adapted to the material. The material must behave as a ‘good’ semiconductor at lower temperatures and as a ‘bad’ metallic conductor at higher temperatures.

“With a coating of this material on a metallic substrate,” Schüler adds, “one can get a surface that has a low thermal emissivity in a cold state and high thermal emissivity in a hot one.”

The LESO-PB team works specifically on materials that are absorbent in the solar spectrum and reflective in the infrared range. This is called the selective effect. The innovation in this process is the successful combination of a selective effect with a thermochromic function – the color reacts and changes with heat, a phase change that occurs at 68 deg. C. The new material developed at the laboratory enables efficient absorption of solar energy while reducing the impact of overheating.

CASF Holding Annual Conference

The Canadian Association for Surface Finishing is holding its 2015 Conference on November 18, at the Hilton Garden Inn, Vaughan, ON. The event includes a tabletop show, for which the charge is \$450 per table.

The day will feature presentations on surface finishing and economic trends; an update on regulations for chromium; changing technical standards; an update on banned metals and compounds; and sustainability trends.

There will also be updates on the economy. The keynote speaker will be Earl M. Sweet, managing director and senior economist at BMP Capital Markets.

Other guest speakers include Christian Richter, executive vice-president of the National Association for Surface Finishing (NASF); Hudson Bates, executive director and toxicologist, Nickel Producers Environmental Research Association; Nancy Coulas, director of environment and energy policy with Canadian Manufacturers and Exporters; and Michael Kuntz and Richard Thibodeau, co-chairs of the Canadian Association for Surface Finishing.

Registration can be made through the Association’s website at www.CASF.ca.

US Paint and Coatings Value to Hit \$25-Billion

The American Coatings Association (ACA) is predicting the US paint and coatings industry will reach an annual value of US\$25-billion by 2019. The ninth edition of the ACA Industry Market Analysis, (2014-2019), prepared by The ChemQuest Group Inc., profiles the performance of the coatings industry’s 19 market sectors, and provides projections for sector performance for the five-year period. This value-added feature is intended to address the 2010 discontinuation of the detailed industry figures previously provided by the US Census Bureau’s Current Industrial Reports.

Major trends and drivers the report says will create challenges in multiple market segments through 2019 include: an increased demand for high-solids coatings, downward pressure on the average selling prices per gallon of coatings as the result of persistently low energy prices, the negative impact of a persistently strong US dollar on domestic exports, and an anticipated increase in the benchmark short-term interest rate by the Federal Reserve System if the economy continues to improve (after an unprecedented seven-year rate of near zero percent at the start of the 2008-09 recession), affecting both volume and value in the domestic paint and coatings market.

At 60 percent of the volume, and 49 percent of the value in 2014, the architectural coatings segment continues to account for the largest segment

of US paints and coatings demand. ChemQuest is forecasting a 2014-2019 Compound Annual Growth Rate (CAGR) of 3.5 percent for value, and 3.3 percent for volume in the architectural segment, versus 1.6 percent and 0.7 percent for value and volume, respectively, in the original equipment manufacturer sector and 2.9 percent for value and 2.8 percent for volume in the special purpose finishes sector. The architectural coatings segment will face both opportunities and challenges heading toward 2019, with the growing demand for waterborne coatings technology — particularly in the primerless and zero-VOC segments — at the expense of solvent-borne coatings. Consolidation, especially among small and medium-sized formulating companies, is expected to continue, combined with significant competition in channel growth with paint stores vying for increases in market share over home centers.

Buckman Celebrates 70th Anniversary

Buckman Laboratories International Inc. (Memphis, TN) is celebrating its 70th anniversary this year. The company was launched in 1945 by Dr. Stanley J. Buckman, a biochemist who had worked to develop a decay-resistant wood for military use. Its first sale was made in October of that year.

Today, Buckman has 1,700 employees worldwide, and serves customers in 90 countries. It manufactures products in eight countries, including Canada, where it has a facility in Vaudreuil-Dorion, QC.

The firm is still privately held, the current CEO being Steven Buckman, who himself has spent 40 years with the company. “When I look back over our history, I am sure that Dr. Stanley Buckman would be proud of how Buckman

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has continued to grow and thrive,” he says. “We have thrived because we have been willing to adapt and change yet remain Buckman at our core – a company focused on our customers.”

Gold Chosen as Color of the Year

AkzoNobel’s annual global study of color trends has identified a shade of gold as Color of the Year for 2016. The color was chosen by an invited panel of design and color experts to make recommendations for the company’s ColourFutures 2016 color trend guide.

“Color is an integral part of our business and sharing our knowledge with people around the world means everyone can be inspired and benefit from its transformative impact,” said Ruud Joosten, the AkzoNobel executive committee member responsible for decorative paints. “Studying global color and design trends also allows us to stay at the cutting-edge of what consumers want.”

Now in its 13th year, ColourFutures 2016 focuses on one overall theme – Looking Both Ways – with gold identified as the color that best connects all the keys trends for next year.

“Gold exemplifies the overall theme of duality,” explained Heleen van Gent, Head of AkzoNo-



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bel’s Global Aesthetic Center. “It’s bright enough to attract attention, while subtly referring to history and heritage. So it represents a fusion of our past, our present and our future.”

The study was developed by the company’s Global Aesthetic Center. The study drew from a multitude of influences, from fine art to technology, design to nature, architecture to fashion, and music to popular culture.

L.V. Lomas Adds New Supplier Companies

L.V. Lomas (Brampton, ON) has added two new supplier companies to its line-up of products for paint and coatings. These are Functional Products Inc. (Macedonia, OH), which produces lubricants, viscosity modifiers and bio-based additives; and Imerys SA, of France, which produces talc.

L.V. Lomas will become Functional Products’ sole Canadian distributor as of October 1, and is already distributing Imerys’ product line. Imerys offers a wide range of Muscovite and Phlogopite mica products from mines in King’s Mountain, NC, and Boucherville, QC.

“We are excited about the opportunity to work with such a diversified, professional and customer focused company such as L.V. Lomas,” said David DeVore, president of Functional Products. “L.V. Lomas has a strong presence throughout Canada with adjacent and in many cases synergistic lubricant raw materials from other top-notch suppliers in our industry.”

Union City Sold to Protech/Oxyplast

The Protech/Oxyplast Group (Montreal) has reached an agreement to purchase the thermo-

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plastic powder coating business and assets of Union City Industries (Union City, MI). The transaction is expected to close by mid-October.

Union City's principal, Ben Chard said: "We are looking forward to joining the Protech family to grow the thermoplastics powder business together. We are excited about the products and capabilities that Protech can offer our long-standing customers".

Protech will integrate the UCI powder manufacturing operations into its own organization. Current customers of UCI will continue to be able to obtain the products they are currently purchasing and, as well, will now have access to Protech's worldwide network of products and technology.

Protech/Oxyplast products are produced in over twenty manufacturing facilities worldwide. The company is now in its 39th year of operation.

Market Growth Predicted Through 2019

The Freedonia Group, a consultancy based in Cleveland, OH, is predicting growth in the US paint and coatings market of 3.8 percent through to 2019. This would represent a total output of 1.4-billion US gallons of paint per year, which



Residential construction, the report says, will see the fastest growth.

Freedonia values at US\$31.5-billion.

The gains, Freedonia says, will be driven by a strong rebound in construction activity, which it expects will stimulate demand in the architectural market. Environmentally friendly, low-VOC paint and coating products will continue to see particularly strong growth as manufacturers develop new products to meet stricter government regulations and changing consumer tastes. Additionally, new technological advances, such as nanostructured coatings, will drive future growth as they open new applications by providing

antimicrobial, self-cleaning, sound-dampening, anticorrosive and light-emitting functions.

Architectural markets for paint and coatings will continue to be the main outlet for the industry, growing at an above-average rate through 2019, as demand is driven by an improved outlook for both residential and nonresidential construction. According to Freedonia analyst Joseph Kocian, "The fastest growth for paint is expected in new residential construction as housing completions rise at a double-digit annual pace, but demand in improvement and repair applications will increase as well."

Overall, demand for interior paint, which accounts for about two-thirds of the market, will outpace demand for exterior paint due to increased use of siding materials that do not require painting.

Manufacturing coatings demand is forecast to reach nearly 400-million US gallons in 2019, on annual gains of 2.4 percent. A rebound in construction spending will propel demand for related paint and coatings.

The metal building components market will exhibit the fastest growth among manufacturing markets, benefiting from industrial and commer-



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cial expansion. The furniture and fixtures market will continue to account for the largest share of manufacturing coatings and will also grow at an above-average pace.

The motor vehicle market will experience subpar gains due to weak growth in light-vehicle production. Maintenance and specialty coatings demand will exhibit below-average growth going forward. And marine coatings will rise at the quickest rate, bolstered by increased commercial shipping activity and new antifouling technology.

Polyurethanes Industry Grows Across North America

The Center for the Polyurethanes Industry (Washington, DC) has announced the topline results of a two-year survey on the polyurethanes industry in the US, Canada and Mexico. The 2014 End-Use Market Survey on the Polyurethanes Industry in the United States, Canada and Mexico shows that polyurethane production rose in all major product segments between 2012 and 2014.

Combined polyurethane production for the US, Canada and Mexico increased from about 6.92-million lb in 2012 to 7.65-million lb by the

end of 2014, with a significant polyurethane demand increase in the automotive sector.

"CPI's survey is one of the most significant sources of information on the industry, and it clearly demonstrates the organization's role as the premier knowledge center for the North American polyurethanes industry," said Lee Salamone, senior director of CPI. "These results showcase the historic trends and attest to what an exciting time it is for the dedicated and innovative professionals in the polyurethanes industry."

Electronic copies of the full survey are now available for pre-order. Orders may also be placed in-person at the 2015 Polyurethanes Technical Conference.

The 2014 End-Use Market Survey on the Polyurethanes Industry in the United States, Canada and Mexico, produced biennially by independent third-party IAL Consultants, provides a breakdown of raw material consumption for polyurethane markets by type and by major end-use market for each country over a two-year period, as well as historic trends, market drivers and key issues.

The survey contains more than 300 pages of

information and analysis as well as 150 data tables, plus charts and graphs. In addition to the increase in production, the survey's high-level results demonstrate that a greater demand for new vehicles increased the market for foam, coatings, adhesives and other products used in vehicles such as molded flexible foam.

www.americanchemistry.com

Omnova Solutions Raises Pricing

Omnova Solutions Inc. has announced a general price increase of up to 20 percent for all products and across all markets served by its Performance Chemicals business, effective October 1, or as contracts allow. This increase is in addition to previously announced increases.

"Despite concentrated efforts to improve our business performance, including an extensive organizational redesign and a comprehensive operational footprint overhaul, our financial returns are not generating reinvestment economics," said Anne Noonan, president of Omnova's Performance Chemicals business. "In order for us to continue to provide the differentiated service and support our customers have come to expect

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Achieving these goals is priority one for CPCA on many issues impacting the business of paint and coatings companies in Canada, such as:

- ongoing risk assessment and regulation of chemicals in Canada over the next five years under the Chemicals Management Plan;
- ongoing and ever-changing legislation on provincial product stewardship requirements impacting costs;
- regulatory alignment with the U.S. is essential for easier cross-border trade, but not assured.



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New Technology Improves Solar Panel Performance

Three Stanford University engineers have developed a coating technology that improves on solar panel performance. Their invention shunts away heat generated by a solar cell under sunlight, and cools it in a way that permits it to convert more photons into electricity. The work, by Shanhui Fan, a professor of electrical engineering at Stanford, research associate Aaswath P. Raman and doctoral candidate Linxiao Zhu, is described in the current issue of Proceedings of the National Academy of Sciences.



Their discovery addresses a long-term problem solar power has faced: the hotter solar cells get, the less efficient they are at converting the photons into useful electricity. Their solution uses a thin, patterned silica material laid on top of a traditional solar cell. The material is transparent to the visible sunlight that powers solar cells, but captures and emits thermal radiation, or heat, from infrared rays.

“Solar arrays must face the sun to function, even though that heat is detrimental to efficiency,” says Prof. Fan. “Our thermal overlay allows sunlight to pass through, preserving or even enhancing sunlight absorption, but it also cools the cell by radiating the heat out and improving the cell efficiency.”

In 2014, the same researchers developed an ultrathin material that radiated infrared heat directly back toward space without warming the atmosphere. They called this ‘radiative cooling,’ because it shunted thermal energy directly into the cold void of space. In their new paper, they applied this notion to improve solar array performance when the sun is at its hottest.

They tested their technology on a custom-made solar absorber, which mimics the properties of a solar cell without producing electricity. Covered

with a micron-scale pattern, it maximizes the capability to dump heat, in the form of infrared light, into space. Their experiments showed that the overlay allowed visible light to pass through to the solar cells, but that it also cooled the underlying absorber by as much as 23 deg. F.

For a typical crystalline silicon solar cell with an efficiency of 20 percent, 23 °F of cooling would improve absolute cell efficiency by over one percent, a figure that represents a significant gain in energy production.

The researchers say their thermal overlays work best in dry, clear environments, which are also the preferred sites for large solar arrays. They believe that commercial and industrial applications are feasible, perhaps using nanoprnt lithography, which is a common technique for producing nanometer-scale patterns.

“That’s not necessarily the only way,” said Raman, a co-first-author of the paper. “New techniques and machines for manufacturing these kinds of patterns will continue to advance. I’m optimistic.”

The technology could also be used for cooling cars out in the sun. The coating’s transparency should not affect vehicle color.

from Omnova, we must take this critical action to ensure we remain a viable supplier of value creating solutions to the industries we serve now and in the future.”

Omnova Solutions Inc. had 2014 sales of \$1-billion and a global workforce of approximately 2,300. It is a supplier of emulsion polymers, specialty chemicals, and functional and decorative surfaces for a variety of commercial, industrial and residential end uses.

Ashland Splits into Two Independent Companies

Ashland Inc. (Covington, KY) is separating itself into two independent, publicly traded companies, one focused on specialty chemicals and the other on motor lubricants. The new Ashland Inc. will be entirely focused on specialty chemicals and Valvoline Inc. will be focused on high-performance lubricants.

Ashland said the announcement follows a strategic planning process that set out to better understand the company’s markets, customers and the opportunities for each business. The split also represents the final step in Ashland’s more than decade-long transformation from an oil refiner and marketer to a special chemicals company, during which the company completed dozens of acquisitions and divestitures.

“Ashland is fortunate to have two strong, but distinctly different, business platforms with attractive growth opportunities and experienced leadership teams,” said William A. Wulfsohn, Ashland chairman and CEO. “We believe that separating into two industry-leading public companies will generate significant value for shareholders by enabling each company to focus on its specific business and strategic priorities.”

The new Ashland will provide specialty chemical solutions to customers in a wide range of

consumer and industrial markets. These markets are currently served by Ashland’s Chemicals Group, comprising Ashland Specialty Ingredients and Ashland Performance Materials.

Key markets and applications include pharmaceutical; personal care; food and beverage; architectural coatings; adhesives; automotive; construction; and energy. Together these businesses generated approximately \$3.6-billion in sales for the year ended June 30.

Wulfsohn will serve as chairman and CEO of the new Ashland following the separation, while Luis Fernandez-Moreno, currently senior vice president of Ashland and president of Ashland’s Chemicals Group, will be COO of Valvoline. Kevin Willis, currently senior vice president and CFO of Ashland, will serve in the same capacity in the new Ashland.

The global brand, which soon will celebrate its 150th anniversary, generated sales of \$2-bil-

calendar of **INDUSTRY EVENTS**

2015

October 28, 2015: UV LED 2015, at Hilton Garden Inn, Troy, NY, www.radtech.org.

November 5-7, 2015: WMS Woodworking Machinery & Supply Expo, The International Centre, Mississauga, ON, www.WoodworkingExpo.ca.

November 9-12, 2015: FABTECH 2015, McCormick Place, Chicago, IL, www.fabtechexpo.com.

November 18, 2015: CASF Environmental and Technical Forum, Hilton Garden Inn, Vaughan, ON, www.casf.ca.

2016

March 17-19: Aluminum Extruders Council, Annual Leadership Meeting & Conference, La Cantera Resort, San Antonio, TX, www.aec.org.

March 22-24: FABTECH Canada 2016, Toronto Congress Centre, Toronto, ON, www.fabtechcanada.com.

April 12-14: American Coatings Show 2016, Indiana Convention Center, Indianapolis, IN, www.american-coatings-show.com.

May 2-6: AAC 2016 Anodizing Conference and Show, Hyatt Regency, Chicago IL, www.anodizing.org.

May 3-6: ET 16, the 11th International Aluminum Extrusion Technology Seminar & Exposition, Hyatt Regency Chicago Hotel, Chicago, IL, www.ET16.org.

May 16-18: RadTech 2016, Hyatt Regency O'Hare - Rosemont, IL, www.RadTech 2016.

May 25-26: CPCA Annual Conference and AGM, the Westin Nova, Halifax, NS, www.canpaint.com.

June 6-8: SUR/FIN 2016, South Point Convention Center, Las Vegas, NV, www.nasfsurfin.com.

lion in the 12-month period ended June 30. www.ashland.com

PPG Breaks Ground for Applications Center

PPG Industries' industrial coatings business has broken ground on a new application development center for liquid coatings at its Oak Creek, WI, plant. The facility will support development of custom formulations of liquid coatings that apply well and consistently in varying application conditions, and it will enable PPG to simulate customer production lines for new coatings and application trials and for application training.

Scheduled to open in February 2016, the center will include multiple curing ovens, robotic paint applicators and spray booths with temperature and humidity controls to help mimic processes and environments in various customers' plants. The abilities to simulate actual production conditions and to test applications on large and complex shapes and parts will enable PPG technical experts to engage closely with customers during development and testing, offering new opportunities to identify and address potential problems and to refine application training.

The facility also will further enhance the Secure Launch Excellence process capabilities of PPG's industrial coatings business.

Kevin Braun, PPG vice-president, industrial coatings, Americas, said the investment shows PPG's commitment to developing innovative coatings along with its customers. "At PPG, we understand the challenges and demands our customers face every day. This new facility will enhance our ability to work collaboratively with

them to develop next-generation liquid coatings formulations that help them reduce manufacturing complexities and make coated products that last longer and look better."

Kason Corp. Buys Kek Gardner

Kason Corp. (Millburn, NJ), a manufacturer of screening, sifting and fluid bed processing equipment, has acquired Kek-Gardner Ltd., a UK-based manufacturer of sifting, mixing and size reduction equipment. Kek-Gardner management and manufacturing, located 25 miles south of Manchester, England, will oversee Kason's European operations.

"The acquisition of Kek-Gardner expands Kason's global reach while broadening its portfolio of solutions-based equipment and systems for pharmaceutical, food, dairy, chemical, plastics and powder coating applications," said Kason CEO Jonathan Weiner.

He added that with this move, Kason becomes the world's largest manufacturer of centrifugal sifting equipment, which are produced by both companies, and adds mixers, blenders, reactors, kibblers, cone mills, universal mills, air classifier mills, vertical sifters and solid-liquid separators to the equipment line offered through the Millburn headquarters.

Both companies are recognized for manufacturing excellence and technical support, earning certifications from the USDA, FDA, BISSC, CE, ATEX cGMP, 3-A and other accrediting bodies.

"Kason has long been a world leader in vibratory and centrifugal screening and in fluid bed drying technology," Weiner, added. "We increased the size and capacity of the Millburn facility by

one-third in 2013 and have achieved two consecutive years of double-digit growth. We are confident that the added product lines, engineering resources and international sales network of Kek-Gardner will enable Kason to accelerate its rate of growth throughout the Americas, Europe, Asia and the Pacific Rim."

George Tunnicliffe, former managing director of Kek-Gardner, will become managing director of Kason Europe. Henry Alamzad will continue as Kason's president and head of global sales and marketing.

Maroon Group Purchases D.B. Becker

Maroon Group LLC has acquired 100 percent of the assets of D.B. Becker Co., Inc. (Clinton, NJ), a distributor of specialty chemicals. Becker's management team will continue to manage the business. Terms of the transaction were not disclosed.

Founded in 1954, Becker supplies nearly a thousand customers, with an emphasis on high-performance and environmentally friendly raw materials for the paint, ink, coating, adhesive, polyurethane, construction, plastics and allied markets.

"We are honored to complete this acquisition which is our first step in a multi-tiered growth strategy," said Mark Reichard, president & CEO of Maroon. "D.B. Becker's management team has built an impressive business through their commitment to excellent customer service. We believe the company is well-positioned to continue its strong growth and we look forward to leveraging each company's portfolio of products through our

News, continued on page 54

Report from CPCA

BY GARY LEROUX

Below is a sample of some of the issues CPCA has worked in over the past several months. More issues and more detailed information and action plans are contained in the Members Only section of the CPCA website, at www.canpaint.com.

Microbeads Banned for Personal Care Products: Possible Implications for Coatings

The microbeads issue came up in March based on actions taken in the US (Illinois) and supported by the Ministry of Environment in Ontario. The view was that this should be addressed at the federal level and thus the NDP tabled it in the House of Commons for consideration under the Canadian Environmental Protection Act (CEPA), which led to the parliamentary resolution supported by all three parties. It is now in the regulatory process and once concluded microbeads will be added to the list of toxic substances on CEPA's Domestic Substances List. The target of this regulation relates to personal care products. 'Synthetic plastic microbead' means any intentionally added non-biodegradable solid plastic particle measured less than five millimeters in size and is used to exfoliate or cleanse in a rinse-off product. However, microbeads are typically used in many other personal care products, consumer products and industrial applications in Canada, and are defined as synthetic polymer particles that, at the time of their manufacture, are greater than 0.1 micron and less than or equal to five mm in size.

While the regulation will specifically target personal care products, it is still listed as toxic on Schedule I and raises the question, will it be applied to other industry sectors in future? If so, which industry sectors will be implicated and given the definition of the acceptable range, and will paint products be captured? CPCA has argued that the definition and its application must be specific to the sector for which it was intended and has made a formal submission to the federal government to that effect. It is still unclear what the impacts might be if

microbeads are added to the Domestic Substances List.

GHS: Health Canada Guidance on the Disclosure of Ingredient Concentration and Concentration Ranges

In conjunction with the US Occupational Safety and Health Administration (OSHA), at the end of July Health Canada (HC) published some updated guidance materials in order to help industry better understand the use of concentrations/concentration ranges and Confidential Business Information (CBI) claims. This information is posted in the CPCA Members Only section. The document indicates that, generally speaking, alignment between HC and OSHA does exist. However, with respect to the CBI issue Health Canada does not address any of the concerns that have been expressed by suppliers and importers over the past several months.

This guidance was not found to be very helpful by industry members, although Health Canada continues to believe that the Hazardous Product Regulations (HPR) and Hazard Communication Standard (HCS) 2012 provide enough flexibility for industry. For this reason, in the coming weeks CPCA will continue to press for more clarity and flexibility in the use of concentrations and concentration ranges and the CBI claim process under the Health Product Regulation.

The requirement for application and renewal for CBI protection through a cost-based system is an impediment to trade with Canada. CBI protection continues to be largely required on a per product basis resulting in financial and administrative burdens on businesses importing and marketing products in Canada. With respect to a greater variability in concentrations, the guidance says only that 'broader ranges' such as 10-40 per cent may be acceptable, as long as they remain 'true concentration ranges.' In order to avoid disclosing true concentration ranges, companies have to file CBI claims.

In the US, suppliers may claim the exact concentration as a trade secret and use a

replacement range instead, as long as they include a statement in Section 3 of the SDS indicating that the exact concentration has been withheld. However, there is no US government review process.

Obviously, if the CBI statement is included on an SDS, it would trigger the requirement to submit a claim for trade secret under Hazardous Materials Information Review Act in Canada, if the corresponding product is exported from the U.S. to Canada using a US-based SDS. CPCA continues to make the case that clarity is critical for all guidance materials issued as member companies want to be in compliance, but do not want to incur costs and delays doing things that are not required. CPCA continues to obtain feedback on the costs associated with CBI claims.

CPCA to Meets with Environment Canada on Compliance with Architectural VOC Regulations (2009)

CPCA met with Environment Canada officials in late July on the recent evaluation of industry's compliance with VOC regulations for architectural coatings, which came into force in 2009. The formal study was carried out over the past year by the Quorus consulting firm and concluded at the end of April. CPCA representatives met to discuss some of the results and the Performance Management Evaluation exercise generally. Environment Canada plans provide a formal presentation on the report at the next Paint and Coatings Working Group in December.

Environment Canada also confirmed in writing that over the past two years, it has randomly sampled and tested paint products for compliance assessment in many of the categories found within both VOC regulations related to paint: the Automotive Refinish Regulations and the Architectural VOC Regulations. Environment Canada's laboratory is continuing to analyze samples for architectural coatings applying VOC accredited methods.

CMP-3: Next Workshop on 'CMP Moving Forward' Set for November

The next invitation only, one-day interactive workshop on CMP Moving Forward will take place in November. The workshop will be hosted by Environment Canada and Health Canada to provide updates, share information and seek stakeholder input on the CMP-3. The purposes of this meeting are: 1) To solicit stakeholder input for future work being considered under the Chemicals Management Plan; 2) To articulate a common understanding and to identify and evaluate short-, medium- and long-term approaches for continued work under the CMP for all substances targeted; and 3) To listen and discuss stakeholder ideas, suggestions and views on the future of the CMP.

Selenium-containing Substance Grouping

A draft screening assessment and proposed risk management scope document for selenium and its compounds was published for a 60-day public comment period. There is risk of harm to organisms and biodiversity from selenium and its compounds and it is proposed to conclude that they meet the criteria under paragraph 64(a) of CEPA 1999. However, they do not meet the criteria under paragraph 64(b) of CEPA 1999. The moiety is proposed to meet the persistence and bioaccumulation criteria as set out in the Persistence and Bioaccumulation Regulations of CEPA 1999.

The whole blood concentrations of selenium and its compounds found in some sub-populations of Canadians exceed internationally accepted regulatory reference values, including the Upper Tolerable Intake Levels established by the IOM for North American populations and concentrations at which health effects have been observed in humans. Therefore, it is concluded that the criteria under paragraph 64(c) of CEPA 1999 have been met.

The proposed risk management objectives for selenium and its compounds are:

- To achieve the lowest level of releases of selenium to water that is technically and economically feasible, taking into consideration socio-economic factors, and the predicted non-effect level concentrations, and
- To achieve a reduction in human selenium exposures from multi-vitamin/mineral supplements providing high levels of selenium.



TDG Issues with Imported IBCs

A Canadian importer received a 'Stop Sales' order from an inspector for a dangerous good (DG) that was received in IBC from a foreign supplier. Below are some points to remember when importing dangerous goods from foreign suppliers as noted by Transport Canada:

- Ensure that offshore suppliers are using the correct UN specification containers for all dangerous goods shipped to Canada;
- Importers of chemicals and ingredients assume all responsibility for DGs from the time the shipment crosses into Canada until the DGs are delivered to the customer, so be sure to communicate the packaging standards to your suppliers;
- Ensure that reconditioned IBC are properly certified by the manufacturer—especially when using combination cage/poly bottles (i.e. one way totes) when the bottle and the frame must meet UN specifications and be certified by the manufacturer;
- Ensure that staff or the staff of your third-party service providers (warehouse and re fillers) conduct adequate inspections upon receipt of DGs from foreign suppliers to confirm that packaging is properly marked with UN certification marks; and,
- Ensure that foreign suppliers, receiving, packaging and third-party service providers are adequately trained to ensure that the means of containment used for a DG is properly selected and verified.

CBSA Updates its 2015 Trade Verification/Audit Targets

The Canada Border Services Agency (CBSA) updated its customs compliance verification priorities for 2015. Trade program verifications of tariff classification, customs valuation and origin are not limited to targets but rather are also initiated randomly to assess risk and revenue, and to promote voluntary compliance. In some cases, targets are experiencing a second round of trade verification, and in other cases, the CBSA is either continuing an existing round of verification or is planning a new round.

Importers of furniture for non-domestic purposes, batteries, apparel samples, bags of polymers of ethylene, footwear valued at \$30 or more, hair extensions, machinery for public works, sacks and bags, special purpose motor vehicles, polyurethanes in primary forms, parts for power trains, generating sets, cereals, articles of apparel and clothing accessories, bicycle parts, articles of plastics, articles of iron or steel, vices and clamps, parts for use with machinery of chapter 84 are experiencing first time priority continuing or new verifications of their tariff classification practices.

Importers of the indicated goods are prudent in preparing themselves for CBSA trade verifications by conducting internal reviews of their compliance practices, thereby getting out in front of audit results that may include application of administrative monetary penalties or fines. Given the random application of CBSA audits, the same would apply to all other importers. ■

Gary LeRoux is president of the Canadian Paint and Coatings Association



Almost anywhere in the world, you can find plants using Skyjack scissor lifts. And at a time when primary manufacturing in this country has been diminished, it's still a Canadian quality brand that does all its production here, at two plants in Guelph, ON.

The company, today a part of Linamar Corp., is celebrating its 30th anniversary this year. While the change wasn't planned with this milestone in mind, it has recently installed a new powder coating line for metal components.

"We use powder because it has the durability and weatherability our lifts need," says Manny Pereira, who supervises paint process-

es in the two neighboring plants that Skyjack has in Guelph. "We've had a split-line 2K powder system before, so we're familiar with the benefits. But for this line, we've switched to a 1K acrylic powder.

For a number of years, Skyjack has maintained a strong business relationship with Valspar Corp. as its powder supplier. The new Valspar product, Valde EFC (for Extreme Flex Cure), offers significant savings in use of natural gas for heating, as well as simplifying the process overall.

It can be cured at very low temperatures (275 deg. F or less) or cured very quickly at

higher temperatures (400 deg. F or higher) while delivering the same coating characteristics as a standard-cure, super-durable powder coating.

Skyjack makes around 90 percent of its metal components itself, with outside suppliers handling specialty components, or less common types of custom parts. The standard colors used are grey and orange, but some customers ask for their own corporate color scheme. As a result, quick color change was one of the features Pereira and his team were interested in adopting.

"We looked at quite a few installations," he



Manny Pereira , Skyjack and Edward Mason, CFCM.

says, “and we finally decided we liked a Gema OptiCenter system. There are a number of features on this we liked, but a key one was the control panel, which has been simplified so that everything is easy to read.

“We have 16 guns on the system, and it tells us at a glance which recipes you’re using, and which guns are on. Loading is automatic so that we never have to handle the powder manually during production, and there’s a vibrating feature on the wands so that the powder remains loose.”

A further selling point was the powder reclamation system. This retrieves waste powder



Freshly powder-coated platforms.

through a system of pinholes, so that more than 90 percent of what isn’t applied directly to the substrate can be recaptured. The result is that the booth stays clean while, of course, powder usage is reduced.

There is bank of eight IR units in the cur-

ing system, four per side. A three-zoned convection oven follows that. The IR system cures the thicker substrates, the convection system the thinner ones.

“Because it’s all recipe-controlled,” Pereira says “the IR emitters aren’t on when you don’t need them.”

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Railings entering spray booth.

One function he and his team looked at was the time it took to perform a color change with a one-booth system. They then translated this number into a calculation of actual line-speed.

“It made us decide to go to side-by-side booths,” he says, “so we never have to stop painting. We can do more using one color while we are changing the other.

“We’re able to run the different parts of a machine as it is built, one bar grey and one bar orange. They might not come out of the bake oven at the same time, but they can be painted at the same time.”

The pretreatment system was supplied by DuBois Chemicals Inc., and uses Duratec, the company’s proprietary non-phosphate process. An existing pretreatment washer was extended for the new line, Ventscor Systems (Concord, ON) designing the extension. Ventscor also consulted on and designed the convection oven configuration.

The line was, as of late September, still being completed and fine-tuned. However, as the photos in this story show, it’s already in production, and showing its value.



Ray Lewis, Skyjack and David Barlow, Valspar.

Skyjack is not giving out a dollar figure for this substantial upgrade. Pereira will only describe it as ‘a substantial investment.’

“We are in growth mode, though,” he says. “We’ve come a long way since the depths of the 2008 downturn. And this line will help us stay on top in this marketplace.” ■

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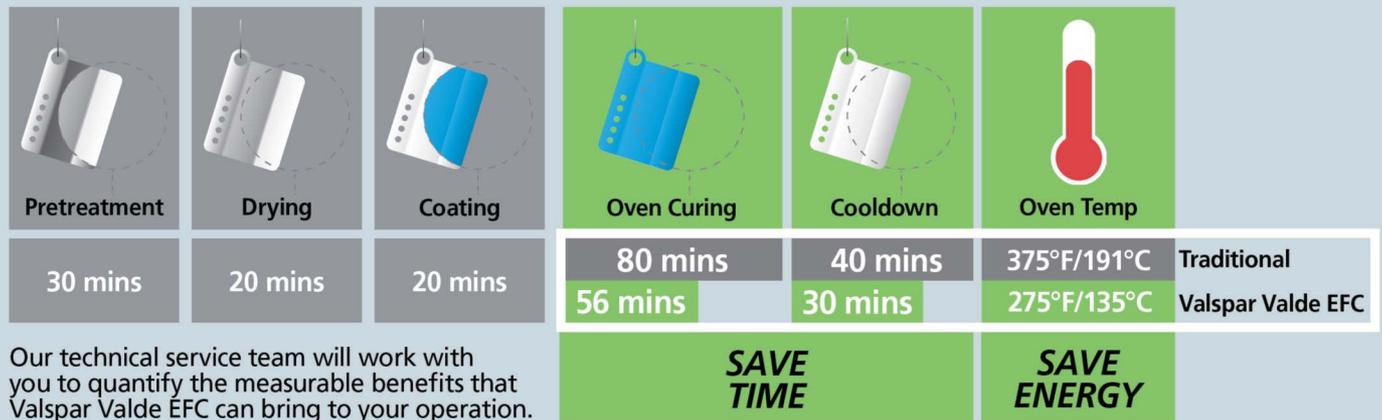


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Flatline finishing, even more than other manufacturing processes, is a game of throughputs. Improve the speed and the quality, and you're ahead: fall behind the competition, and it's a less happy story.

The primary trend in recent years has been to produce systems with ever-increasing flexibility, so that custom shops can attract a wider variety of customers. Fast changeovers enable a shop to switch from wood to particle board to other materials, as needed.

At the other end of the scale, with large, dedicated production lines, the aim is to provide more sophisticated control systems, to maintain maximum product quality. And on top of that, to add in robotics that achieve optimal piece movement and finishing standards.

Superfici America (Concord, NC), for example, has expanded its color change system so it has both low and high pressure options. It has also expanded its software so it can now change color from black to white in less than 30 seconds.

"It's controlled automatically by bar code or RFID directly from the processing part," says marketing coordinator Grace Hodges. "This means operator mistakes are eliminated. "Waste is minimized by having a fully enclosed ring fluid system. It is also possible to integrate plural mixing within the color change or for catalyzed clearcoat, making operator controls one-step."

The compact spray machine now has the option of being dual purpose, with both a recovery belt and paper conveyor. This means that for short use days paper can be used, and when there is a long run of primer, for example, the recovery system can be utilized to maximize paint usage. This feature is very advantageous for the millwork sector, which experiences a high variation in architect-requested finishes per job.

In efforts to reduce running costs, Superfici has introduced standby features to its spray machines. If the machine does not see work for a pre-set number of minute's ventilation fans will go to standby running, reducing energy consumption by 90 percent.

"We continually strive to automate and improve flexibility of the equipment to meet the short run and custom elements of today's market," Hodges says, "while always considering the environment and ease of use."

Homag Canada (Mississauga, ON) has recently been promoting its German parent's FKF 200 Optimat flatline system. This is a preconfigured entry-level solution for single-sided laminating and for the production of compound and lightweight panels.

In continuous process, the FKF 200 processes material on coils, high gloss veneer sheets and rigid covering layer material such as HDF. By means of a special quick-change system, the adhesive application roller can be easily and quickly changed.

The dosing roller speed and temperature is steplessly adjustable, and a pressure zone lying below the pressing force can also be optimally adapted. The spacious lay-up zone offers comfortably place for optional additional elements, such as the storage shelf.



Superfici's Magnum line features fast color change and expanded controls software.

The list of materials the system will manage include chipboard, solid lumber, HDF & MDF, honeycomb panels with frame made of various materials, sheets of various plastics, and more.

The unit will handle pieces from 600 to 3,000 mm, widths from 200 to 1,300 mm, and thicknesses from three to 80 mm. The working height is just under one meter, the system needs nine kW of heating power, and it has a feed speed of 15 meters per minute.

Venjakob Canada (Bolton, ON) offers high-end automation via its Ven Control system. Usable with both individual machines and complete plants, the sequence controls, control systems and their visualisation are all developed at Venjakob.

Standard modules as well as new developments contain the know-how of the technical processing departments are included in the programming. Depending on the specific application, these are optimally combined, developed and electrically engineered for each individual machine, and commissioning and start-up are preceded by detailed machine testing.

The company's Ven Trans handling systems use roller transports that, if required, provide workpiece transposition from one to two lanes. Accumulation and disc-roller conveyors or bar transport units complement our portfolio of continuous conveyor systems.

The systems can be configured to include continuous mechanical handling equipment, patented curve transport units, complex angular transfers, and both short transport distances and high conveying capacities.

For the sanding phase of flatline work, Venjakob has its Brush Hybrid systems, featuring longitudinal and cross sanding belt units. The surface quality is optimized by the cross belt with its sanding cushions.

Subsequent finish sanding with the wide sanding belt removes short fibres. Even finish sanding of painted/lacquered surfaces is possible with these uniform results.

With a longitudinal sanding unit, uniform

sanding pressure on edges and surfaces is possible by the use of pressure pieces, which are permanently attached to the sanding lamella. A cross-running pressure lamella belt can be used to prevent oscillation marks.

The Finishing Group of Cefla North America (Charlotte, NC) offers its iBotic, a highly flexible, robotic, spray system for panel and edge finishing that can handle complex shapes. With either single-arm or two-arm, simultaneous operation, the iBotic can work on either fixed workpieces or a moving infeed.

It's offered with carbon-fiber, paper or plastic belt conveyor systems. It features precision part reading at the infeed for accurate results,



Cefla's iBotic spray system for panel finishing.

maximum speed, and efficiency. The carbon-fiber belt system is equipped with counter-rotating rollers for coatings recovery and re-use. The system's precision and clean work surface means there is no overspray or other material on the underside of panels.

The iBotic can have one or two arms, and dry or water filters.

For high-end systems Cefla offers its iGiot-

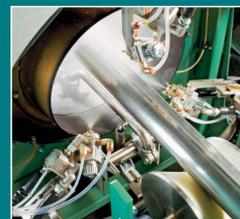
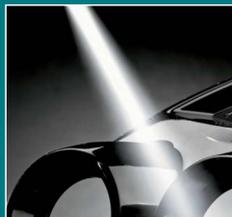
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ning technology to assure application speed, accuracy and consistency. Automatic nozzle-cleaning reduces scheduled maintenance, and the system can also be networked for remote diagnostics assistance if needed.

Even objects as large as 3 x 1.3 meters can be coated. The system acquires images of the pieces as they enter the spraying zone via a reading barrier (or late-model 3D scanner) that is synchronized with the product feed.

It requires little supervision thanks to the automatic device that carries out programmed nozzle cleaning. And the iGiottoApp robot also features remote internet-based assistance.

In sum, there's plenty of variety coming into the marketplace, both as regards configurations and levels of sophistication. It's just a matter of deciding what suits your company's needs best, and taking it from there. ■

toApp, which uses a six-axis robotic sprayer for panels and 3D objects. This combines recent coating technology with an easily programmable, high-performance application system for

nearly any part or component up to 10 x 4.5 ft. The system's precision means low coatings use and high productivity.

The iGiottoApp utilizes state-of-the-art scan-

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Waterborne wood finishes are still gaining traction in today's market. Some wood product manufacturers prefer to wait and watch, while others have moved ahead with full implementation. The increasing number of players in the market only says it's going to grow.

Especially in the past two years, the consumer market for wood products has tended to divide into two segments. Marie-Sophie Guindon, marketing and communications coordinator with Canlak (Daveluyville, QC) observes:

"The two trends we see most are the very high-gloss finish, a finish that gives wood the appearance similar to plastic, while on the other hand, at the very opposite end, is a very low sheen finish that highlights the natural feel and appearance of the wood."

The company has found its water-based products becoming progressively more popular. Guindon notes that more and more consumers are becoming environmentally conscious, and the developed this line of products to satisfy this demand.

"As for our UV cured products, these products are particularly interesting to clients with very specific demands. Every system is adapted to our client's specific needs, making these products exceptionally specialized. We offer a



wide variety of services, including going directly on their site to ensure that their production line is as efficient as possible."

Canlak provides highly individualized services, and maintains a full team of laboratory tech-

nicians available 24/7. The company develops new formulas on a daily basis, allowing it to satisfy the market's most challenging demands.

"And all of our services are included," she points out. We constantly evolve, which I think is

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the winning formula in this industry.” Canlak’s biggest competitors are US-owned, a fact the Canadian-owned company believes strengthens its market position.

The split in consumer preferences is noticed by other suppliers. Ron Bryze, technical sales manager with Milesi North America, saw similar trends during a visit to the International Furniture Expo in Milan this spring.

“You could not help but notice that the manufacturers were highlighting two types of finishes

on their products; the ultra-low sheen ‘natural look,’ and polished gloss,” he says. “We have seen a huge interest from the North American furniture and cabinet manufacturers for the natural look products.”

Milesi Wood Coatings, which in Canada is represented by Yorke Towne Supplies Ltd. (Richmond Hill, ON), was established in Milan Italy in 1947. It has 1200 employees, of which 200 are scientific researchers and R&D specialists, and its products are shipped

to over 75 countries.

Among recent additions to the product lineup is Milesi HGA19 which is a 4-6 sheen Natural Effect water-based coating. This product is a two-component acrylic that is formulated to have a negligible wetting effect on the wood so the natural color of the wood remains unchanged.

“This combined with the ultra-low sheen gives the wood the appearance of having no finish at all,” Bryze says, “while still providing excellent water, chemical and wear resistance.”

HGA19, he adds, produces a finish that is soft to the touch and yet provides excellent performance characteristics for maximum protection of the surface. This natural effect is possible thanks to the perfect balance between opacity and transparency, and to the excellent pore definition that the coating produces.

It can be applied by either spray or curtain coating and drying takes place at either room temperature or by forced hot air.

Milesi’s plant in Parona, Italy, is completely computer controlled, and incorporates extensive use of robotics and automation. It is a zero emissions facility so all manufacturing is performed in a closed system. The result is that liquid never comes in contact with air.

One of the more recent names to enter the marketplace is Katilac Coatings Inc. (Burlington, ON), founded in 2007. However, its parent company, Halton Chemical, has been in business for over half a century.

The decision to create a subsidiary, says general manager Jamie Dickens, stemmed from a desire to be seen as a direct-to-market supplier of wood coatings. It has its full product line always available, and can supply exactly what customers need.

“Since our beginning, we are proud to say that Katilac Coatings Inc. was ranked twice in the annual list of Canada’s 500 Fastest-Growing Companies by PROFIT Magazine,” he says.

Coatings include water-white resin systems, which are used throughout the product line.

They feature ultra-low formaldehyde levels and high solids, and include pre- and post-catalyzed clear and pigmented systems, as well as sealers and primers, and waterborne clear and pigmented systems.

Another relatively new name in the Canadian market is Gemini Industries (El Reno, OK).

Doug Lacina, with the company’s marketing department, says it is very close to opening a new distribution facility in the Toronto area.

“This will allow us to offer our Canadian customers the full breadth of our product line with quicker order turnaround,” he notes.



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His company, too, has noticed the trend toward deep and dark colors. These, he says, can present a huge challenge to cabinet shops.

"Using a two-step color system still allows the wood grain to show through," he notes, "reduces blotchiness, and still gives the depth of image demanded by an educated consumer who is demanding that fine furniture look on their cabinets. We like to see all the color nearest to the wood to avoid having to shade after finishes have been applied."

"Golden Oak kitchens just don't excite the



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homeowner any longer. We are seeing a trend to more pigmented finishes, either alone or with added glaze and distressed techniques."

Coordinating colors in one set of cabinets is very popular, he notes, where most of the cabinets have one color and islands etc. are finished in another. The rules change daily as consumers search for the newest trends and are willing to pay the premium required to get there.

"Colors are deeper, warmer and sagey," he adds. "Warm and neutral gray tones are very popular."

To keep up with demand, the company recently made a major addition to its Grande Prairie, TX plant. This will allow Gemini to greatly increase both capacity in general and batch size, keeping production costs in line. ■




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The Wide World of Masking

Masking technology mostly uses long-established methods. That doesn't mean, however, that suppliers lack for imaginative ways of reinventing, or at least improving, the standard methods. And this applies both to the characteristics of the products available, and how they're used.

"Caps 'n Plugs has introduced six new masking product series into our standard product line in 2015," says the company's Paul Hamilton. "We bought a super high printer printer-cutter this year that allows us to cut custom shape-cut adhesive tape masking in various types of tape for powder-coating, e-coating and sandblasting applications, without tooling costs to the customer."

Caps 'n Plugs, which is based in Brampton, ON, is now working in a greater variety of materials than it was two to three years ago. This includes working with very specific types of silicones and rubbers.

"All our business sectors including the automotive has become very demanding about the functionality and longevity of our masking," Hamilton notes. "Our customers want our masks to be easy to install or remove, and be durable for many repeat uses."

Naturally, the level of automation companies are employing depends on both the size of the company and the volumes it is producing.

"A number of our customers are now robotically installing our masks into their parts," Hamilton says. "All these custom parts are designed with the dual focus of part functionality and durability for automated installation."

Currently, with an ultra-low Canadian dollar, companies based here like Caps 'n Plugs are doing an excellent trade south of the border. Hamilton says "this makes a great number of our manufacturing customers become ultra-competitive to receive US business. This business stimulation will last until our oil market begins to rebound in a year or two, and our currency begins to climb again."

Not every company has moved away from tried and true materials, however. Christopher Gray, with Alliance Industrial Masking, says the company's custom tape-masking aids use proven, consistent materials.

"AIM's customers emphasize quality and consistency," he says. "These offer benefits far

greater than molded rubber alternatives."

"As a result, there has not been a need to offer additional materials. However, AIM is continuously searching for innovative materials that would allow us to expand into new industries or

further enhance our product offering."

He adds that AIM's custom masking kits are becoming increasingly popular with customers focused on lean processes. These kits contain each specific mask required for a particular



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part, and this has drastically reduced re-work due to human error and quality issues.

“Lean manufacturing seems to be the trend everywhere,” he notes. “To remain competitive, finishing companies are looking for ways to increase efficiencies, improve quality and decrease costs. AIM’s easy to use disposable tape masking aids are popular solutions to help them achieve such goals.”

Helping customers comply with Six Sigma standards and other lean processes is therefore a key service the company provides. Our innovative process enables us to deliver high-quality masks with amazing speed—ensuring that our customers are able to mask parts accurately with short lead time.

“We are able to produce custom masks from nearly any substrate,” Gray adds. “This versatil-

ity enables our customers to use these masks for a variety of applications including wet paint, powder-coating, blasting, scratch and scuff protection and chemical coating.”

New from powder coating hooks supplier Mighty Hook is its Q-Bolt. This is a masking product for threaded holes, with a hanging option.

Consisting of a steel screw partly covered with silicone rubber, the company says each bolt gives a very tight masking seal and a smooth paint edge. It is also suited for automatic mounting and removal.

Each Q-Bolt also has a threaded hole in the back making it easy to hang using an eyebolt. Originally offered in metric sizes M3 through M12, the line now also includes sizes M14, M16, M20, M22 and M24.

Mighty Hook (Chicago, IL) provides an extensive range of masking caps and plugs, as well as special molded masking products. It also produces silicone masking tubing, for masking threads, pins and tubing where a longer masking length is required.

The tubing is flexible but sturdy enough for use in masking threaded, non-threaded or slotted holes, and is easily cut for desired length. Additionally, its silicone foam cord can form a tight seal in threaded and non-threaded slots, grooves, irregular shaped cavities and through holes.

The cord can be stretched to make it thinner before insertion, and will return to its original shape inside making a liquid tight seal. Because of its flexibility, it can be formed to fit all sorts of standard and irregular slots, grooves and holes.

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Daemar Inc. (Oakville, ON) has masking plugs in silicone, EPDM rubber, cork, and high temperature vinyl. For high temperature applications, its Ultrabake plugs, which are for powder coating, e-coating, plating and anodizing as well as spray painting, can handle temperatures up to 315°C (609 deg F).

Plugs are tapered and can be fitted into a range of different diameters, while the material is soft and conforming, allowing it to seal the hole easily. The plugs have a handle to ease and speed up insertion and removal, and depending on the application, are reusable. They are also color coded to ease identification and sorting.

UK-based Essentra Components also distributes an extensive range of plug styles. Its general purpose caps include; tapered caps, tube caps, pipe caps, high temperature masking caps, and specialty push fit caps designed for use in the hydraulics industry.

The company's plastic threaded plugs have patented design features to ensure accurate placement and reliability. Among other products, these can protect; SAE O-ring ports, hydraulic fittings, UNJ/UNJS threads, metric threads, BSP threads, UNF threads, JIC threads,



Unified Standard threads, NS & NF Class 1-2-3 threads, and NPT threads.

Mocap (Park Hills, MO) also provides an extensive range of elastomeric and rubber plugs. As an alternative and inexpensive solution, it also has paper caps and plugs.

The material, the company says, is tough, yet flexible and is recyclable, so it can be seen as

environmentally friendly. The high temperature resistant paper material it uses withstands up to 400°F (204°C).

In addition to being inexpensive and disposable single use masking caps for painting and coating processes, they paper plugs also offer low-cost protection of a thread or port during shipping and storage. ■



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Keeping the Process **On-Target**

Verifying product quality has never been more important than it is today. Almost every technical advance in coatings technology brings its special possibilities for error or misapplication, so testing equipment has had to match the improvements in production.

Neil Howard, business manager for the quality control division of Folio Instruments (Kitchener, ON), points out that there are different basic testing techniques used in the coatings industry. Typically, these are the Cross Cut test, the Scratch Hardness test, and the Pull-Off adhesion test.

“The Cross Cut Test is probably the most common adhesion test procedure used in many coating manufacturing facilities,” he says. “The technique uses a blade which has many teeth on



ElectroPhysik's SmarTest, measuring the finish of a car body.

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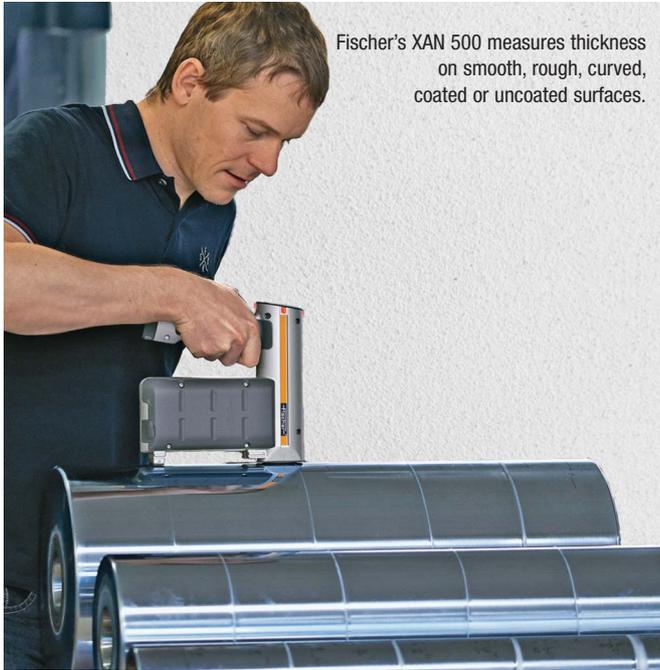
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it at consistent millimeter spacing between each tooth. The blade is drawn across the substrate to form a grid like pattern.”

A specialized tape is applied to the cuts in the substrate made by the cross cut blade. After application, the tape is then removed.

“Some of the coating in the grid may come off,” he says. “In an ideal world none of the coating should do this, but that would rarely happen. With the supplied reference card, you can determine how well your coating adheres to the substrate.”

The second test method, the Scratch Hardness Test, uses a stylus or a loop. A continuous amount of weight is applied to the stylus or loop till the coating is removed.

“The idea is to look at the amount of force needed to remove your coating,” Howard explains. Thirdly, the Pull-Off Adhesion Test uses tensile stress to remove the coating from the substrate. The process involves gluing dollies to the substrate.

“The instrument, which can usually be purchased in a manual or automatic configuration, applies pressure to the dolly till the dolly is pulled off the substrate,” he notes. “This test method provides a very good objective value to rate the adhesion of your coating versus the Cross Cut test. It is however the more costly method as you will have to keep purchasing new dollies.”

The dollies, which comes in packs should only be used once.

Hardness testers look at a coatings resistance to a mechanical force. The forces can be pressure, rubbing or scratching.

“There are many devices designed to look at hardness of a coating,” Howard says. “The most common hardness tester used in the coating industry is the Wolf-Wilburn Pencil Hardness tester. With this, a known amount of constant pressure is used while the hardness of the scratching tool is varied.

“We continually change the pencil lead type. Twenty pencils come with the tester ranging from 9B to 9H and sits at a 45 degree angle to the substrate.”

A further technique is the Pendulum Hardness tester, a method that

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looks at the damping time of an oscillating pendulum. Two stainless steel balls sit on a coated surface that rests on the pendulum, and the coating's hardness is determined by its viscoelastic behavior. "When the pendulum begins to move the stainless steel balls roll and put pressure on the coated surface," explains Howard. "A strong or weak damping will occur based on the coatings elasticity." The two standard types of pendulums are the König Pendulum and Persoz Pendulum.

A large part of his division's work at Folio Instruments technology relates to color analysis, and the consistency of look and appearance.

"Off-color products," he notes, "especially when placed together on a shelf, may deter customers from buying the product altogether as they may question the product's quality. Color also plays an important role for companies trying to establish their brand recognition."

One area he sees that could improve is making use of the full range of an instrument's functionality. Sometimes software is not installed, for example.

"It could come down to not having time to learn the software," he explains. "I feel that if people did learn the software, it could help to

open up better tracking systems for results and trending capabilities, and to learn more about their process."

Folio Instruments' product line includes BYK Gardner, Konica Minolta Sensing, Mettler Toledo, and Oxford Instruments.

One emerging trend in the actual measuring process is connecting measuring devices to smartphones or tablets. This can reduce the necessary amount of new hardware, as well as save time on the shop floor.

ElectroPhysik, for example, is offering its SIDSP coating thickness testers, which process all data at the point of measurement. This eliminates any chance for external environmental influence on the coating thickness measurement.

Notes company vice-president Aivars Freidenfelds, "In the past and with all other devices in the market, the probe or sensor generated an analog signal and sent it to the gauge for processing. From the point of measurement and the processor the signal could have been amplified or experienced a loss and as a result the thickness displayed might not truly reflect the actual thickness.

"With ElektroPhysik's SIDSP digital sensors,

only the completely processed thickness measurement is digitally ported to the gauge. And now with our Bluetooth Sensor adaptor and the SmarTest app, that reading can be ported to your smart device."

An SIDSP processes the entire measurement at the point of measurement, eliminating any external environmental influence. In the past and with all other devices in the market, the probe or sensor generates an analog signal and sends it to the gauge for processing. From the point of measurement and the processor the signal could have been amplified or experienced a loss and as a result the thickness displayed may not truly reflect the actual thickness.

Cables and wires have always presented an issue, as they can get in the way and they do wear. By eliminating this one component of the system as the conduit to processing a reading, the company has increased the integrity and accuracy of the reading.

"The SmarTest I think is a great example of ElektroPhysik's recognition of how the marketplace is evolving," Freidenfelds adds. "People have become so connected to their smart devices. The SmarTest and the SmarTest app align perfectly with the connection people have

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DeFelsko Corp. (Ogdensburg, NY), represented in Canada by Stone Tucker Instruments Inc. (Fonthill, ON), is another company using smart device technology in its measuring systems. Its PosiTector SmartLink, with a free

mobile app, turns a cellphone or tablet into a virtual PosiTector gage.

“The PosiTector SmartLink allows you to take advantage of the features of your smart device including touch screen, keyboard, microphone, camera, email, WiFi, Bluetooth, cellular, dictation tools, and more,” says marketing manager Richard Northrop. “It accepts

all PosiTector 6000, RTR-H, SPG and DPM probes, easily converting to a coating thickness gauge, replica tape reader, depth micrometer surface profile gauge or dew point meter.”

The PosiTector gauge accepts all coating thickness (6000/200), environmental (DPM), surface profile (SPG/RTR), and ultrasonic wall thickness (UTG) probes. This permits quick and easy conversion from a coating thickness gauge to a surface profile gauge, dew point meter or ultrasonic wall thickness gauge with a simple probe change.

“Each probe retains its own unique calibration information,” Northrop says, “allowing for full probe interchangeability. Long form certificates of calibration are included with each probe.”

There are both standard and advanced versions available, and all models feature built-in memory, onscreen statistics and a PosiSoft USB drive. Advanced models also include color LCD, onscreen graphing, and other features. Download and transfer options include USB, WiFi, Bluetooth, PosiSoft.net cloud-based storage, and new PosiSoft 3.0 desktop software.

DeFelsko's PosiTector RTR series measures and records surface profile parameters using Testex Press-O-Film replica tape. The new and

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patented PosiTector RTR P uses imaging sensors to measure the Peak Density (Pd) information contained in replica tape in addition to peak height.

Advanced models are able to generate 2D/3D images and SDF files of the replicated surface. Black and white 2D and color 3D images are ideal for inclusion into reports and for confirming a consistent blast profile. A high resolution SDF (surface data file) can be imported into third-party rendering software for further examination at a cost below that for interferometric or confocal profiling devices.

“With a single measurement, the PosiTector RTR Series produces a more accurate linearized peak-to-valley height measurement (HL) over the full range of Coarse and X-Coarse tapes,” Northrop says. “There is no need to average two or more replicas as required with analog micrometers.”

Fischer Technology Inc. (Windsor, CT) recently launched the Fischerscope X-Ray XAN 500 unit. This is a universally applicable energy dispersive x-ray fluorescence measuring instrument for non-destructive coating thickness measurement and material analysis with an element range from chlorine (atomic number 17)

to uranium (92), right up to 24 elements simultaneously. It is particularly useful for large specimens or difficult-to-reach locations.

Typical fields of application include measurements on large coated parts, like machine components and housings; mobile measurements in electroplating shops; mobile measurements of precious metals and solution analysis. Three point sample support ensures safe and repeatable measuring, even on curved surfaces.

The optional compact measurement box not only carries the whole system safely, it also converts into a mobile bench top instrument so small specimens can be easily positioned and reliably measured. A modern silicon drift detector achieves high accuracy and detection sensitivity.

Fischer’s fundamental parameter method allows for analysis of solid and liquid specimens as well as coating systems without calibration. The operation and evaluation of measurements as well as the clear presentation of measurement data is performed on a tablet PC, using WinF software.

The MTG range of hand-held ultrasonic thickness gauges from Elcometer (Rochester Hills, MI) can accurately measure up to 500mm

(20 in.) thick. The measurement modes include pulsed-echo (P-E), echo-echo ThruPaint and velocity mode, the last of these being for determining the homogeneity of a material.

It features user-programmable calibration memories, and displays readings, statistics, bar graph, run chart, reading and differential, and B-Scan. The unit has up to 40 user programmable limits, with audible and visual pass/fail warnings.

It stores up to 100,000 sets of readings in 1,000 sequential or grid type batches, and has

An integral zero disc and intelligent transducers for automatic probe recognition.

Elcometer claims the MTG’s range of ultrasonic thickness gauges offers unrivalled accuracy of ±1 percent, across its full thickness range on smooth, rough, curved, coated or uncoated surfaces. Further, it wirelessly connects to ElcoMaster data management software via Bluetooth or USB to PC, Android or iOS mobile devices, generating professional reports in minutes.

Whatever the testing need, it’s clear that accuracy has improved in recent years beyond anything previously attainable, or even imaginable. The only thing necessary is to take advantage of it. ■

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9	2.655 mils Ferr
8	2.655 mils Ferr
7	2.620 mils Ferr
6	2.640 mils Ferr
5	2.645 mils Ferr
4	2.640 mils Ferr
3	2.645 mils Ferr
2	2.660 mils Ferr
1	2.620 mils Ferr
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Switching from Hexavalent Chrome

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By this point, anyone involved in plating and anodizing knows that the pressure is on to reduce applications for hexavalent chrome. Excessive exposure to chromium, which is oxidative in the human body, can produce kidney or liver failure, and can eventually prove carcinogenic if inhaled excessively by plant workers.

And on the other hand, it has long produced some of the finest and most popular surface finishes and structural parts. Consumers are usually drawn to chrome-finished metal or plastic parts, just as regulators are equally averse to any extension of its uses, and in some instances, there is no viable alternative.

There are three primary substitutes for hexavalent chrome: trivalent chrome, nickel, and a range of materials that can be applied by high velocity oxygen fuel (HVOF) coating. Hexavalent chrome is still essential for some applications, however, and no currently viable technologies have been able to replace it across the board.

“Decorative trivalent chrome processes have been on the market for quite some time,” says Collin Peters, North America business manager, functional chrome and elec-

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troless nickel, with Atotech Canada Ltd. (Burlington, ON) “They can offer a range of unique appearances that are very popular, especially in the automotive industry.

“Functional trivalent chrome processes are a much newer development. This year at SurFin, Atotech officially announced its first generation functional trivalent chrome process, which will be introduced to the market in the near future for certain applications.”

Electroless nickel and electroless nickel composites, he notes, present notably lower health and safety concerns. This in turn means lower reporting requirements compared to hexavalent chrome.

“This process offers uniform deposition, as well as acceptable wear resistance as deposited for certain applications. It has the ability to co-deposit particles such as silicon carbide or Teflon to further enhance some deposit properties.

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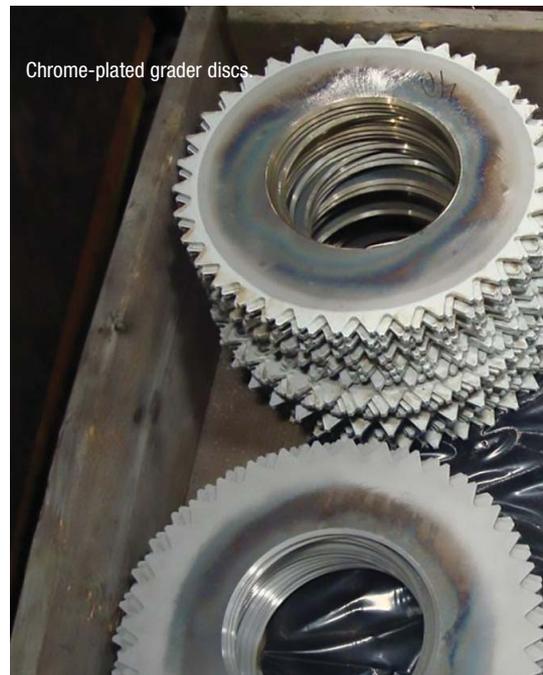
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But as an alternative to hexavalent functional chrome, it is application specific, as electroless nickel cannot match all the properties at once.”

Grant Keers, global marketing director for Pavco’s decorative finishing division (Charlotte, NC), says there are various aspects to the hexavalent chrome situation.

“Decorative hexavalent chrome is to be banned in Europe on September 21, 2017,” he points out. This is likely to have a knock-on effect in other countries.

“There is a viable alternative in the trivalent chrome process. The chloride-based trivalent process is always difficult, because the color was not very close to that of hexavalent chrome. The sulfate process comes closer to hexavalent chrome in appearance.”

Pavco offers chloride and sulfate processes, as well as a dark chrome process. This is a fashion finish.

“It came in nine years ago,” Keers says. “People thought it would last for two years, but nine years later, it’s still growing.

“This is popular primarily for automotive, especially with the higher end cars. You won’t see it on economy vehicles.”

Functional chrome would not be affected by this European legislation, there being no currently viable alternative. Trivalent chrome is not effective for functional parts, and plating on plastics (POP) etching is also not affected.

“This will be a quantum leap in the field,” Keers says. “To help people, we’ve put up a non-commercial website, nomorehex.org. It’s a non-partisan site that clarifies what’s allowed from now on, and what companies dealing with European customers must know.”

In the US, he adds, the Environmental Protec-



tion Agency (EPA) has established new emissions limits for hexavalent chrome that are virtually impossible to achieve. The intent clearly is to force change on the industry.

"It's like an accordion," Keers observes. "The EPA is squeezing one side, and the EU is squeezing the other."

Switching to the new processes requires some changes in production, particularly regarding the anodes to be used. For sulfate, mixed oxides are used, primarily iridium oxide. Compressed graphite is used with the chloride process.

These processes, according to the National Association for Surface Finishing, should be performed with the plating area walled off. A curtain to prevent air movement is needed as well. Workers require protective clothing for workers in the plant, and there must be means to capture and dispose of fugitive dust as well.

Which industries have special concerns about hexavalent chrome? Peters says aerospace sees it as a growing concern. The oil and gas industry increasingly appreciates corrosion-resistant thermal sprays, especially for applications in environments that are chloride-rich.

"Decorative trivalent chrome processes require very little modification of plating equipment or plant operations," he observes, "aside from some simple materials changes and auxiliary equipment. Functional trivalent chrome processes require more modification of plating equipment and plant operations compared to the simplicity of plating with hexavalent chrome.

"These plating lines will much more resemble a decorative plating line with steps for rinsing, cleaning, and nickel deposition. But both

decorative and functional trivalent chrome processes have much fewer safety concerns compared to hexavalent."

The electroless nickel and electroless nickel composites processes, he adds, require a relatively simple plating line, although the electroless nickel tanks themselves require specialized design and construction specific to the properties of electroless nickel.

Special safety concerns for electroless nickel plating should be considered as the solutions are operated at an elevated temperature, typically up to 90 deg. C. However, overall, the safety concerns are less compared to hexavalent chrome plating.

Thermal spray processes such as HVOF should be operated automatically and in enclosures specially designed to extract fumes,

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“There are combustible elements to this type of deposition,” Peters points out. “Fuel gases, oxygen – and extremely high temperatures up to 15,000 deg K. HVOF operates at a very high current.”

HVOF produces a functional deposit, with a high deposition rate, and can provide thick coatings. It also has good corrosion resistance compared to chrome in certain environments, but it is not, by any means, the cheapest process out there.

For the future, Peters says Atotech would prefer to see trivalent chrome technologies further implemented in the industry, for both decorative and functional plating.

“From the decorative side, the available processes are very robust and offer many attractive visual properties, more so than hexavalent,” he states. “From the functional side, although the processes are quite new, they offer the best alternative to hexavalent chrome, as all properties are matched or enhanced, such as corrosion resistance, deposit hardness, and wear resistance.”

Mar-Tech Holdings (Hamilton, ON) offers hard chromium systems, including self regulating processes, organic type systems, traditional fluoride systems, and conventional chromium process chemistries. These hard chrome plating chemistries, the company says it also has unique, high-speed plating chemistries.

Its electroless nickel systems provide low to high phosphorous deposits both in traditional and also as lead/cadmium free systems. It also has a black electroless system which, it claims, has significant economic advantages in the decorative automobile and plumbing industries.

Dynamix Inc. (Markham, ON) also offers a wide range of chemicals for metal finishing processes from anodizing to zinc plating, including a complete product line for functional chrome plating. The company manufactures products blended with hexavalent chromium for functional and decorative chrome processes, along with hexavalent conversion coatings.

The technologies are gradually evolving, and regulatory pressures will no doubt drive further change. While this continues, any finisher working with chrome needs to stay in touch with suppliers, and watch for new developments that meet the changing standards. And in many cases, find helpful new ways to expand the product offering. ■

Managing the other Factory Output

Few topics have strained engineering creativity in recent decades as much as pollution control systems. While other questions in the paint and coatings field are purely technical, emissions issues can easily become political footballs, as well as falling under different regulatory regimens in different jurisdictions.

As a result, yesterday's technical solution sometimes turns into tomorrow's problem. Still, there are key areas of industrial emissions that have been consistently important, and technology for addressing them has made great strides in recent times.

Adwest Technologies (Anaheim, CA) is known for its RTO Retox systems. Brian Cannon, vice-president, says his company has noticed an increase in VOC abatement applications.

These not only include volatile organic compounds (VOCs) but halogenated and acid gas compounds, particulates and sulphur compounds. Corrosive acid gas and sulphur processes are areas where the company has specialized over the years.

"This requires," he says, "that the regenerative thermal oxidizer be designed with the proper metallurgy including stainless steel, Inconel, and even titanium alloys to operate in these difficult air toxic streams. Being part of the CECO Environmental family of air pollution control companies, we have the ability to design a complete VOC and particulate abatement system train for our clients with RTOs, cyclones, fabric filters and acid gas scrubber systems."

Any pollution control system, of course,

needs to be well-selected and designed, and well managed. A common problem is that many clients for air abatement systems focus on the capital outlay, not on the longer term.

"The biggest expense over a 20-year lifespan is the energy and operating costs of the RTO, scrubber, cyclone, etc.," Cannon says. "The lowest sell price or capital cost is very deceiving, as there are various levels of primary and secondary energy recovery that can significantly lower the RTO energy cost."

"Adwest has sold many systems with up to 97 percent primary energy recovery, compared with the 95 or 93 percent primary heat recovery that many low cost suppliers provide. Today's energy costs, which we all know are low, will increase in the future, like in Europe. In my 38

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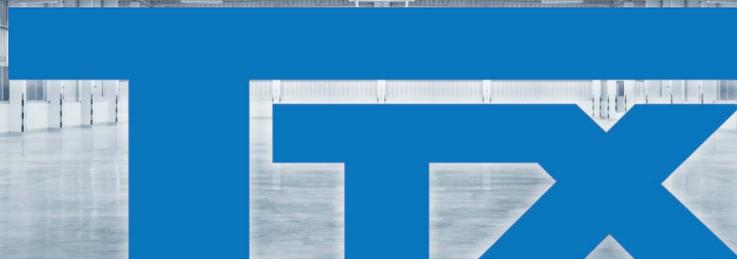


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years in RTO and thermal oxidizer capital equipment sales, we have seen the RTOs and oxidizer systems become more energy efficient and this trend should still continue.”

Environment ministries in most jurisdictions still require independent third-party stack testing at various intervals of RTO thermal oxidizers, dust collectors, ESPs, scrubbers and related systems. Adwest’s oxidizers, Cannon states, have automatic PLC controls with digital or analog telemetry to do data logging for MOE record keeping and trending for an environmental authority to prove operational compliance.

“We can provide 24/7 real time service diagnostics for our RTOs as well when our client calls our technical service group to ask questions about their system,” he says.

A key issue always, he adds, is preventive maintenance. Timely change-out of consumables such as thermocouples, as well as basic cleaning, is always the first line of defence for pollution control systems, but is also the easiest step to skip when the pressure is on within the plant.

“Regular preventive maintenance service should never be ignored or postponed on any APC equipment,” he insists.

Proper design of any pollution control system is essential, yet companies still sometimes miss the mark. They may fail to work out their actual level of waste or emissions, or to allow for the fact that increased production requires a redesign or expansion of an existing system.

For in-plant and in-laboratory applications, where the scale of operations is obviously much less, MV Products (North Billerica, MA) is offering a vacuum pump inlet trap. This is aimed primarily at central laboratory vacuum systems, and offers protection from organic solvents, water vapor, acids, and particulates.

Herbert Gatti, the company’s head of marketing, says, “The MV Multi-Trap Vacuum Inlet Trap provides up to 99.999 percent efficiency and is modular to protect central source vacuum systems from 70 to 2,000 cfm. And it’s easily customized to meet facility requirements.”

The system has a large, knockdown stage to collect heavy solid and condensable contaminants and can include up to six separate stages of user-selectable, replaceable filter elements. Traps can be tailored to specific vacuum systems by selecting from stainless steel gauze, copper gauze, molecular sieve, activated alumina, activated charcoal, Sodasorb, or pleated polypropylene elements.

PKG Equipment Inc. (Rochester, NY) makes waste treatment systems for batch treatment,

“Emissions issues can easily become political footballs, as well as falling under different regulatory regimens in different jurisdictions.”



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The company says its industrial ventilation systems are manufactured in accordance with the latest edition of the Industrial Ventilation Guidebook from the American Conference of Governmental Industrial Hygienists, Inc.

(ACGIH) and the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Construction Manual. This ensures they require minimal maintenance and perform effectively in corrosive environments.

The design of components such as ductwork, exhaust hoods, fans, blowers and scrubbers is based on the chemical properties of the exhaust fumes, air temperature, and general shop conditions. Control panels to automate



MV Products' Multitrap System is designed to be customized.

scrubber system electrical functions, such as pH control, fresh water intake, conductivity, static pressure monitoring and other applications, may be UL 508 A certified when requested. PKG provides complete installation services.

The company also offers atmospheric wastewater evaporators and clarifiers, plus two standard gas-fired evaporators. It custom designs and fabricates evaporators of different sizes, materials and fuel types.

Viron International (Owosso, MI) has made its reputation with the VBS series of blower-scrubbers. These vary in capacity from 500 cfm to 15,000 cfm.

More recently it has focused on the collection of chromic acid in chrome plating applications. The company's Viro-Chrome 9000 Series chrome scrubber system was designed to meet the California Hexavalent Emission requirements along with US federal standards, and Viron says it exceeds these requirements of 0.006 mg/Amp hour of chrome emissions.

It is available in PVC – Type I and fiberglass-reinforced plastic (FRP). The company has developed its own FRP laminate construction to maximize the performance of FRP in the harsh environment of scrubbing chromic acid. ■

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The Changing World of **Waxes**

The market for waxes in coatings blends is changing. Petrochemicals producers are moving away from them in favor of higher value-added products, which in some cases means more organically derived waxes are coming into the field as substitutes.

Waxes are not just water-repellents or finish enhancers, since they also extend the properties of other materials. Blended with the appropriate level of technical skill, they can offer significant cost savings.

Wax is still a relatively cheap alternative as a binder. Choosing the right one can be a struggle, but the art of successful formulating is always a key to profitability.

Plant-based substitutes are quite new in the market, and since there can be a price premium involved, they still have limited use. However, the overall price differential is diminishing, and they also offer in some cases, interesting and different properties to traditional waxes.

One supplier here is Cargill, which is employing a range of vegetable sources to make waxes. These include palm oil, and of course linseed oil, which has a long-established history in the paint and coatings area.

The company says it is particularly suited to applications that require excellent film forming properties. It offers crude (degummed and fil-

tered), supreme (alkali refined, bleached and dewaxed), and reacted (DCPD modified, increased viscosity) linseed products.

“Global vegetable oil production is large and growing,” says a Cargill spokesperson, “and vegetable waxes represents a small but growing part of this demand, so future availability is assured. Vegetable waxes outperform mineral waxes on a number of points, and can be modified and combined with other waxes to achieve optimum price and performance.”

Vegetable wax prices can be agreed for up to one full year, allowing a customer to budget reliably and focus more resources on development of their business. In addition to any technical benefits, or availability, there is also the consume appeal of using renewable resources that are free from genetically modified oils, and contain no animal-derived substances.

Soy, canola and sunflower oils are all candidates for making new products. Cargill’s technical sunflower oil is extracted from northern-grown seed, where growing conditions enhance the fatty acid composition of the oil, giving it better drying characteristics than soybean oil and improved color retention as compared to linseed oil.

These qualities make sunflower oil a quality choice for alkyd resins, urethanes, and other applications. Cargill fully refines the oil and, if desired, removes natural waxes by



chilling and filtration.

The Oxi-Cure product line of esters is designed to help paint and coatings customers achieve low VOC levels in their formulations. Products include coalescents and crosslinkers to provide superior film forming and reduced VOC.

And the Agri-Pure Gold line of vegetable oils is claimed to offer excellent carrier fluids in ink applications where low VOC and low cost are desired. Alkyd formulation from select oils has proven cost effective as an alternative to soybean oil, the company says, in a variety of ink and coating applications.

Micro Powders, Inc. (Tarrytown NJ), which is represented in Canada by A.S. Paterson Co., is a supplier of a broad range of wax technology, specialized micronized waxes, wax dispersions

Staying Unstuck

Polytetrafluoroethylene –PTFE – is related to the waxes by function, since it’s water-repellent and offers a super-low coefficient of friction. However, its chemistry is radically different, and it offers great versatility in application because of its tolerance of temperatures over 250 deg C.

Fluoropolymers, of which PTFE is the market leader, have been around for 80 years, so today there is a range of formulations in the market. Invented by DuPont (now Chemours), the company’s brand-name, Teflon, is still the best-known in the market, though today it also covers related resins with different formulas to PTFE per se.

Teflon industrial coatings, which usually use a primer and topcoat, can be used on carbon steel, aluminum, stainless steel, steel alloys, brass, and magnesium, as well as on non-metallics such as glass, fiberglass, some rubbers, and various plastics. Optimum adhesion is obtained by roughening the surface before applying the coating. Except where specifically mentioned, most Teflon coatings for industrial use require a primer coat.

Typical applications today include fuel filters, heat exchangers, carburetor shafts, ball valves, bearings, filters, cryogenics, and some aerospace uses. In all these, the resin’s ability to take a pounding under high heat conditions means it performs well over the long haul.

PFA (perfluoroalkoxy) tends to be used in applications where chemical resistance and low friction properties are more critical than high-temperature capabilities. This includes chemical impellers, mixing tanks, valves, pumps, laundry dryers, and molds.

A copolymer of ethylene and tetrafluoroethylene, Tefzel ETFE is reputedly the toughest of this family of coatings, though not the most heat-resistant. It is sold in powder form, and can build up coatings as thick as 40 mil, for applications such as tank linings, pumps, impellers, flanges, conveyor chutes, exhaust ducts, and electrical insulators.

In addition to these, there are various blends, often solvent-based, that can be tailored to individual applications requiring excellent release, and the ability to take the stress of prolonged exposure to heat.

and emulsions. Its forte lies in developing innovative micronized wax technologies to meet a formulator's needs.

Toni-Raye Gizzo, marketing manager for MPI, says its newest products include Micro-Touch polyurethane beads for soft touch, matting and burnish resistance.

"MicroTouch additives," she says, "are micron-sized elastic particles that distort when disturbed by a physical force (such as finger

touch or abrasive action) and then return to their original spherical shape when the force is removed. These products can be used in combination with many different types of coating resins to achieve effects that range from satiny smooth to leathery to rubbery.

"MicroTouch additives are highly resilient particles that can be used to modify and enhance the feel of a coating surface. These additives will provide a matte appearance as

well as superior scratch, burnish, and mar resistance."

These additives are available in several particle sizes, each of which brings different tactile properties. They offer an alternative to formaldehyde-based materials such as polyureas.

From the same company, PropylMatte 31HD and AquaMatte 26HD are densified polypropylene and polyethylene matting waxes for greater stability in waterborne and UV systems. These polymeric gloss reduction agents, Gizzo says, provide excellent burnish resistance and do not affect the viscosity of a coating formulation like many silica-based matting agents.

MPI's Microspersion 1406 is an aqueous dispersion of nanoparticle PTFE for lubricity and surface protection in full gloss coatings. And Nylofine 1000, a highly durable ultrafine polyamide powder for abrasion and wear resistance in high specification coatings.

One wax application at the leading edge has emerged for the US Army's Humvee replacement. The all-purpose armored Oshkosh JLTV (joint light tactical vehicle) features what's called polyfibroblast self-healing paint. This has microscopic polymeric spheres filled with an oily liquid, so that when the painted surface is scratched, the spheres break and fill the abrasion with a waxy 'scar'.

While the applications for now are strictly military, Capt. Frank Furman, who manages logistics research programs for the US office of Naval Research, observes, "there's no reason at all why it couldn't be incorporated long-term into any ground vehicle."

Polyfibroblast is a powder that can be added to most commercial paints. When a scratch happens, microcapsules within the primer are broken and they release essentially new primer into the scratch.

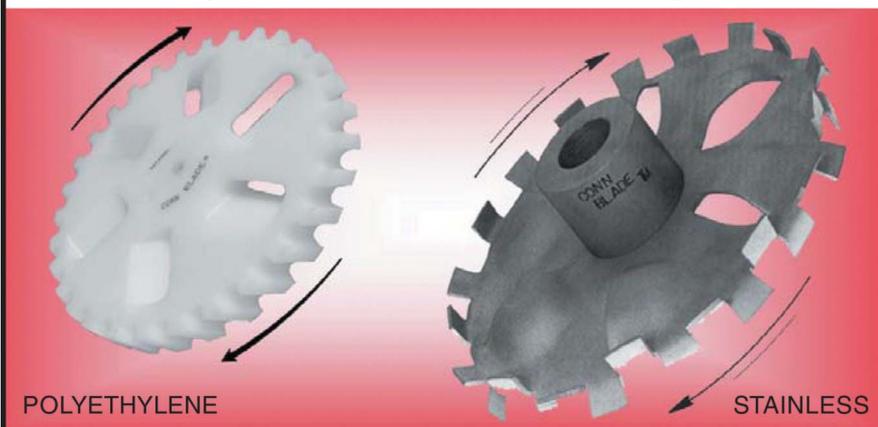
"That seals the metal, the steel or aluminum, from the elements so it's less likely to rust or decay," Furman says. "Since polyfibroblast is an additive, the cost to put it into a primer the department already buys to coat vehicles is minimal."

For now, the Marine Corps plans to apply the primer to the JLTVs slated to replace older Humvees. But with the right testing and adjustments, polyfibroblast could be applied to anything the Corps tries to protect from corrosion.

That could include aircraft, which could save even more money since corrosion on aircraft is even more expensive to fix than on ground vehicles. ■

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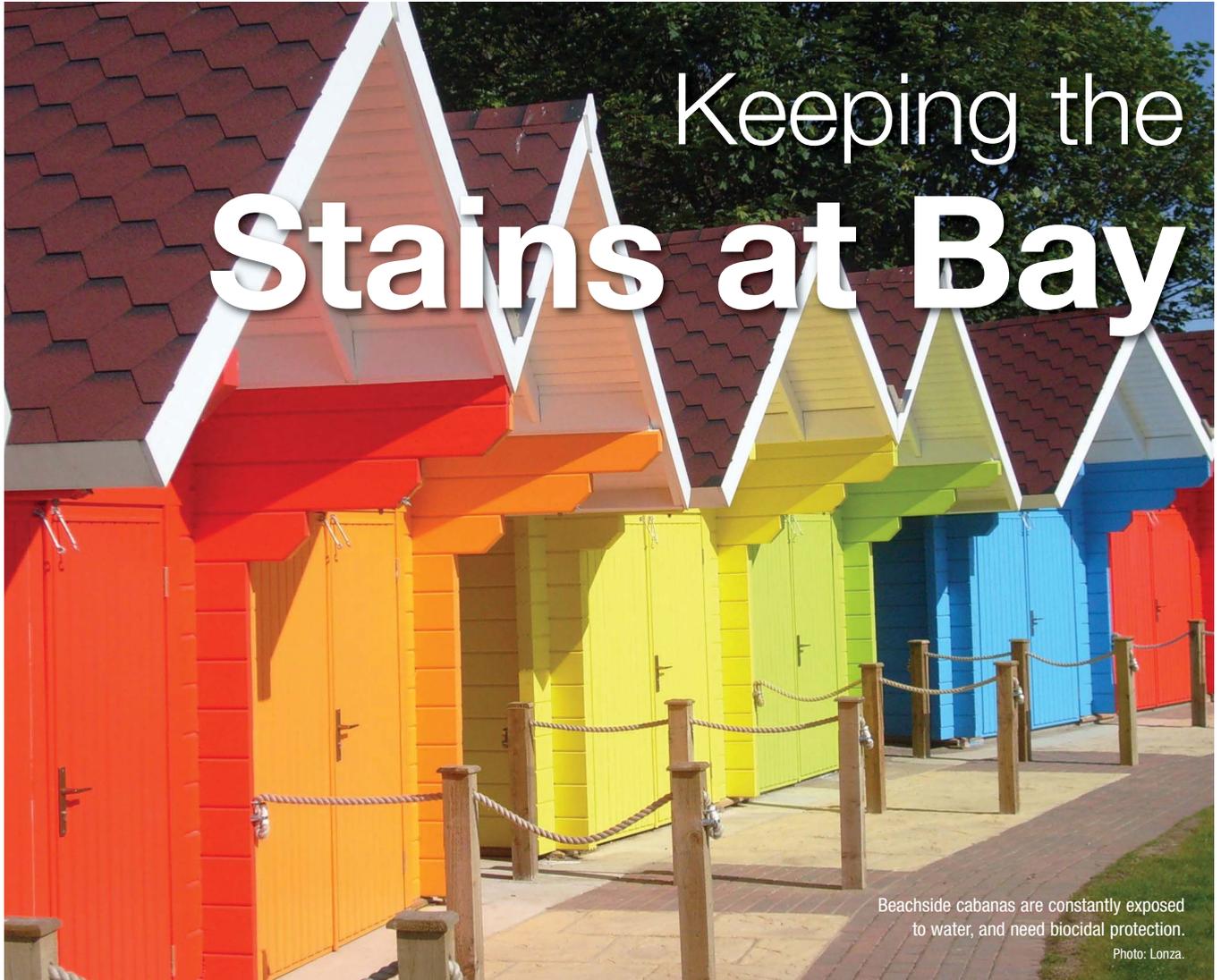
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1



Keeping the Stains at Bay



Beachside cabanas are constantly exposed to water, and need biocidal protection.

Photo: Lonza.

The whole field of biocides – which includes fungicides, algacides and other types of preservatives – is a tricky one for formulators in Canada. For one thing, it's about the only area in paint and coatings where the ingredients are explicitly designed for toxicity. In other aspects of formulation, any move to new ingredients usually aims to reduce any potential harm.

Secondly, and most frustratingly, for both suppliers and formulators, the Canadian approvals process, while worthwhile and necessary, can be expensive and time-consuming. The law of unintended consequences cuts in here, so that better products, or those that are safer to handle in the plant, sometimes aren't available in Canada for months or years after they enter other markets.

As a result, the whole field generally changes quite slowly. A core group of compounds and blends maintains a grip on the market, and

change is a gradual process.

Lonza, for example, recently introduced an addition to its Proxel range of preservatives in Europe, but it is not yet available on this continent. This in-can preservative is designed to address new European regulatory requirements.

Proxel LS Preservative is a dual-active, broad-spectrum biocide for wet-state preservation of water-based paints, adhesives and construction chemicals. David Tierney, Lonza's global business director, says it offers powerful, broad-spectrum protection at target dose levels, and this will not cross a limit on allergen levels.

The product is, he says, free of formaldehyde, MIT and VOC, and is pH and temperature stable. It benefits from the use of two complementary active ingredients providing an enhanced antimicrobial efficacy and protection from bacteria, yeasts and molds in a wide range

of industrial applications.

"Regulatory requirements are a key driver for biocide selection," he notes. "Proxel LS Preservative has been developed to not only enable customers to avoid the adverse EU H208 labeling requirements but also to provide robust, long-term preservation for the target industries."

Scott Brown, Lonza's manager of applications technology with Lonza Inc. USA (Alpharetta, GA), says that compared to earlier chemistries, the current generation of agents is more tailored to the intended use, and to the associated microbial species which must be controlled.

"Along with being highly active, many of the early biocides were also highly persistent," he notes. As time passed, there was a shift in the requirements for biocides used for material protection, with a trend towards greater empha-

sis on compounds exhibiting more selective toxicity and lower environmental toxicity.

“Associated with the shift towards more environmental responsibility was the growing realization that broad species toxicity and unlimited persistence are not necessarily desirable biocide characteristics, but rather that the biocide’s spectrum and persistence need to be commensurate with its intended end use.”

The isothiazolinone chemical family, which

contains an isothiazolinone ring with an activated N-S bond that can react with nucleophilic cell entities and thus exert antimicrobial activity, was introduced in the 1960s and 1970s. Since that time other isothiazolinone derivatives have become available and usage of isothiazolinone biocides has grown to the point where today they represent one of the major types of biocides used for material protection.

“Isothiazolinone biocides represent a step

away from the broadly toxic and highly persistent first generation group of biocides, and unlike formaldehyde condensate biocides, they are not associated with a carcinogen,” Brown explains.

Nevertheless, in some regions, isothiazolinone biocides have come under regulatory pressure, and all commonly used isothiazolinone biocide active agents are either known or potential skin sensitizers. As a consequence, hazard communication regulations can impact the labeling required for materials protected with isothiazolinone biocides.

“Due to the regulatory pressure on organometallic biocides,” Brown says, “a number of entirely organic biocides were developed, and many of these were prepared as formaldehyde condensates. Over time, various regulatory agencies have evaluated the risk of airborne formaldehyde, and some of these risk assessments have resulted in dosage restrictions or label warnings for formaldehyde condensate biocides. As the restrictions on formaldehyde condensates proliferated, isothiazolinone in-can biocides such as our Proxel LS, came to be popular non-formaldehyde options.”

Sodium pyrrithione, he adds, is a good fit as a co-biocide with isothiazolinones in that the pyrrithiones avoid the negative issues associated with early generation biocides. It has been assessed for environmental fate and it was found to undergo rapid photolysis. This compares favorably with some of the first generation organometallics such as TBT, which are known to be persistent in the marine environment.

Troy Chemical Co. Ltd. (Concord, ON) not long ago acquired a portfolio of dry-film and wet-state preservatives that includes Fungitrol, Nuosept, Bacillat, Bakzid, Bodoxin, Cinon, Cleanguard, Ebotec, and Plastiguard. The company’s product offering in this field now runs to over 400 items.

Chemroy Canada Inc. (Brampton, ON), which also represents Lonza in this country, additionally markets the Amical line from Dow. Amical preservatives are antimicrobial agents, based on the active Diiodomethyl-p-tolylsulfone, which are useful for the control of microbial degradation in a variety of end-use applications.

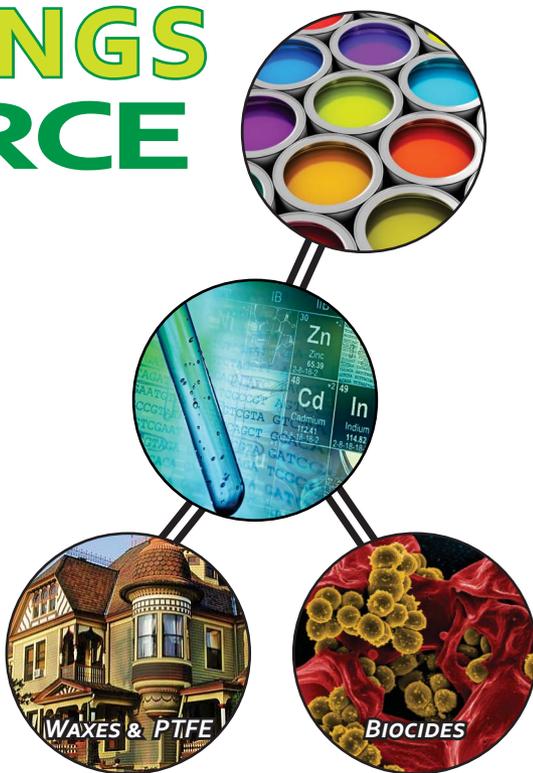
These are claimed to provide superior protection against mildew and latex paint films. Further, their use does not adversely package stability. In various tests, chalking, color retention, checking and flaking ratings of coatings containing Amical preservatives were similar to control paint films.

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Biocides containing a halogen group such as bromine or iodine, the company says, can cause yellowing of the dry film of some white paint formulations. Discoloration caused by Amical, however, has no effect on mildewcide activity or general paint stability, and typically, the discoloration does not affect the color of a tinted paint.

Use-levels are dependent upon the individual formulation of the latex paint system to be protected and upon the expected severity of exposure conditions. Thorough testing is recommended by the company to optimize the use level in particular formulations.

The use rates will vary from 1000 ppm to 5000 ppm on an active basis. Given the toxicity profile of Amical preservatives, they are especially suitable for use in interior applications.

Water-based pigment dispersions are susceptible to fungal attack, as is the case with latex paints. Further, various organic surfactants and suspending agents provide an excellent source of nutrients for fungal contaminants in such stored dispersions. Amical preservatives reportedly provide excellent protection of such slurries at 0.02 to 0.15 percent by weight of active ingredient, based on the weight of the slurry.

Buckman Canada Ltd. (Vaudreuil-Dorion, QC) offers a wide range of its Busan products for the protection of hardwood and softwood timber, logs, poles, posts, agricultural, landscape, and construction lumber. Commonly, the company says, deterioration of wood can be attributed to mold, sapstain or blue stain, and wood-destroying fungi, and these are therefore the primary targets for Busan biocides.

With sufficient moisture, fungal spores that land on wooden surfaces germinate rapidly. The darkly pigmented spores and mycelia produce a discoloration of the surface that appear as an unsightly, uneven weathering. Sapstain Fungi are similar to molds in that they do not affect the strength of wood, but rather its appearance and permeability.

Unlike molds, however, sapstain fungi not only cause surface discoloration but also discolor the interior of the wood. The color ranges from gray to blue, and sapstain is often referred to as blue stain.

There is, therefore, a broad range of options for today's formulators. Hopefully, in future, that will be expanded still further as new chemistries enter the Canadian marketplace. ■

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Paint and Coatings on the **World Stage**

BY GARY LEROUX

Since the recession of several years ago, the paint and coatings industry has been bouncing back to varying degrees, depending on the country and the coatings industry segment. The industry grew overall by five percent worldwide in the past eight years despite the recession. This exceeded overall GDP growth, which averaged less than 3 percent in most Western economies.

The average annual returns for coatings industry companies is an impressive 27 percent as opposed to 18 percent for the Standard and Poors Index of companies. The coatings industry has proven to be the strongest among the chemical sector for return on investment. This fact has also led to continuing organic growth as well as significant consolidation in the industry around the world. Forecasted global coatings demand is expected to continue growing through to 2018 and is predicted by several respectable firms to be in excess of five percent. The global market value of the paints and coatings industry is projected to grow from approximately \$130-billion to around \$181.3-billion by 2020 and projected growth is at an annual rate of growth around five percent between 2015 and 2020.

Demographic and economic trends in different countries and regions exhibit different patterns of consumption and production. These jurisdictions are also governed in different ways, with some focused on aggressively assessing chemicals in commerce and regulating the industry based on risk assessments conducted. This is a common and persistent practice, which began in earnest more than 10 years ago and will continue to impact the coatings industry for the foreseeable future.

While some countries may not regulate as heavily as Western governments, they are still mindful of the need to be environmentally conscious as products are often shipped around the world and sold by large multinational companies. These companies want to preserve the image of their brands and thus exhibit the same concern with respect to sustainability in coun-

tries throughout the globe, often despite lax in-country regulations. Paint and coatings companies continue to thrive in a heavy regulatory environment by investing and innovating with new technologies to meet – and exceed – new regulatory requirements, while meeting consumer demand.

The aging population impacts the coatings sector as it does all industries, some more than others. Population growth is expected to trend upwards in Canada and the United States with a mixed balance of slower, but increasing birth rates along with targeted ‘economic’ immigration focused on knowledge and skilled workers.

The situation is different in Europe with stagnant and declining birth rates where the focus is on substantial immigration to help support their respective economies. Even the top European economy of Germany must increase immigration to sustain its economic growth. This is the same for China and Japan, powerhouse countries with very low birth rates and aging populations. The latter has had a very high debt to GDP ratio for the past 20 years.

This ultimately means slower economic growth as productivity will be challenged due to slow growth rates. Some have suggested that this is already the trend in these regions, though modest, it still remains to be seen if this trend continues over the next 10-15 years or if policies will be created to stem the tide. If not, a declining GDP in those countries will not portend well for industry generally.

While the economy has not been on fire in North America, it has certainly trended upward in the past year in the United States. Given that the US is Canada’s largest trading partner, and with a low Canadian dollar vis-à-vis the United States, things are slowly improving in Canada to some degree, with an increase in trade and modest growth expected to return to two percent over the next six quarters.

Both countries are each other’s largest trading partner, with 80 percent of Canada’s trade done with the United States and 43 US states listing Canada as their number one customer. Few

believe that Canada is the largest customer of the vast majority of US states, but it is a fact. Both countries benefit from this substantial trading relationship. Both countries have come out of the economic recession for the most part with employment and economic growth tracking upward generally. However, employment and a growing skills gap in both countries remains a real concern, especially in the chemicals industry, with growing demand for highly trained and experienced workers in the most efficient and productive facilities. Qualified chemical engineers and chemists are highly sought after in the chemical industry and coatings is no exception.

Another challenge to growth is the lagging performance of some larger end markets for paint and coatings, such as construction and automobiles, both of which have been slower than expected but still growing. If those end markets are struggling, so is the market for paint and coatings, adhesives, caulks, flooring material, etc. These end markets drive secondary markets such as furniture and fixtures as well as home decorative coatings. But the fact remains that the recovering housing market is still half of what it was at the housing boom peak in the United States. In Canada, there is still slight growth in new housing construction, due to low interest rates and millennials entering the housing market.

While coatings associations like CPCA represent the large multinational coatings companies around the globe, as well as small- to medium-sized enterprises in their countries, these associations are also members of the International Paint and Printing Ink Council (IPPIC). CPCA is a founding member of this organization, formed two decades ago. Ever since IPPIC has worked to improve communications and coordinate policy on matters of international concern to the paint and printing inks industry.

The council provides a forum for exchange and cooperation on major issues and priorities facing the industry, and has established itself as a global voice for the sector. IPPIC regularly shares information on issues in the

respective member countries represented by IPPIC such as regulatory initiatives, international standards, and best practices related to sustainability and stewardship and more. An example of the areas currently worked on by IPPIC include the following:

- IPPIC has excellent representation on the ISO standards development committee for nanotechnology, which continues to be of ongoing concern around the world. The emerging terminology for nanotechnology standards has the potential to integrate common, everyday paint and coatings products under the umbrella of 'nanomaterials' resulting in unwanted regulations requiring continuous reporting, labeling and even restrictions on end-use applications. This needless outcome can be avoided by providing sound, science-based recommendations to the standards development community.
- IPPIC continues to support the United Nations Global Alliance to Eliminate Lead Paint (GAELP) and works closely with the United Nations Environmental Program (UNEP) and the World Health Organization (WHO) to move governments to act in restricting the use of lead in paints, as Canada and other countries have for architectural products, focusing on 'decorative' paints and coatings, which have the potential to result in exposure to children.
- IPPIC has also pledged financial and in-kind support for the planned technology transfer project by the United Nations Industrial Development Organization (UNIDO) in Latin America.
- IPPIC has been active as part of the Marine Environmental Protection Committee-68 at the International Maritime Organization (IMO) with respect to anti-fouling measures under the Ballast Water Management Convention. IPPIC's Marine Coatings Technical Committee has participated in the development of a test method to determine the compatibility between ballast tank coatings and active ingredients used in treatment systems. As a result the mandatory code related to amendments to MARPOL was achieved and is expected to come into force in January 2017 with no restriction placed on biocidal antifouling coatings, as there was no scientific justification preventing their use in polar waters. This was the goal in initial drafts but IPPIC's Antifouling Coatings Committee was successful in having it removed.
- IPPIC participated in the UN Sub-Committees of Experts on the Transportation of Dangerous Goods and on GHS in Geneva at the end of June. As a result of that meeting IPPIC will be actively engaged in advocacy on the following: 1) a practical approach for a packing group assignment for corrosive mixtures of Class 8; 2) hazard communication for Class 9 environmentally hazardous goods; 3) workable solutions for labeling of small packages and of non-dangerous goods during transport; and 4) flexibility in linguistic variation of label elements where safety is not affected.

Paint and coatings continues to thrive on the world stage as seen by the slow, but steady growth in the industry. The members of IPPIC and the contributions made by IPPIC on the issues noted above demonstrates industry's commitment to global initiatives impacting the paint and coatings industry around the world, including in Canada. Global challenges related to heightened concerns about impacts of chemicals on human health and environment are to be expected, but also expected is a sound, science-based approach to actions flowing from such regulations. This global challenge has been taken up by paint and coatings associations around the world and all paint and coatings associations continue working together in the best interests of the industry. ■

Gary Le Roux is president of the Canadian Paint and Coatings Association.

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expanded geographic footprint.”

Dan Canavan Sr., D.B. Becker's president & CEO added, “Maroon Group and D.B. Becker share a similar vision for continued growth and sales excellence. This acquisition will provide a stronger and more sustainable organization moving ahead.”

Report Released on Chinese Marketplace

The China National Coatings Industry Association has released a report on its marketplace. China, it states, is the largest national market for paints and coatings in the Asia-Pacific region, followed at some considerable distance by India and Japan. It is also the leading Asian country in consumption of waterborne coatings, primarily from increased demand from the furniture trade.

After four years of rapid growth, the Chinese paint market, which has a total coatings production exceeding 10-million metric tons, started slowing down in 2013 due to a difficult global economic situation and slowdown of certain industries resulting from rising costs of labour, land and raw materials, and increasing taxes. However, demand for paints and coatings in the construction, automotive, appliance and infra-



A big country that needs a lot of paint.

structural sectors continued to grow, and the coatings market in 2014 grew by eight percent over 2013.

Since 2009, the auto industry has surpassed that of America to become the largest in the world, in 2013 producing 22.1-million automobiles, 12.1-million of which were passenger cars.

This continuous growth also brought momentum to the automotive coatings industry in China, although the pace is expected to slow down in 2015. CNCIA estimates the current market of OEM coatings for passenger vehicles (including cars, SUVs and MPVs) was about

360,000 metric tons in 2013. This was 15 per cent over 2012, and represented roughly half the whole Chinese passenger vehicle coatings market. The OEM coatings market should grow by seven to eight percent annually in the future.

Fierce competition in the local automobile market is another reason why Chinese automobile producers speed up their outbound investments. The ‘walking out’ policy of the Chinese central government encourages domestic car producers to invest in other developing countries such as Brazil and Russia to build overseas manufacturing bases.

By the end of 2013, China had 110-million passenger vehicles. The large size of the existing car market will lead to fast growth of market demand for car refinishes in the coming years. Some foreign companies such as AkzoNobel and PPG have already invested in new operations for this segment. The central government required waterborne materials to be used in new production lines after 2012.

Growth in China's real estate market slowed in recent years and the market potential in architectural paint is not large enough to absorb the growing paint production capacities in China.

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Because China's architectural coatings market is entering an era of single digit growth, some coatings producers have already begun to adjust their business strategies to meet this new challenge. Competition for the real estate market between architectural paint companies is expected to be fierce in the coming years.

Although market demand for painting new apartments will not grow as fast as before, demand stemming from repainting old apartments is catching up rapidly and this market sector will grow by 50 percent annually. Construction of public infrastructure such as highways and railways still attracts huge investments. In 2014 the investment in the public infrastructure sector grew by double digits, apparently outperforming the real estate sector.

Product Category Rule Developed for Architectural Coatings

The global public health organization NSF International has collaborated with the American Coatings Association to develop the first North American product category rule (PCR) for architectural coating products for interior or exterior

applications. The PCR for architectural coatings uses recognized methods for reporting environmental impacts, and helps architects and contractors identify products that meet their sustainability goals.

Product category rules define how to conduct a life cycle assessment (LCA) for a product group and what to include in the resulting environmental product declaration (EPD) report. The EPD is a third-party-verified report that explains the data generated from an LCA. The development of PCRs and EPDs has grown dramatically in recent years to help architects, designers and contractors meet green building goals.

The architectural coatings PCR was established in accordance with international environmental management guidelines (ISO 14025: Environmental labels and declarations – Type III environmental declarations) through the NSF International National Center for Sustainability Standards (NCSS). The NCSS utilized an open multi-stakeholder process to develop the PCR with participation from architectural coatings industry personnel, material manufacturers, sustainability consultants, government agency representatives

and other experts. The NCSS has issued or is developing PCRs and American national sustainability standards for a wide range of product and service categories, including commercial furnishings, fabrics, flooring, building products and materials, sanitizers, professional services, chemicals and water treatment, and distribution systems.

“Developing this product category rule with the guidance and expertise of NSF International is an important step in helping the coatings industry become more sustainable,” said Douglas Mazeffa, environmental project manager at Sherwin-Williams Co. “Coating manufacturers now have the opportunity to create verified environmental product declarations that report the environmental impacts of their products to purchasers.”

“This new product category rule for architectural coatings meets the increase in demand for transparency in environmental claims,” adds Jessica Evans, director of standards at NSF International. “NSF International’s robust PCR development and EPD validation services provide customers an internationally-accepted and science-based method to evaluate environmental claims and the impact of their products.”



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Chemfil Canada Sold to PPG

Chemfil Canada (Windsor, ON) has shifted the focus of its operations, as its pretreatment and total chemical management (TCM) businesses have now been sold to PPG. PPG was a 50 percent partner in Chemfil, but preferred not to purchase the parts of the Canadian firm's business that were unrelated to its core businesses.

"Acquiring the pretreatment business of Chemfil Canada will enable PPG to further strengthen its pretreatment offering and services in this area for global automotive OEM and industrial customers," said Cindy Niekamp, PPG senior vice president, automotive coatings. "PPG looks forward to enhancing supply capabilities for Chemfil customers and providing them with access to PPG's full portfolio of coatings products."

The Chemfil name will continue to be used, under an agreement with PPG, though the Windsor plant is now owned by a corporate entity called Dinachem. This is an affiliate of Madinal Enterprises, which owned the other 50 percent of Chemfil previously.

"We are very pleased to preserve Canadian jobs and the ability to make formulated chemicals in Canada to serve Canadian manufacturers," says Dinachem president Brian Patton. Under the Chemfil name, it will continue to supply industrial chemicals and other products, including metal forming lubricants and coolants, wire drawing, water and waste water treatment, laboratory chemicals, general cleaning products, biological products, paint strippers, textiles/custom robot covers, toll manufacturing and packaging, wholesale janitorial and sanitation products.

"With the exchange rate, many Canadian manufacturers are experiencing price increases from US chemical suppliers," says Andrew Conway, vice-president of Dinachem/Chemfil. "Being able to continue to provide made in Canada/priced in Canada technology is a boost for Canadian manufacturers."

Chemfil's plant is a 60,000 sq ft, TS/ISO certified chemical formulation and packaging facility, with 40 employees.

People News

Reiner Named Sales Manager for American Ultraviolet

Ed Reiner has joined American Ultraviolet (Lebanon, IN) as sales manager for the UV Coating Solutions Division. For over 25 years he has been involved with business development, sales, and marketing for start-up, small, and large business-to-business, and business-to-consumer companies, including Worldcom and Waste Management.

He will be based in Torrance, CA, where the Division has its headquarters. Among other interests, he is a member of the Clean Technology Council, dealing with business and educational support of environmental issues.

American Ultraviolet has manufactured tens of thousands of ultraviolet curing systems for use throughout the world. All equipment is manufactured in the US.



Ed Reiner

Microfibrillar Cellulose Addresses Mud Cracking

Exilva is Borregaard's new microfibrillar/microfibrillated cellulose (MFC) that decreases mud-cracking in exterior acrylic paint when applied in cold weather. The company specializes in products made using sustainable and natural raw materials.

Mud-cracks are a phenomenon occurring when paint is applied too thickly or allowed to build up in corners during application, or when the surface is not properly repaired. Mud-cracks look like irregular cracks in a surface, resembling cracks in dried mud.

New tests in acrylic exterior paints, conducted by Marschall Labs Inc. in the US show that Exilva reduces the tendency for mud-cracking during drying of acrylic pigmented systems. This in turn provides the opportunity to reduce coalescent levels and related VOC levels in paint.

Exilva is characterized by its ability to form stable three-dimensional networks of microfibrils in solvents, and offers a unique solution for high quality products. The secret behind its performance, is its unique combination of characteristics from soluble polymers and insoluble particles, enabling it to interact both physically and chemically with its surroundings.



Borregaard's Microfibrillar cellulose.

Manual Spray Gun

The Walther Pilot Terra manual spray gun is a budget-minded spray gun that has the same industrial quality as the company's other spray equipment. It features a stainless steel needle/nozzle combination as well as a high precision nozzle/air cap system.

The Pilot Terra is available in both gravity feed and material feed versions, as well as conventional and LVLP models. The LVLP model permits a transfer efficiency of over 65 percent.

There are three nozzle sizes available: 1.0mm, 1.4mm, and 1.8mm.



Walther Pilot Terra spray gun.

Pumps for Fluids Handling

Wilden, part of PSG, a Dover company and a supplier of air-operated double-diaphragm (AODD) pump technology, has released its new Stallion Original Metal AODD Pump models. These are powered by the energy-efficient Pro-Flo Shift Air Distribution System (ADS).

The pumps incorporate design features that make the handling

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Wilden's Stallion Pumps.

and transfer of fluids with high solid content more efficient and effective, including a shock-absorbing polyurethane screen base that absorbs the impact from constant assault by solid particles, resulting in maximized durability. They also feature a large internal clearance and flow-through design to keep the pump from clogging; an integrated suction strainer; and an altered ball/seat check valve assembly that maximizes part life, increases suction and maximizes flow rates.

Featuring simple installation and easy serviceability, Stallion

Series pumps are recommended for rugged utilitarian applications that require a robust design. They are also equipped with Wilden Pro-Flo Shift ADS. The Pro-Flo Shift incorporates a unique Air Control Spool that automatically restricts the amount of air going into the pump during the latter part of each stroke, which eliminates over-filling of the air chamber and results in reduced air consumption.

By optimizing air consumption, the Pro-Flo Shift lowers energy and operating costs, achieving up to a claimed 60 percent savings over competitive AODD pump technologies. Its robust design makes these pumps ideal for use in harsh operating environments and includes ATEX compliance for use in potentially explosive atmospheres.

The new Stallion Series pumps are available in three sizes: PS4, 38 mm (1-1/2 in.); PS8, 51 mm (2 in.) and PS15, 76 mm (3 in.). All are available in either aluminum or ductile iron materials of construction, are submersible, intrinsically safe, self-priming, shear-sensitive, offer increased On/Off reliability, can run dry, have superior anti-freezing properties and can handle pressures up to 125 psi. Depending on the model, flow rates range from 307 to 764 lpm (81 to 202 gpm).

Sun Chemical Adds Pigments

Sun Chemical Performance Pigments is introducing new pigment shades that it says significantly expand the color options for coatings formulators.

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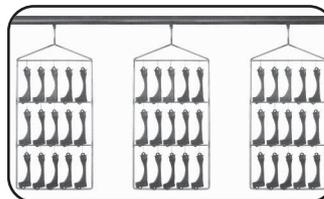
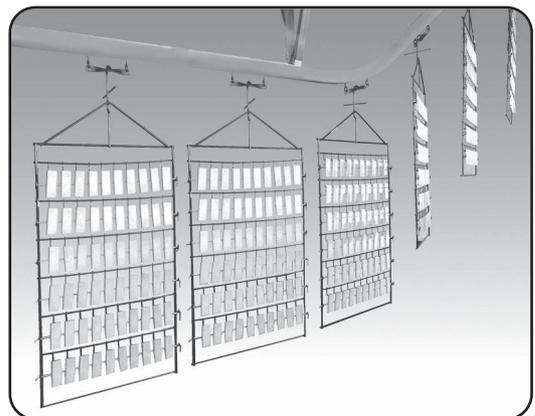
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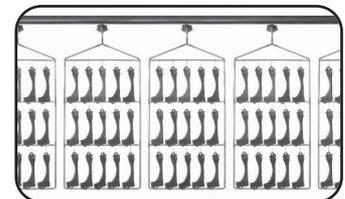
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Quindo Pigment.

The intense color of the new red shade Quindo Violet 55 Quinacridone pigment is 10 units more chromatic than a similar shade in the Pigment Violet 19 color space. The company adds that it offers outstanding weatherability and lightfastness, while delivering exceptional levels of transparency.

The company is also introducing a new yellow shade, Perrindo Maroon 179 high performance pigment, which features the benchmark transparency that is vital in producing modern, high chromatic metallic red automotive finishes. Complementing Sun Chemical's extended family of red pigments is Fanchon Yellow 150. This can be used to prepare orange and red metallic finishes.

Also new is Fanchon Orange 36, a high performance organic pigment with a high level of opacity and durability capable of replacing lead-based pigments in industrial mono-coat applications. A key benefit is that it is APEO-free.

Explosion-proof UV Light



Larson's Explosion-Proof Light Fixture.

Larson Electronics' new explosion proof ultraviolet fluorescent light fixture is US and Canada approved Class 1 Division 1, Class 2 Division 1 and uses a special ballast and bulb combination to produce ultraviolet light. This fixture has a T6 temperature rating and is recommended for hazardous locations where UV lamps are used to cure coatings and adhesives or as a germicidal agent.

The lamps are protected by heat and impact resistant Pyrex tubes and the fixture is constructed of copper free aluminum alloy.

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The lamp reflectors are corrosion resistant heavy gauge aluminum coated with a high gloss reflective finish.

This fixture can be customized with UVA, UVB, or UVC bulbs to produce the appropriate wavelength for a specific application. These fixtures come standard with surface mount brackets to attach to the ceiling, wall, or any flat surface.

Datacolor Launches New Spectrophotometers

Datacolor has introduced its Datacolor 800 and 500 series of spectrophotometers. The family of fully backward compatible bench-tops, complete with its new embedded processor and data storage, provides a platform for increased efficiency and color measurement. The series includes Datacolor 850, Datacolor 800, Datacolor 550, and Datacolor 500.



The Datacolor 800 family features a digital camera, the spectrophotometer allowing for optimal sample placement. The series is fully backward compatible with the

existing fleet of Datacolor 600 spectrophotometers. The Datacolor 800 is available immediately, and the Datacolor 850, which includes transmission measurement capability in addition to reflectance, will be available in January 2016.

The Datacolor 500 family offers an economical option for a high performance spectrophotometer with enhanced speed and advanced technology, while assuring compatibility with the existing fleet of Datacolor 400 instruments. The Datacolor 500 is available immediately. The Datacolor 550, a new addition to Datacolor's lineup, is a cost-effective transmission and reflectance instrument and will be available in January 2016.

Both the 800 and 500 families feature a new color LCD screen that displays calibration status and instrument settings to allow for greater confidence in measurement results. With an embedded processor, the health of the instruments can now easily be validated through remote diagnostics, allowing for faster issue resolution.

Instrument accessibility has also been expanded with the intro-

duction of an Ethernet port, allowing for simultaneous connection of multiple computers. Performance enhancements have been implemented as well to enable real-time sample measurement within a global Citrix or Terminal Server environment.

Fast Drying Alkyd Topcoat



Cortec Corp. is now offering VpCI-280. This is a fast drying, solvent-based alkyd topcoat that the company says has excellent UV resistance, and allows for great color and gloss retention. It can be matched to most custom colors.

VpCI-280, featuring patented vapor-phase corrosion inhibiting technology, was developed as a versatile, industrial finishing enamel for manufacturers of metal products. It offers, Cortec says, a quick dry time, high gloss, and good color and gloss retention.

It is recommended for industrial OEM uses, including agricultural and construction equipment. Regulatory benefits include very low levels of VOC and hazardous air pollutant solvents.

Cortec products protect with a thin, monomolecular protective barrier. The barrier re-heals and self-replenishes, and can be combined with other functional properties for added protective capabilities. VpCI forms a physical bond on the metal surface, creating a barrier layer against aggressive ions.

This one-coat system can be applied direct-to-metal, and provides protection in harsh, outdoor, unsheltered applications. The complex mixture of non-toxic, organic inhibitors offers protection that competes with most paints and zinc-rich primers.



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